ISSN 2531-1379

HEMATOLOGY TRANSFUSION AND CELL THERAPY

Hematology Specialist Association
19 National Congress

VOLUME 47,
SUPPLEMENT 4,
DECEMBER, 2025

ABHH
Associação Brasileira de Hematologia, Hemoterapia e Terapia Celular

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Hematology Specialist Association

19. National Congress

Abstract Book

16-19 October 2025

HEMATOLOGY SPECIALIST ASSOCIATION

Welcome Address

Dear Colleagues,

Our meeting, previously organized as “Çukurova Hematology Days” until 2020, has expanded beyond the Çukurova region due to increasing interest and participation from across Turkey, prompting a name update. Since 2021, we are delighted to present it as the “National Congress of the Hematology Specialization Society.”

The 19th National Congress of the Hematology Specialization Society will take place from October 16-19, 2025, at Grand Hotel Ontur Çeşme in İzmir. The congress format is designed to highlight our young colleagues, who will lead discussions through topic presentations and case studies. Our esteemed senior experts will provide guidance, sharing their experience and wisdom. Thus, alongside our mission to cultivate the next generation of speakers, we are also thrilled to create a resource for post-graduate training for young professionals stepping into the field.

Another key feature of the event is that it enables physicians in our country to exchange knowledge on various treatments and compare approaches, enriching their therapeutic practices.

Kind regards,

Birol Güvenç

President of Hematology Specialist Association

Serdar Bedii Omay

President of Hematology Specialist Association

Hematology Specialist Association

President

Birol Güvenç

Vice President

Serdar Bedii Omay

Secretary General

Hüseyin Saffet Beköz

Board Members

Şebnem İzmir Güner

Fatih Erbey

Mahmut Bakır Koyuncu

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President of Hematology Specialist Association

Serdar Bedii Omay

Vice President of Hematology Specialist Association

Alpay Yeşilaltay

Congress Scientific Secreteriat

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Şebnem İzmir Güner - Member of Hematology Specialist Association Board
Fatih Erbey - Member of Hematology Specialist Association Board
Mahmut Bakır Koyuncu - Member of Hematology Specialist Association Board
Şule Menziletoğlu Yıldız - Director of the School of Health Services, Çukurova University
Hüseyin Derya Dinçyürek - Mersin City Hospital

Abstract Reviewing Committee

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Emin Kansu
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Abdi Ibrahim Halil Sönmez
Abdullah Agit
Ahmet Ifran
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Ahmet Sarici
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Burhan Turgut
Bülent Eser
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Mehmet Ali Özcan
Mehmet Ali Uçar
Mehmet Bakirtaş
Mehmet Baysal
Mehmet Çelik

Mehmet Gündüz
Mehmet Sinan Dal
Mehmet Sönmez
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Meryem Şener
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Mustafa Duran
Mustafa Köroğlu
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Müzeyyen Aslaner
Nanişe Gizem Fener
Neryal Tahta
Neslihanmandaci Şanli
Nihal Boz
Nihal Karadaş
Nur Soyer
Nurgül Yönyül
Oktay Bilgir
Orhan Ayyildiz
Ömer Doğru
Pelin Aytan
Ridvan Ali
Salih Gözmen
Salih Sertaç Durusoy
Selver Kurt
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Serdar Bedii Omay
Serhat Çelik
Serkan Güven
Serkan Ünal
Seval Akpinar
Songül Beskisiz Dönen
Sultan Okur Acar
Süleyman Arslan
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Şehmus Ertop
Şengül Baran Yerlikaya
Şifa Şahin
Şule Çalişkan Kamiş
Tahsin Yüksel
Tanju Atamer
Tayfur Toptaş
Tuba Hacibekiroğlu
Tuba Sarici
Turgay Ulaş
Tülin Tuğlular
Ufuk Demirci
Utku Aygüneş
Vahap Okan
Yeşim Oymak
Yunus Çatma
Zahit Bolaman
Zekeriya Aksöz

Chairs and Speakers Biographies

Müzeyyen Aslaner

Assoc. Prof. Dr. Müzeyyen Aslaner

I was born in 1977 in Van-Erciş. I graduated from Dokuz Eylül University Faculty of Medicine in 2000. I completed my Internal Medicine specialization at Istanbul Training and Research Hospital in 2009. After working as an internal medicine specialist for three years, I completed my Hematology specialization at Zonguldak Bülent Ecevit University Faculty of Medicine, Department of Hematology between 2013-2016. I completed my compulsory subspecialty service in Hematology at Gaziantep Dr. Ersin Arslan Training and Research Hospital between 2016-2018. I worked at Ege University Faculty of Medicine, Department of Hematology, Bone Marrow Transplantation Unit for one year between 2018-2019. I have been working as an assistant professor at the Department of Hematology at Zonguldak Bülent Ecevit University, Faculty of Medicine, since December 2019, and as an associate professor of hematology since 2023.

Bülent Eser

I was born in 1968 in Ankara. I graduated from Istanbul Medical Faculty in 1990. I started my hematology training at Erciyes Medical Faculty in 1998. I became a hematology professor in 2011. I have 142 scientific publications 45 of them were published in Turkish and 97 of them were published in international journals. I took part in many meetings as a congress organizing board member and invited speaker. I have more than 200 national and international congress abstracts and presentations.

National and International Tasks

Erciyes University Medical Faculty, Director of Blood Bank, 2004- 2019

Hematology Laboratories, Director (Blood counting and coagulation laboratories), 2004-2008

Hematology Flow Cytometry Laboratory, Founder and Director 2006-2012

Transfusion Committee, Chairman, 2005-2019

Patient and Employee Safety Board member, 2010- 2019

Hospital Transplantation Committee Board Member, 2011-2019.

JACIE accreditation inspector (International inspector for stem cell transplantation) 2010-2016.

Responsible for apheresis unit and BMT service during JACIE accreditation process (As of February 14, 2012, my former clinic has been granted JACIE accreditation.).

Medical Park Antalya Hospital, Hematology Clinic Director, 2019- 2025 (continued).

He currently provides service in Bone Marrow Transplantation Unit and Hematology Department of Emsey Hospital in Istanbul.

He published many national and international articles and has good command of the English and Japanese languages.

Serkan Guven

Hematology Specialist
Çanakkale Mehmet Akif Ersoy State Hospital, Hematology Clinic
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Education

2018–2022 - Hematology Subspecialty Training, Namık Kemal University & Dokuz Eylul University

2011–2015 - Internal Medicine Residency, Antalya Training and Research Hospital

2001–2007 - Medical Doctor (M.D.), Van Yuzuncu Yil University Faculty of Medicine

Professional Experience

2022–Present : Hematology Specialist, Çanakkale Mehmet Akif Ersoy State Hospital

Previous positions: Dokuz Eylul University, Namık Kemal University, Babaeski State Hospital

Scientific Contributions

Author of more than 20 SCI/SCI-E indexed publications (e.g., Sci Rep 2024, J Clin Med 2025, Turk J Haematol 2024)

Investigator in multinational clinical trials

More than 30 congress presentations and oral communications

Book chapters: Polycythemia Vera, Vitamin B12, Pathogenesis of Chronic Lymphocytic Leukemia, Clinical Management of Chronic Lymphocytic Leukemia

Research Interests

Myeloproliferative neoplasms

Chronic Lymphocytic Leukemia (CLL)

Multiple Myeloma

Artificial intelligence applications in hematology

A. Emre Eşkazan

Ahmet Emre Eşkazan, MD, is a Professor of Internal Medicine and Hematology currently working in the Division of Hematology, Department of Internal Medicine at the Cerrahpaşa Faculty of Medicine of the Istanbul University-Cerrahpaşa, Istanbul. He was graduated from Cerrahpaşa Faculty of Medicine in 1999 and completed his internal medicine residency and hematology fellowship at the same institute in 2005 and 2010, respectively. He is an active member of Turkish Society of Hematology (TSH), European Hematology Association (EHA), American Society of Hematology, and American Society of Clinical Oncology. He is also the Society of Hematologic Oncology (SOHO) Ambassador to Turkey. He is currently the head of chronic myeloid leukemia (CML) and myeloproliferative neoplasm (MPN) Scientific Subcommittee of TSH and he is a member of the EHA Scientific Working Group on CML. He is the vice-chair of the European Board for Accreditation in Hematology (EBAH) and a member of the EHA Curriculum-Exam Committee. Dr Eşkazan has authored more than 180 peer-reviewed publications. His main research topics are myeloid malignancies including, CML, MPNs, and acute myeloid leukemia.

Nur Soyer

Nur Soyer, M.D., is currently an associate professor in the Department of Hematology in the Division of Internal Medicine at the Faculty of Medicine at Ege University. She graduated from Ege University, School of Medicine, Izmir, with high honors. After graduation, she started her residency at the same faculty's internal medicine department. She completed her subspecialty in hematology in 2010. She worked as a hematology specialist at training and research hospitals in Diyarbakır and Izmir until 2013. In 2013, she started working as a hematology specialist at Ege University Faculty of Medicine. In 2015, she completed a three-month observation rotation in the Leukemia Department at the University of Texas MD Anderson Cancer Center. Since 2017, she has continued her academic career as an associate professor.
Her research interests in the field of hematology are chronic myeloproliferative neoplasms, Systemic mastocytosis, hemoglobinopathies and stem cell transplantation. Nur Soyer has published over 90 articles, reviews, and case reports in both national and international journals. Nur Soyer has also presented over 200 oral and poster presentations at national and international conferences and symposiums.
She has participated in more than 60 clinical research projects as a principal investigator or sub-investigator. Nur Soyer has more than 10 scientific research projects that are supported by university or national research funds, either completed or still ongoing.

Ufuk Demirci

I completed my medical education at Ege University between 2004 and 2011. Subsequently, I completed my internal medicine specialization at Celal Bayar University between 2012 and 2016, followed by my haematology fellowship programme at Trakya University between 2019 and 2022. I am working as an assistant professor in the Department of Haematology at Celal Bayar University Faculty of Medicine, Manisa/Türkiye for about one year.

Barış Yilmaz

1. Personal Information
Full Name: Dr. Barış Yılmaz
Title: Assistant Professor
Place and Date of Birth: Yalova, Turkey – 21 June 1976
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Phone: +90 532 387 63 91
Nationality: Turkish

ORCID: https://orcid.org/0000-0002-6542-0570
Web of Science Researcher ID: CAA-1655-2022

2. Education

Degree	Field	Institution	Year
M.D.	Medicine	Istanbul University, Cerrahpaşa Faculty of Medicine	2002
Residency	Pediatrics	Dr. Lütfi Kırdar Kartal Training and Research Hospital	2007
Subspecialty Fellowship	Pediatric Hematology and Oncology	Marmara University	2013

3. Academic and Professional Experience

Position	Duration	Department	Institution/ Organization	City	Country
Research Assistant	2002 – 2007	Pediatrics	Ministry of Health	Istanbul	Turkey
Research Assistant	2009 – 2013	Pediatric Hematology and Oncology	Marmara University	Istanbul	Turkey
Specialist Physician	2014 – 2025	Pediatric Hematology and Oncology	SB Marmara University Pendik Training Hospital	Istanbul	Turkey
Assistant Professor	2025 – Present	Pediatric Hematology and Oncology	Marmara University	Istanbul	Turkey

4. Professional Memberships

- Turkish Society of Pediatric Hematology (TPHD)
- Turkish Pediatric Oncology Group (TPOG)

5. Academic Interests

- Pediatric Hematology and Oncology
- Hemostasis and Coagulation Disorders
- Childhood Leukemias and Solid Tumors
- Pediatric Anemias
- Thrombocytopenias

Hande Oğul Sücüllü

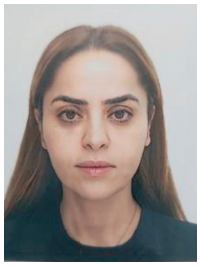
I was born in Istanbul in 1984.
I graduated from Yeditepe University Faculty of Medicine in 2009.
I was appointed as a general practitioner to the Bozkır district of Konya province through the government service obligation duty.
In 2012, I started working as an Internal Medicine resident doctor at Medipol University Hospital.
In 2017, I was appointed to Bozkır State Hospital as an Internal Medicine Specialist through a government service obligation duty.
In October 2018, I started working as a Hematology fellowship doctor at Pamukkale University Hospital.
After completing my specialization, I started working as a Hematology Specialist at Batman Training and Research Hospital in March 2022, through the government service obligation duty.
From January 2024 to June 2025, I worked as a Hematology Specialist at Batman Medical Point Hospital.
Since July 2025, I have been working as a Hematology Specialist at **Izmir Economy University Medical Point Hospital**.

Mehmet Sonmez

Prof. Dr. Mehmet Sonmez, M.D.

Karadeniz Technical University, School of Medicine, Department of Haematology, Trabzon, Turkey
He graduated from İstanbul University Cerrahpaşa Faculty of Medicine in 1988. He completed his Internal Medicine and Hematology in Karadeniz Technical University Faculty of Medicine. He has a great number of nationally and internationally published works, papers, book chapters and editorial works. He is also a member of various national and international institutions and organizations. He has been working as an academician responsible for the bone marrow transplant unit, tissue typing laboratory, apheresis unit, flowcytometry and hemostasis laboratories at Karadeniz Technical University Faculty of Medicine since 2009 and still holds his position as the president of the Hematology Department.

Emel İşleyen Kaya



I was born in 1983 in Ankara, Türkiye. I graduated from Eskişehir Osmangazi University Faculty of Medicine, completed my internal medicine residency at Başkent University, and finalized my hematology fellowship at Ankara Bilkent City Hospital. I currently work as a hematology specialist in the Adult Hematology Department at Ankara Bilkent City Hospital. I am an alumnus of the Turkish Hematology Society Lymphoma Academy, and in 2024 I received the Oral Presentation Award at the THD Congress for my work on Hodgkin lymphoma.

Zekeriya Aksoz

Fırat University Faculty of Medicine, Department of Internal Medicine, Department of Hematology

Personal Information
Place and date of birth: Maden/Elazığ - January 2, 1985
E-mail: zaksoz@yahoo.com
Education
Undergraduate: Fırat University Faculty of Medicine, 2004-2010
Medical Specialization: Health Sciences University, Ankara Keçiören Training and Research Hospital, Internal Medicine Clinic, 2011-2015
Medical Specialization: Atatürk University Faculty of Medicine, Department of Internal Medicine, Department of Hematology, 2018-2021
Scientific Articles
1. Thyrotoxicosis associated with severe hypoalbuminemia and hyperbilirubinemia
Evlice M., Aksoz Z., The Egyptian Journal of Internal Medicine volume 29, pages196–198, 2017.
2. The easy way of evaluating exocrine pancreatic insufficiency in type 2 diabetes: listen to the patients' complaints and look in their eyes!
Aksoz Z., Akkan T., et all, Acta Gastro-Enterologica Belgica, Vol. 83, July-September 2020 pages 407-412.
3. The relationship between glycemic control and BNP levels in diabetic patients
Dal K., Ata N., Yavuz B., Sen O., Deveci OS., Aksoz Z., Yildirim AM., Uygungelen B., Akin KO., Beyan E., Ertugrul DT. Cardiol J 2014;21(3):252-256.
4. Association of serum proprotein convertase Subtilisin/Kexin Type 9 (PCSK9) level with thyroid function disorders
Yildirim A., Koca A.O., Beyan E., Dogan O., Karakaya S., Aksoz Z., Ertugrul DT., European review for medical and pharmacological sciences, cilt.25, sa.17, ss.5511-5517, 2021.
5. Case Report: Marine-Lenhart Syndrome in a Male Patient
Altay M., Aksoz Z., Akkan T., Journal of Contemporary Medicine 2015;5(1).
6. Pemfigus Vulgaris nedeniyle immünsupresif tedavi alan ve pansitopeni gelişen bir hastada visseral leishmaniasis

Bay İ., Aksöz Z., Kavaz N., Yıldırım R., Türkiyede Lösemi lenfoma myelom araştırmaları cilt 2 S:98-100, 2018.
7. The Importance of Serum Procalcitonin and C-reactive Protein Levels in Patients with Lymphoma
Sincan S., Sincan G., Karaköse MN., Aksoz Z., Erdem F. Meandros Medical And Dental Journal, cilt.24, sa.2, ss.166-174, 2023.
8. A case report of relapsed/refractory primary central nervous system lymphoma
Aksöz Z. J Curr Hematol Oncol Res. 2024; 2(3):76-78.
9. A Case Report of non Hodgkin Lymphoma Presenting With Upper Gastrointestinal Tract Bleeding
Aksöz Z. Journal of Emergency Medicine Case Reports. 2024;15 (2): 59-62
10. Thyrotoxicosis associated with severe hypoalbuminemia and hyperbilirubinemia
Evlice M., Aksöz Z. The Egyptian Journal of Internal Medicine 2017, 29:196–198
11. Monoclonal Antibodies, Aksoz Z., Hematology, Transfusion and Cell Therapy, Volume 46, Supplement 7, 2024, Page S14, ISSN 2531-1379

Book Chapter

1. Kan transfüzyon ilkeleri
Z. Aksöz - Sağlık & Bilim 2022: İç Hastalıkları Acilleri, 2022
2. Preoperatif Hastanın Hematoloji Açısından Değerlendirilmesi
Z. Aksöz - Sağlık & Bilim 2023: Güncel Tıp – II, 2023
3. Lökositoz
Z. Aksöz – THNG Klinik Hematoloji Kitabı, 2023

Oral Presentations

1. Nilotinib kullanımına bağlı aplastik anemi
Ö Topdağı, Z Aksöz, 5. Karadeniz Hematoloji Kongresi, 2019
2. Ekzokrin pankreas yetmezliğinin diabetik mikrovasküler komplikasyonlarla karşılaştırılması
Z. Aksöz, E. Beyan, AM.Yıldırım, İ. Karadağ, DT. Ertuğrul 17.İç Hastalıkları Kongresi, 2015

Memberships

1. European Society of Hematology

Web of science H-index: 3

Deniz Ozmen

Birth place and date: Sivas-Turkey, Jan 03, 1987
Nationality: Turkish
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ORCID ID: https://orcid.org/0000-0001-7561-446X
Web of Science ResearcherID: D-4230-2019

Graduated Schools:

1. Graduated from Istanbul University Istanbul Medical Faculty in 2010.
2. I spent 3 months as a visiting medical student at Sidney Kimmel Cancer Center Tumor Immunology Department, Johns Hopkins University, USA in 2007. I had the opportunity to participate in basic research facilities and scientific meetings.

Languages:
Turkish – native speaker, **English** – proficient, **French** – basic, **German** – basic, **Greek**- basic.
Jobs:

1. In February 2011, I started my residency in Istanbul University Istanbul Medical Faculty Department of Internal Medicine, and became an internist in 2015. During my residency, I served as a resident physician representative.
2. After becoming an internist, I worked in Simav State Hospital -a district which has an average population of about 65,000- between June 2015 to July 2016 in Kutahya, Turkey. I was responsible of both inpatient and outpatient clinics and dialysis unit. As an internist, I took care of a variety of patients during my one-year experience.
3. In July 2016, I started my fellowship in Istanbul University Cerrahpasa Medical Faculty, Department of Internal Medicine, Division of Hematology and became a hematologist in 2020.
4. Between 2020 and June 2022, I worked as a hematologist at Haydarpaşa Numune Hospital, in Istanbul, Turkey.
5. I am currently working as a full-time hematologist at Istanbul University Cerrahpasa Medical Faculty, Department of Internal Medicine, Division of Hematology since July 2022. I actively participate in outpatient patient care, treatment decisions and management. Besides, I give lectures to 2nd and 4th year students three times a year (topics I teach are, physical examination, aplastic anemia and disseminated intravascular coagulation.)

I am the member of the professional associations that are listed below:

1. Turkish Society of Haematology
2. European Hematology Association
3. Turkish Medical Association

Trials that I actively participated in:

1. **SABRINA *BO22334:*** A two-stage phase III, international, multi-center, randomized, controlled, open-label study to investigate the pharmacokinetics, efficacy and safety of rituximab SC in combination with CHOP or CVP versus rituximab IV in combination with CHOP or CVP in patients with previously untreated follicular lymphoma followed by maintenancetreatment with either rituximab SC or rituximab IV. 2017, Co-investigator.
2. **ISATUXIMAB *TED10893*.** Phase 1/2 Dose Escalation and Efficacy Study of Anti-CD38 Monoclonal Antibody in Patients With Selected CD38+ Hematological Malignancies. 2018, Co-investigator.
3. **CABL001A2301:** Study of Efficacy of CML-CP Patients Treated With ABL001 Versus Bosutinib, Previously Treated With 2 or More TKIs. 2018, Co-investigator.
4. **BOREAS**: a global, phase III study of the MDM2 inhibitor navtemadlin (KRT-232) in relapsed/refractory myelofibrosis. Co-investigator.
5. **CABL001J12302**: A Study to Investigate Tolerability and Efficacy of Asciminib (Oral) Versus Nilotinib (Oral) in Adult

Participants (≥18 Years of Age) With Newly Diagnosed Philadelphia Chromosome Positive Chronic Myelogenous Leukemia in Chronic Phase (Ph+ CML-CP) (ASC4START). Co-investigator.

6. **VAYHIT1**: A phase III, randomized, double-blind study of ianalumab (VAY736) versus placebo in addition to first-line corticosteroids in primary immune thrombocytopenia. Co-investigator.
7. **VAYHIT3:** An Open-Label, Single-Arm, Phase II Trial to Evaluate the Efficacy and Safety of Ianalumab in Patients with Primary Immune Thrombocytopenia (ITP) Previously Treated with at Least 1 Corticosteroid and 1 Thrombopoietin Receptor Agonist (TPO-RA).

Publications:

1. Eskazan AE, **Ozmen D**. Tyrosine kinase inhibitor (TKI) therapy for newly-diagnosed patients with chronic myeloid leukemia: Focusing on TKI discontinuation due to adverse events – is better always good? Expert Rev Hematol. 2017;10(7):583-586.
2. Kucukyurt S, Kelezoglu A, Elverdi T, **Ozmen D**, Ar MC, Eskazan AE. Ponatinib both as an effective bridge to allogeneic hematopoietic stem cell transplantation and as posttransplant maintenance therapy in a chronic myeloid leukemia patient with myeloid blast crisis. Hematol Transfus Cell Ther. 2021 Jun 16;S2531-1379(21)00082-1.
3. Eşkazan AE, **Özmen D**, Öztaş M, Bektaş F, Bayraktar EA, Sadri S, Keskin D, Özgür Yurttaş N, Elverdi T, Salihoğlu A, Ar MC, Öngören Ş, Başlar Z, Aydın Y, Soysal T. Efficacy and Safety of Imatinib Treatment in Elderly Patients With Chronic Myeloid Leukemia: Real-Life Data and a Single-Center Experience. Clin Lymphoma Myeloma Leuk 2021 Aug;21(8):549-557.
4. Ayer M, Akay CM, Ayer FAA, **Ozmen D**, Elibol T. Evaluation of Hypogammaglobulinemia in Chronic Lymphocytic Leukemia Patients and Its Relation to Poor Prognostic Factors. Med Bull Haseki. DOI: 10.4274/haseki.85057.
5. **Ozmen D**, Soysal T. Chronic Lymphocytic Leukemia in Older Patients (Article in Turkish). Turkiye Klinikleri J Perspectives on Geriatric Hematology. To be published on Feb 2018. 10.1080/17474086.2017.1339599.
6. **Özmen D**, Alpaydın DD, Saldoğan MA, Eşkazan AE. A safety review of tyrosine kinase inhibitors for chronic myeloid leukemia. Expert Opin Drug Saf. 2024 Apr;23 (4):411-423. doi: 10.1080/14740338.2024.2331190. Epub 2024 Apr 1. PMID: 38484148.
7. Narlı Özdemir Z, İpek Y, Patır P, Ermiş G, Çiftçiler R, **Özmen D**, Baysal M, Gürsoy V, Yıldızhan E, Güven S, Ercan T, Elibol T, Mersin S, Genç E, Davulcu EA, Karakuş V, Erkut N, Güneş G, Diz Küçükkaya R, Eşkazan AE. Impact of CALR and JAK2V617F Mutations on Clinical Course and Disease Outcomes in Essential Thrombocythemia: A Multicenter Retrospective Study in Turkish Patients. Turk J Haematol. 2024 Mar 1;41(1):26-36. doi: 10.4274/tjh.galenos.2024.2023.0430. PMID: 38433449; PMCID: PMC10918406.
8. Yılmaz U, Zulfaliyeva G, Güzelli AN, **Özmen D**, Elverdi T, Salihoğlu A, Eskazan AE, Öngören Ş, Başlar Z, Ar MC. Does discontinuing bleomycin due to toxicity increase the risk of lymphoma progression? Real-life data from a homogeneous population of advanced stage Hodgkin lymphoma. J Chemother. 2023 Nov 16:1-8. doi: 10.1080/1120009X.2023.2281089. Epub ahead of print. PMID: 37974409.
9. **Özmen D**, Aday AD, Nalçacı M, Aktan M. The Incidence of BRAF V600E Mutations and the Impact of Cladribine Treatment on the Incidence of BRAF V600E Mutations and Survival in Hairy Cell Leukemia Patients: A Case-Control Study Turkiye Klinikleri J Med Sci. 2024;44(2):69-75 doi: 10.5336/medsci.2023-98368.
10. **Ozmen** D, Soysal T. Chronic Lymphocytic Leukemia in Older Patients (Article in Turkish). Turkiye Klinikleri J Perspectives on Geriatric Hematology. Feb 2018.
11. Elverdi T, Erçalışkan A, Karaali R, Balkan İi, **Özmen D**, Salihoğlu A, Mete B, Eşkazan Ae, Başlar Z, Tabak F, Ar Mc (October 1, 2023) Flow Cytometric Analysis of Lymphocyte Subsets of Covid-19 Patients from A Single Centre in Turkey. Acıbadem Üniversitesi Sağlık Bilimleri Dergisi 14 4 534–541.

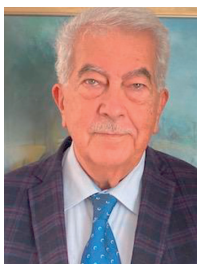
Complete List of Published Work in my Bibliography:
https://www.ncbi.nlm.nih.gov/myncbi/10myEUdPMlx5C/bibliography/public/
Journals for which I have evaluated articles:

1. Turkish Journal of Hematology
2. Journal of Medical Case Reports
3. PLOS ONE
4. Frontiers in Medicine
5. Cancer Medicine

Meetings attended:

1. Case presentation at the EHA-SWG meeting on Rare Lymphomas, March 2017, Barcelona Spain.
2. Oral poster presentation at ESH 4th International Conference on Hematologic Malignancies at Older Age, March 2018, Mandelieu, France. Granted with a scholarship.

Tanju Atamer



He was born in Ayancık, a district of Sinop, in October 1948. He began his primary education there. He completed his secondary education in Giresun, Kastamonu, and Karabük (Demir Çelik High School). He began his higher education at Istanbul University's Istanbul Faculty of Medicine in 1966 and completed it in 1972. He began his specialization in the Internal Medicine Clinic of the same faculty the same year. He completed his short-term military service in 1975. In 1977, he became a specialist in Internal Medicine with his thesis "The Place of Vinca Rosea Alkaloids in the Treatment of ITP" and began working as a chief resident in the Hematology Department of the same clinic. In 1980-1981, he worked for 10 months in the Department of Hematology at the Saint-Antoine Medical Faculty of the University of Paris (Pr. G. Duhamel) on in vitro granulocyte-macrophage cultures of

blood and bone marrow cells obtained from patients with acute myeloid leukemia and non-leukemic myeloproliferative disease, as well as on hematopathology training. In 1982, he was appointed associate professor with his thesis "In Vitro Investigation of Granulopoiesis in Acute Myeloid Leukemia" and continued his work at his faculty. In 1983 according to the Higher Education Institution (YÖK) law, he was assigned as the sole faculty member in the Department of Hematology of Dicle University for a fall semester educational and teaching studies. He managed hematology service and helped establish of its hemostasis laboratory. In 1988 he was appointed professor in Istanbul Medical Faculty. His areas of interest among hematological diseases include hematopoietic disorders, platelet disorders, coagulation disorders, anemias, and paraproteinemias constitute his areas of interest, and the majority of his work is in these areas. He is the author and co-editor of several chapters on blood diseases in the multi-authored book "Internal Medicine." He is a member of the Turkish Medical Association, the Turkish Hematology Association, the Clinical Microbiology Association, the Turkish Blood Centers and Transfusion Association, and the European Hematology Association (EHA). He is married with two children.

Esra Cengiz

Speciality: Hematology Education and Training Activities
M.D., Ankara University Medical School, Ankara, 2013
Internal Medicine Specialist, Ankara Numune Training and Research Hospital, Ankara, 2018
Hematology Specialist, Ankara City Hospital, Ankara, 2023
Work From March 2025 to Now: Denizli State Hospital, Denizli, Turkey

Mehmet Bakirtaş

A. Personal Information
Name Surname : Mehmet Bakirtaş
Academic Title: Associate Professor
Birth Date : 08.06.1986- Köyceğiz/ Turkey
Knowledge of foreign Languages: English, German
Duty Station: Tekirdağ İ.Fehmi Cumalıoğlu Cıty Hospital /Hematology Department Tekirdağ/ Turkey
E-mail adress: drbakirtas@hotmail.com /drbakirtas@gmail.com
Telefon: +90 05427761252
B. Educational Information
University/faculty graduated from : Black Sea Technical University, / Faculty of Medicine, **2005- 2011, 2011 Graduation, Medicine Doctor**
Akdeniz University/Faculty of Medicine/Department of Internal Medical Sciences/Department of Internal Medicine)- **Internal Medicine Research Assistant 28.02.2012-17.01.2017- / 17.01.2017 İnternal Medicine Specialist**
University of Health Sciences/Ankara Dr. Abdurrahman Yurtaslan Oncology Health Application and Research Center/ Department of Hematology, **Hematology Fellowship 12.12.2017-30.07.2021**
Republic of Turkey Ministry of Health Tekirdağ Dr. İsmail Fehmi Cumalıoğlu City Hospital, Department of Hematology, **2021- still working /**
C. Equivalencies ;
1- European Hematology Association (EHA) Board Certificate 2020

Mahmut Bayik

Graduated from Hacettepe University Medical Faculty in 1975. Obtained his specialty in Internal Medicine from Hacettepe University and his specialty in Hematology from Marmara University. Worked at Hacettepe University, Gümüşsuyu Military Hospital, Şişli Etfal Hospital, and was ın the founder team of Marmara University Hospital and the Academıc Hospital. Became an associate professor in 1987 and a professor in 1993. Held various administrative positions at the university. After retiring from Marmara University, he was involved in the establishment of Istanbul Kent University. He was one of the founders of the Blood Banking and Transfusion Society of Türkiye and served as its president for 18 years. He served as Vice President of the International Society of Blood Transfusion from 2004 to 2008. He is currently the president of the Turkish Blood Foundation.

Yunus Çatma

Personal Data
Turkısh
Malatya, Turkey
Department of Hematology
Istanbul University
Istanbul Faculty of Medicine
Fatih/ Istanbul
Email yunus.catma@istanbul.edu.tr
Tel. +90 538 223 7272

Education
Undergraduate:
2010-2016 Istanbul University Faculty of Medicine
Graduate: Istanbul University Istanbul Faculty of Medicine, 2016-2020
Department of Internal Medicine, Physician Associate
Professional Experience
6/2012-9/2012 Researcher. Michael F: Romero (Mayo Clinic MN) Functional analysis of human NBCe1 disease mutations
Dept. Physiology & Biomedical Engineering Mayo Clinic
College of Medicine Div. Nephrology & Hypertension Mayo Clinic College of Medicine

Professional Activities:

11/2020- 10/2022 Hayrabolu State Hospital, Turkey
Chief Physician

Specialist Physician in Department of Internal Medicine Blood Bank Manager Hemodialysis Units manager Infection Control Committee Administrator

10/2022- Present Istanbul University Istanbul Faculty of Medicine, Department of Hematology

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

1. Medetalibeyoglu A, Catma Y, Senkal N, Ormeci A, Cavus B, Kose M, Bayramlar OF, Yildiz G, Akyuz F, Kaymakoglu S, Tukek T. The effect of liver test abnormalities on the prognosis of COVID-19. Ann Hepatol. 2020 Nov-Dec;19 (6):614-621. doi: 10.1016/j.aohep.2020.08.068. Epub 2020 Sep 10. PMID: 32920162; PMCID: PMC7481800.
2. Bayraktar A, Catma Y, Akyildiz A, Demir E, Bakkaloglu H, Ucar AR, Dirim AB, Usta Akgul S, Temurhan S, Gok AFK, Ozluk Y, Kilicaslan I, Oguz FS, Sever MS, Aydin AE, Turkmen A. Infectious Complications of Induction Therapies in Kidney Transplantation. Ann Transplant. 2019 Jul 12;24:412-417. doi: 10.12659/AOT.915885. PMID: 31296835; PMCID: PMC6652377.
3. Bektaş M, Ağargün BF, Torun ES, Çatma Y, Beşişik SF, Nalçaci M, Yegen G, Yalçinkaya Y, Esen BA, Gül A, Öcal ML, İnanç M. Pure Red Cell Aplasia in IgG4-Related Disease: Successful Treatment With Cyclosporine. J Clin Rheumatol. 2020 Dec 14. doi: 10.1097/RHU.0000000000001666. Epub ahead of print. PMID: 33323754.
4. Medetalibeyoglu A, Emet S, Kose M, Akpinar TS, Senkal N, Catma Y, Kaytaz AM, Genc S, Omer B, Tukek T. Serum Endocan Levels on Admission Are Associated With Worse Clinical Outcomes in COVID-19 Patients: A Pilot Study. Angiology. 2021 Feb;72(2):187-193. doi: 10.1177/0003319720961267. Epub 2020 Sep 24. PMID: 32969233.
5. Medetalibeyoglu A, Senkal N, Kose M, Catma Y, Bilge Caparali E, Erelel M, Oral Oncul M, Bahat G, Tukek T. Older Adults Hospitalized with Covid-19: Clinical Characteristics and Early Outcomes from a Single Center in Istanbul, Turkey. J Nutr Health Aging. 2020;24(9):928-937. doi: 10.1007/s12603-020-1477-2. PMID:33155617; PMCID: PMC7597420.
6. Sonsoz MR, Oncul A, Cevik E, Orta H, Yilmaz M, Ayduk Govdeli E, Nalbant A, Demirtakan ZG, Tonyali M, Durmus D, Anakli I, Polat O, Catma Y, Senkal N, Medetalibeyoglu A, Kose M, Emet S, Tukek T. Wide QRS Complex and Lateral ST-T Segment Abnormality Are Associated With Worse Clinical Outcomes in COVID-19 Patients. Am J Med Sci. 2021 Feb 10:S0002-9629(20)30549-8. doi: 10.1016/j.amjms.2020.12.012. Epub ahead of print. PMID: 33581838; PMCID: PMC7834457.
7. Baykiz D, Govdeli EA, Ozer PK, Karaayvaz EB, Catma Y, Medetalibeyoglu A, Cagatay A, Umman B, Tukek T, Bugra Z. Evaluation the relationship of left ventricular global longitudinal strain and laboratory parameters in discharged patients with COVID-19: a follow-up study. Int J Cardiovasc Imaging. 2021 Apr 7:1–14. doi: 10.1007/s10554-021-02228-w. Epub ahead of print. PMID: 33826019; PMCID: PMC8025070
8. Ozer PK, Govdeli EA, Baykiz D, Karaayvaz EB, Medetalibeyoglu A, Catma Y, Elitok A, Cagatay A, Umman B, Oncul A, Tukek T, Bugra Z. Impairment of right ventricular longitudinal strain associated with severity of pneumonia in patients recovered from COVID-19. Int J Cardiovasc Imaging. 2021 Apr 11:1–11. doi: 10.1007/s10554-021-02214-2. Epub ahead of print. PMID: 33839981; PMCID: PMC8036243.
9. Gulistan Bahat[1], Alpay Medetalibeyoglu, Naci Senkal, Timurhan Cebeci, Meryem Merve Oren, Seniha Basaran, Huzeyfe Arici, Yunus Catma, Murat Kose, Mehmet Akif Karan, Tufan Tukek. Symptomatology and imaging findings in early post-Covid period: A comparative study in older vs younger patients. Exp Gerontol . 2022 Oct 1;167:111907. doi: 10.1016/j.exger.2022.111907. Epub 2022 Aug 6.
10. M Kose , N Senkal, T Tukek, T Cebeci, S C Atalar, M Altinkaynak, H Arici, S Genc, Y Catma, M Kocaaga, A Medetalibeyoglu, S Emet. Severe vitamin D deficiency is associated with endothelial inflammation in healthy individuals even in the absence of subclinical atherosclerosis. Eur Rev Med Pharmacol Sci . 2022 Oct;26(19):7046-7052. doi: 10.26355/eurrev_202210_29888.

Invited Talks:

1. EP-265 Nuclear imaging methods exceptions in the diagnosis of gastric cancer: case report Yunus Catma, Ahmet Burak Dirim, Alp atasoy, Cemil Tascioglu. 34th National Gastroenterology Week 2017 / Antalya- Turkey.
2. Panel: Diagnosis From Changes In Blood Values With Cases. Tufan Tukek, Sevgi Kalayoglu Besisik, Yunus Catma 20th National Internal Medicine Congress.October 2018 / Antalya- Turkey.
3. SS-29 Oral Presentation: COVID-19 Related Subacute Thyroiditis Case Report. Yunus Catma, Ramazan Cakmak Istanbul Medical School Traditional Internal Medicine Days Interactive Update March 2021 Sakarya – Turkey.
4. P30. Inhıbıtıon Complement C5 ımproves severe Hemolytıc Anemia ın Cold Agglutının in Disease with no response to Glucocorticoid and Rituximab. Erdem S, Çatma Y , Besisik S.K. 17th WAA, 22nd ESFH and 6th TSHRD 14-17 September 2022 Istanbul,Turkey.

Salih Sertaç Durusoy

Dr. Salih Sertaç Durusoy is a specialist in Hematology with over 15 years of experience in the field of medicine. He graduated from medical school in 2010 and completed his residency in Internal Medicine before pursuing subspecialty training in Hematology, which he successfully completed in 2019.

Following his certification, Dr. Durusoy worked for three years at Sanko University's Adult Bone Marrow Transplantation Unit, where he gained extensive expertise in the management of hematologic malignancies and stem cell transplantation. For the past year, he has been serving as a Hematology Specialist at Ali Osman Sönmez

Oncology Hospital in Bursa, Türkiye, where he continues to provide comprehensive care for patients with hematologic disorders.

His clinical and academic interests include hematologic malignancies, bone marrow transplantation, and blood-related complications of targeted therapies. He has contributed to several national and international congresses and continues to pursue research projects in the field of hematology.

Ahmet Koç

Dr. Ahmet Koç was born in 1965 in Çivril, Denizli. He completed his primary, secondary, and high school education in Çivril. He began his education at Istanbul University's Cerrahpaşa Faculty of Medicine in 1981 and graduated in 1987. After working for six months at the Posof/Yeniköy community clinic in Kars, between September 1987 and April 1988 for his first compulsory state service, he began his specialist training at the Department of Pediatrics at Fırat University's Faculty of Medicine in April 1988. He completed his specialist training on May 27, 1992, and began his compulsory state service at the state hospital in Arapgir, Malatya. He completed his compulsory service in July 1994. He completed his military service at Sarıkamış Military Hospital. He worked at the Department of Pediatrics at Harran University's Faculty of Medicine from 1994 to 1997.

In May 1997, he began his subspecialty training in pediatric hematology at the Department of Pediatric Hematology at Hacettepe University Faculty of Medicine and completed his specialty training on June 15, 1999. In June 1999, he began working at the Department of Pediatrics at Harran University Faculty of Medicine and founded the Department of Pediatric Hematology. He became an associate professor in November 1999. In 2005, he was appointed professor at the same university.

At Harran University Faculty of Medicine, he served as Head of the Department of Pediatrics, Head of the Department of Pediatric Hematology, a member of the Faculty Board of Directors, a member of the Postgraduate Education Coordination Board, and Chair of the Education and Training Coordination Board. He served as Vice Dean of Harran University Faculty of Medicine between 2000 and 2007, and as Dean of the faculty between 2007 and 2011.

On April 20, 2012, he began working as a professor in the Department of Pediatric Hematology and Oncology at Marmara University Faculty of Medicine. Between January 15, 2019 and July 15, 2019, he received training in Pediatric Stem Cell Transplantation at the Pediatric Bone Marrow Transplantation Unit at Bahçeşehir University Medical Park Göztepe Hospital. Dr. Ahmet Koç currently serves as a faculty member and head of the Department of Pediatric Hematology and Oncology at Marmara University Faculty of Medicine and director of the Pediatric Stem Cell Transplantation Center at Marmara University Training and Research Hospital.

He has published 14 book chapters and one treatment manual. He is currently editing one book in the publication process and serving as a chapter editor in another. Dr. Ahmet Koç has 55 articles published in nationally peer-reviewed journals and 60 articles published in international journals indexed by the Science Citation Index (SCI) and SCI Expanded.

Dr. Ahmet Koç is a full member of the Turkish National Pediatrics Association (TMPD), Turkish Pediatrics Association (TPK), Turkish Medical Association (TTB), Turkish Hematology Association (THD), Turkish Pediatric Hematology Association (TPHD), Marmara Pediatrics Association (MPD), European Hematology Association (EHA), and The European Society for Blood and Marrow Transplantation (EBMT).

Nanişe Gizem Fener

Date of Birth: 07.09.1989
Phone: 0544 245 25 25
E-mail: drgizemfener@gmail.com

Education

Istanbul University, Cerrahpaşa Faculty of Medicine (2007 - 2013)
Istanbul Medipol University, Internal Medicine Residency (2014 - 2019)
Izmir Bozyaka Training and Research Hospital, Hematology Fellowship (2019 - 2023)

Work Experience

Izmir Tepecik Training and Research Hospital - Hematology Specialist (2025 - Present)
Niğde Training and Research Hospital - Hematology Specialist (2023 - 2024)
Kilis State Hospital - Internal Medicine Specialist (2019)
Ordu State Hospital - General Practitioner (2013)

Scientific Publications

Fener NG, Bilgir O. Experience of Glasdegib in Patients with Elderly Acute Myeloid Leukemia. Hematology, Transfusion and Cell Therapy. 2021;43(Suppl 3):S37. DOI: 10.1016/j.htct.2021.10.1021. PMID: 34956817

Poster Presentations

Fener NG. Brentuximab Vedotin Experience in Patients with Peripheral T-cell Lymphoma. 9th Bozyaka Hematology Symposium, Izmir, 2021.
Fener NG, Bilgir O. Experience of Glasdegib in Patients with Elderly Acute Myeloid Leukemia. XII. Eurasian Hematology-Oncology Congress (EHOC 2021), 2021.
Fener NG. Surgical Intervention in Von Willebrand Disease: Five Cases. 22nd International Turkish Hemophilia Congress, Istanbul, 2025.
Fener NG. Management of Bleeding in Adult Patients with Hypofibrinogenemia Using Haemocomplettan P: Two Cases. 22nd International Turkish Hemophilia Congress, Istanbul, 2025.

Certificates and Trainings

Turkish Society of Hematology, Multiple Myeloma Master Class (2024)

Memberships

Full Member, Turkish Society of Hematology (2023 - Present)

Interests and Skills

Clinical Interest: Multiple Myeloma

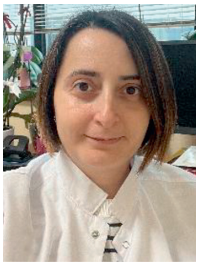
Mehmet Baysal

Dr. Mehmet Baysal is a hematologist and Assistant Professor at Tekirdağ Namık Kemal University, Turkey. He completed his hematology fellowship at Trakya University. His clinical and research interests include thrombotic microangiopathies, myeloproliferative neoplasms, and multiple myeloma. Dr. Baysal has authored numerous publications in peer-reviewed journals and is a recipient of the Young Investigator Award from the 44th National Hematology Congress of Turkey. He is an active member of the Turkish Society of Hematology and the European Hematology Association.

Hale Ören

Hale Ören is a Professor of Pediatrics and has worked since 1997 as a Pediatric Hematologist in the Dokuz Eylül University Faculty of Medicine, İzmir, Türkiye. The main areas of Dr. Ören's research are anemias, childhood leukemias, hemostasis, and thrombosis. She has authored or co-authored more than 150 peer-reviewed papers in various SCI/SCI-extended journals. She has written several book chapters and has given lectures on the diagnosis, clinical and laboratory findings, and management of anemias, childhood leukemias, as well as thrombotic and hemostatic disorders. She is the head of the Department of Pediatric Hematology. She chaired the Turkish Society of Pediatric Hematology and co-chaired the Turkish Society of Hematology. She is a member of the Turkish Journal of Hematology Editorial Board. In 2024, she started working as a Co-Chair of the Scientific and Standardization Subcommittee on Pediatric and Neonatal Thrombosis and Hemostasis.

Ayfer Gedük



I am currently serving as an Associate Professor at the Faculty of Medicine, Kocaeli University. I have been practicing as a hematologist since 2015, with a primary focus on malignant hematologic disorders, particularly multiple myeloma. My professional interests include patient-centered clinical care, multidisciplinary collaboration, and clinical research in hematology.

Fatma Arikan

Internal Medicine Residency, Kocaeli University 2009 – 2014 | Kocaeli
MD, Istanbul University, Cerrahpaşa Faculty of Medicine 2000 – 2006 | Istanbul
Hematology Fellowship, Marmara University 2015 – 2018 | Istanbul

Professional Experience
Anesthesia Reanimation Residency,
Haydarpaşa Numune Training and Research Hospital 2008 – 2009 | Istanbul
MD, Karasu Public Health Care Center 2006 – 2008 | Adapazarı
MD, Internal Medicine, Artvin State Hospital 2014 – 2015 | Artvin
MD, Hematology, Tokat State Hospital 2018 – 2018 | Tokat
MD, Hematology,
Marmara University Pendik Training and Research Hospital 2018 – Present
Certificates
Education Program on Clinical
Research in Hematology
(TİTCK)
Advanced Training Program of the Turkish Hematology Lymphoma Academy
ICH Good Clinical Practice E6
(R2)
Publications
The Diagnositc Value of Abnormal Bone Marrow Signal Changes on Magnetic Resonance Imaging: Is Bone Marrow Biopsy Essential?, Current Medical Imaging Reviews 2024
Splenectomy in Immune Thrombocytopenia: A Retrospective Analysis of 25 year Follow-up Data from a Tertiary Health Clinic, Indian J Hematol Blood Tranfus 2022
Real -life ruxolitinib experinece in intermediate risk myelofibrosis, Blood Research Journal 2021
Hydroxychloroquine-Associated Thrombotic Thrombocytopenic Purpura, Turk J Haematol 2020
Shoulder-Pad Sign in a Case of Amyloidosis Associated with Myeloma, Turk J Haematol 2021
Impactof autologs stem cell transplantation on survival outcomes in patinets with peripheral T cell lymphoma,Transfus Apher Sci 2022
Quality of Life and Smptom Burden with First and Second –generation Tyrosine Kinase Inhibitors in Patients With Chronic -phase Chronic Myeloid Leukemia, Clin Lymphoma Myeloma Leuk. 2020
Effects of Deeper Molecular Responses on Outcomes in Chronic Myeloid Leukemia Patients in Chronic Phase Treated With Imatinib Mesylate, Clin Lymphoma Myeloma Leuk 2017
Clinical Trials
GRN163LMY3001 Trial, Sub-Investigator 2023 – 2025
Augment Trial, Sub-Investigator 2018 – 2019
ICARIA Trial, Sub-Investigator 2017 – 2019
M22-003 Trial, Sub-Investigator 2025 – Present

Hakan Kalyon

Haydarpaşa Numune – Hematoloji
Tıbbıye cad. Üsküdar /İstanbul

Education and Training *(From baccalaureate through postdoctoral/fellowship training)*

Name of Institution and Location	*Degree and Year Conferred*	*Area of Study*
Istanbul University Istanbul Faculty of Medicine	2008	General Medicine

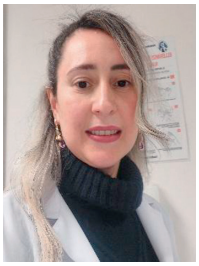
Professional Experience *(Current and Previous Positions)*

Position	*Institution/Employer and Location*	*Dates of Employment*
Specialist	***Koc Unıvercity Hospital, İstanbul***	***From: 2020 To: 2024***
Specialist	VKV Amerikan Hospital, Istanbul	*From:* 2015 *To:* 2020
Specialist	Duragan State Hospital, Sınop	*From:* 2015 *To:* 2014
Specialist	Cerrahpaşa Faculty of Medicine, Istanbul	*From:* 2013 *To:* 2008

Figen Atalay

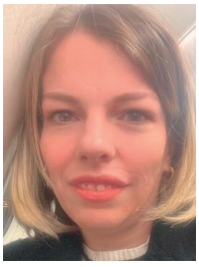
I was born in Diyarbakır in 1974. After graduating from Istanbul University Cerrahpasa Faculty of Medicine in 1997, I completed my internal medicine residency training at Haydarpasa Numune Hospital's Internal Medicine Clinic. In 2007, I became a hematologist at the Marmara University Medical Faculty Department of Hematology. I worked as a hematologist at Erzurum Training and Research Hospital between 2007 and 2009. In 2009, I began working as a faculty member at Başkent University Faculty of Medicine, Istanbul Hospital. Since 2023, I have been working in the hematology department at Yeditepe University Faculty of Medicine. While multiple myeloma is a particular area of interest, I specialize in all hematological diseases, both malignant and benign. I am married and have two sons.

Gülsüm Akgün Çağliyan



Year	University	Faculty
2005	Ege University	Medical Faculty
2006-2011	Pamukkale University	Internal Medicine
2011-2011	Dinar State Hospital	Internal Medicine
2011-2015	Izmir Research and Educational Hospital	Department of Hematology
2015-2017	Denizli State Hospital	Department of Hematology
2017 up to now	Pamukkale University	Internal Medicene and Hematology

Damla Ortaboz



Name Surname	DAMLA ORTABOZ
Akademic Title/Position	Medical doctor
Place of Duty	Sultan 2.Abdulhamid Han Training and Research Hospital
Telephone Number	0 530 464 44 64
E-posta	waterdrop1507@gmail.com

A. Education Background

Yıl	Bölüm	Kurum	Derece
2006-2012	Faculty of medicine	Maltepe University	Pratician
2012-2018	Internal medicine	Ümraniye Training and Research Hospital	Internal medicine specialist
2021-2024	Hematology	İstanbul University-Cerrahpasa	Hematology Fellow Assistant
2024-	Hematology	Sultan II. Abdulhamid Han Training and Research Hospital	Hematology Specialist

B. Professional Experience

Tarih Aralığı	Kurum	Görev
2018-2020	Arnavutköy State Hospital	Internal medicine specialist
2021-2024	İstanbul University-Cerrahpasa	Hematology Fellow Assistant
2024-halen	Hematology	Sultan II. Abdulhamid Han Training and Research Hospital

General Information About Clinical Trials

Training/Certification in Good Clinical Practice (GCP) and Clinical Research:

Name of Training/Certification and Training Institution	Date
Minimum Criteria for ICH E6 GCP Investigator Site Personnel Training version #2.1 on Transcelerate Biofarma Inc.	29.04.2021

Details of Clinical Research

Klinik araştırma	Date	Görev
MO40598_POLARGO	November 2022	Subinvestigator
GenMab_GCT3013-05_Site	November 2022	Subinvestigator
NEOD001-301-AFFİRM AL	November 2022	Subinvestigator

Mahmut Bakir Koyuncu

Mahmut Bakır Koyuncu, MD, Assoc. Prof., completed his medical degree at Hacettepe University Faculty of Medicine (English Program) between 2005 and 2011. He subsequently pursued residency training in Internal Medicine at Mersin University from 2012 to 2016, followed by subspecialty fellowship training in Hematology at Mersin University between 2018 and 2021. In 2020, he broadened his clinical and research experience with a visiting fellowship at Weill Cornell Medicine, Bone Marrow Transplantation and Cellular Therapy Unit in New York, USA.

Following his fellowship, Dr. Koyuncu worked as a hematology specialist at Mersin City Hospital in 2021 and at Adana City Hospital between 2021 and 2022, where he was later appointed Associate Professor of Hematology. From 2023 to 2025, he continued his academic and clinical practice at VM Medical Park Mersin Hospital. In 2025, he joined Mersin University Faculty of Medicine, Department of Hematology, as an Associate Professor, where he currently continues his academic and clinical career.

His main research interests include acute and chronic graft-versus-host disease (GvHD), myeloproliferative neoplasms, targeted therapies, and novel cellular approaches such as CAR-T cells, bispecific antibodies, and exosome-based strategies.

Prof. Dr. Gamze Tanriover

Professor Dr. Gamze Tanriover got her graduate degree in Hacettepe University in 1998. Dr. Tanriover completed her Master of Science degree at Akdeniz University Department of Histology and Embryology in 2003. She worked for 5 months in the "Brainstem Genetics" project in the Department of Physiology, Faculty of Medicine, Oslo University, with the scholarship of the Republic of Turkey, Ministry of Education. She worked at Yale University Department of Neurosurgery Neurovascular Genetic Laboratory between 2006-2008. She completed her PhD thesis titled "The role of PDCD10 (CCM3) gene in the formation of cerebral cavernous malformation" under the co-consultancy Prof. Dr. Murat Gunel's lab at Yale University. Prof. Dr. Gamze Tanriover has more than 70 international publications, book chapter in "Molecular Neurology", and 11 scientific awards given by various associations and institutions. She is working at Akdeniz University, School of Medicine Department of Histology and Embryology since 2000. She is also the members of Turkish Society of Histology and Embryology (THED), Brain Research Society and European Association of Cancer Research (EACR). Dr. Tanriover's research areas glioblastoma, breast and soluble cancers and metastasis.

Burcu Altindağ Avci

Name: Burcu Altındağ Avcı MD.
Date of Birth: 22.08.1984
Birthplace: Hayrabolu
Profesion: Internal Medicine and Hematology
Academic Title: Specialist Dr.
Mobile Phone: 05302073001
Business Address: Tekirdağ İsmail Fehmi Cumalıoğlu City Hospital
Email: dr.avciburcu@gmail.com
Foreign Languages (Score and Year): English (73 points/2008)
Certificates Received: Superior service certificate issued by Tekirdağ Hayrabolu District Governorate for successful services twice in 2017 and 2018.

Degree	Departmant	University	Year
Licence	Medicine	İst. Ünv. Cerrahpaşa Med. Fac.	2002
Doktorate	Internal Medicine	Tekirdağ Nku Med. Fac.	2011
Subspecialty	Hematology	Tekirdağ Nku Med. Fac.	2019

Doctoral Thesis Title and Advisor(s): Leukocyte platelet aggregates' contribution to the development of thrombosis in patients with advanced stage cancer
Advisors: Prof. Dr. Burhan Turgut
Assoc. Prof. Dr. Tarkan Yetişyiğit
Duties Performed in Projects:
"Assistant researcher" in Tübitak "1002-Rapid Support Program" project number 738181
Administrative Duties: Chief Physician/Hayrabolu State Hospital 2017-2019

Memberships in Scientific Organizations: Turkish Hematology Association

List of Publications

A1.Myxoma Virus Combination Therapy Enhances Lenalidomide and Bortezomib Treatments for Multiple Myeloma
Alpay Yeşilaltay, Dilek Muz, Berna Erdal, Türker Bilgen, Bahadır Batar, Burhan Turgut, Birol Topçu, Bahar Yılmaz, **Burcu Altındağ Avcı.** Pathogens 2024 Jan 12;13(1):72. doi: 10.3390/pathogens13010072.

A2. Patients with severe coronavirus disease 2019 have high frequency of factor 5 Leiden and prothrombin gene mutations
Burcu Altindağ Avci[1], Mustafa Doğan, Bahadir Batar, İlker Yildirim, Elif Serdal, Sümbül Gezer, Çağatay L Onar, Seval Akpinar, Burhan Turgut. Blood Coagul Fibrinolysis 2023 Jan 1;34(1):14-19. doi: 10.1097/MBC.0000000000001167. Epub 2022 Sep 13.

A3. The role of oxidants and reactive nitrogen species in irritable bowel syndrome: A potential etiological explanation
Rafet Mete,[1,A,B,E,F] Feti Tulubas,[2,B,E,F] Mustafa Oran,[3,A,B,E,F] Ahsen Yilmaz,[2,B,E,F] **Burcu Altindag Avci,**[3,B,F] Kemal Yildiz,[4,E,F] Cuneyt B. Turan,[5,B,F] and Ahmet Gurel. Med Sci Monit 2013 Sep 13:19:762-6. doi: 10.12659/MSM.889068.

A4. The Diagnostic Utility of Flow Cytometry in Celiac Disease Presented Isolated Iron Deficiency Anemia
Rafet Mete,[1] Mustafa Oran,[2] **Burcu Altındağ Avcı,**[2] and Burhan Turgut[3.] Turk J Gastroenterol 2021 Nov;32(11):932-936. doi: 10.5152/tjg.2020.191016.

A5. Hypofibrinolysis is associated with the severity of Covid-19 infection: The role of obesity
Oran, M.; Akpinar, S.; Doğan, M.; **Avci, B.** A.; Çelikkol, A.; Turgut, B.. Acta Medica Mediterranea; 37(4):2377-2382, 2021.

B. Book Chapters

B.1. Thrombocytopenia Management in Oncology Patients (Burcu Altındağ Avcı) Oncological Emergencies, Academician Publishing House, 2021

B.2. Leukemia Management in Pregnancy (Burcu Altındağ Avcı) Pregnancy and Oncology, Academician Publishing House, 2021

B.3. Peripheral T Cell Lymphoma (Burcu Altındağ Avcı, Burhan Turgut) T Cell Lymphomas, Türkiye Clinics, 2021

C. Papers Presented at National Scientific Meetings

C.1. Experiences of Patients Treated with a Diagnosis of Marginal Zone Lymphoma in the Last 10 Years
(3rd Hematology Education and Research Congress / Virtual Congress 16-19 September 2021)

C.2. Blastic Plasmocytoid Dendritic Cell Neoplasm, Case Report
(47th National Hematology Congress 4-7 November 2021, Antalya)

C.3. Use of Bevacizumab in Control of Bleeding Due to Hereditary Hemorrhagic Telangiectasia; Single Center Experience
(49th National Hematology Congress 1-5 November, Antalya)

C.4. Management of Chronic Myeloid Leukemia During Pregnancy; Two Case Reports
2nd HEAD Congress Virtual

C.5. Experiences of Patients Treated with a Diagnosis of Marginal Zone Lymphoma
3rd HEAD Congress Virtual

C.6. Acute myeloid leukemia during pregnancy; Case Report
4th HEAD Congress Virtual

C.7. Development of Hemophagocytic Syndrome in Langerhans Cell Histiocytosis; Case Report X. Tekirdağ Hematology Symposium 14-15 May, Tekirdağ

Sultan Okur Acar

MD, Division of Pediatric Hematology, Dept of Pediatrics, Dokuz Eylul University, İzmir.
Birth date and place: Tunceli, 21/01/1986
e-mail: sultanokur@gmail.com

Education

2010 – MD, Adnan Menderes University, Faculty of Medicine
2015 – Residency in Pediatrics, Dr. Behçet Uz Children's Hospital, İzmir
2020 – Fellowship in Pediatric Hematology & Oncology, Dr. Behçet Uz Children's Hospital, İzmir

Special interests

Bleeding disorders,
Thrombosis,
Transfusion strategies,
Leukemia

Positions and Employment

2010–2011 – General Practitioner, Susurluk State Hospital
2011–2015 – Resident in Pediatrics, Dr. Behçet Uz Children's Hospital
2015–2016 – Pediatric Specialist, Torbalı State Hospital
2016–2020 – Fellow in Pediatric Hematology & Oncology, Dr. Behçet Uz Children's Hospital
2020–2021 – Pediatric Hematology & Oncology Specialist, Başakşehir Çam and Sakura City Hospital
2021–2025 – Pediatric Hematology & Oncology Specialist, Manisa City Hospital
2025–Present – Pediatric Hematology & Oncology Specialist, Dokuz Eylül University

Some Publications in Journal of Sci and Sci-E

1. Assessment of clinical characteristics and treatment outcomes of pediatric patients with intracardiac thrombosis: a single-center experience
Işik Odaman Al, Yeşim Oymak, Melek Erdem, Neryal Tahta, Sultan Okur Acar, Timur Mese, Murat Muhtar Yilmazer, Salih Gözmen, Cuneyt Zihni, Sebnem Calkavur, Tuba Hilkay Karapinar
Blood Coagulation & Fibrinolysis 33 (1), 34-41

2. Evaluation of renal effects of liposomal amphotericin B in children with malignancies with KDIGO and RIFLE criteria
Fatma Devrim, İlknur Çağlar, Sultan Okur Acar, Şeyma Akkuş, Nida Dinçel, Ebru Yılmaz, Neryal Tahta, Bengü Demirağ, Tuba Hilkay Karapınar, Salih Gözmen, Yeşim Oymak, Canan Vergin, Nuri Bayram, İlker Devrim
Néphrologie & Thérapeutique 17 (7), 507-511

3. Evaluation of liver iron content by magnetic resonance imaging in children with acute lymphoblastic leukemia after cessation of treatment
Sezer Acar, Salih Gözmen, Selen Bayraktaroğlu, Sultan O Acar, Neryal Tahta, Yeşim Aydınok, Raziye C Vergin
Turkish Journal of Hematology 37 (4), 263
4. Sirolimus is effective and safe in childhood relapsed–refractory autoimmune cytopenias: A multicentre study
Sultan Okur Acar, Neryal Tahta, Işık Odaman Al, Melek Erdem, Salih Gözmen, Tuba Hilkay Karapınar, Burcu Kılınç, Tiraje Celkan, Serap Kirkiz, Ülker Koçak, Hale Ören, Ayşen Türedi Yıldırım, Esra Arslantaş, Aylin Canbolat Ayhan, Yeşim Oymak
Scandinavian Journal of Immunology 100 (2), e13376
5. Granulocyte transfusions in life-threatening infections of children with hemato-oncological diseases
E Arslantaş, K Şanlı, SO Acar, SA Tekgündüz, A Ayçiçek
Transfusion and Apheresis Science 63 (3), 103897
6. The role of FDG-PET/CT in detecting bone marrow involvement in childhood solid tumors
Esra Arslantaş, Ali Ayçiçek, Burcu Esen Akkas, Tuba Nur Tahtakesen Güçer, Sultan Okur Acar, Ayse Özkan Karagenc, Sibel Akpınar Tekgündüz, Cengiz Bayram
Nuklearmedizin-NuclearMedicine 63 (03), 207-212
7. Efficacy of Teicoplanin Lock Therapy in the Treatment of Port-related Coagulase-negative Staphylococci Bacteremia in Pediatric Oncology Patients
Sultan Okur Acar, Neryal Tahta, Elif Böncüoğlu, Işik Odaman Al, Elif Kiymet, Salih Gözmen, Bengü Demirağ, Tuba H Karapinar, Yeşim Oymak, Canan Vergin, İlker Devrim
Journal of Pediatric Hematology/Oncology 45 (1), e17-e20
8. Comparing Iron Prophylaxis Strategies in Infants: Is Sucrosomial Iron a Better Alternative?
SO Acar, N Tahta
Journal of Pediatric Hematology/Oncology, 10.1097
10. Patient Blood Management in Pediatric Patients: Current Strategies and Future Perspectives
SO Acar, ÖT Gürocak
Turkish journal of haematology: 2025

Demet Çekdemir

Personal Information
• Date of Birth: 03.07.1977
• Birth Place: Samsun, Turkey
Education
• Medical Faculty: Ege University, School of Medicine, Izmir, Turkey (1994-2000)
• Residency : Ege University, School of Medicine, Histology- Embriology, Izmir, Turkey (2001-2002)
• Residency : Celal Bayar University, School of Medicine, Internal Medicine,
Manisa, Turkey (2002-2007)
• Fellowship Programme in Turkey : Ege University, School of Medicine,
Department of Hematology, Izmir, Turkey (2007-2012)
• Queen Mary University, London in the Barts Cancer Institute Centre for
Haemato - Oncology, London, UK (2010-2011)
Work Experience
Assoc. Prof. Demet CEKDEMİR, M.D
Tel: +9 (0) 542 484 87 47
E mail: demetcekdemir@yahoo.com.tr
• Ege University, School of Medicine, Department of Hematology, Izmir, Turkey
(2007-2012)
• Queen Mary University, London in the Barts Cancer Institute Centre for
Haemato - Oncology, London, UK (2010-2011)
• Sakarya University, School of Medicine, Department of Hematology, Sakarya,
Turkey (2012-2014)
• Anadolu Medical Center, In Affiliation Johns Hopkins Medicine,
Bone Marrow Transplantation Unite, Kocaeli, Turkey (2014-2019)
(150 Autologus, 100 Allogeneic hematopoietic cell transplantation, per year)
• Saglik Bilimleri University Tepecik Education and Training
Hospital, Hematology Department, Izmir, Turkey (2019-2022)
• Saglik Bilimleri University Izmir Bozyaka Education and Training
Hospital, Hematology Department, Bone Marrow Transplantation
Unite Director, Izmir, Turkey (March 2022-September 2023)
• Izmir City Hospital (September 2023-July 2024)
• Acibadem Atasehir Hospital (July 2024-)
Professional/Academic Affiliations
• Turkish Society of Hematology
• Hematology Specialist Association
• European Hematology Association
• Turkish Society of Apheresis
• Turkish Medical Association
• Turkish Internal Medicine Specialist Association
• Leukemia Lymphoma Myeloma Patients and Research Society Association
• Clinical Research Association
• International Society of Hematology
Grants:
HAUD (Hematology fellow international training grant)
Awards:
1. Young Participant Award, Determination of Factor V Leiden and Prothrombin
Gene Mutation Status in Chronic Myeloproliferative Disease Patients and Its
Relationship with Thrombosis: Preliminary Results, 35th National Congress, 2009.
2. Clinical Hematology Award, Turkish Society of Hematology Awards, Use of
Eltrombopag in Immune Thrombocytopenia; Experience of Eleven Centers, 39th
National Hematology Congress, 2013.
3. Young Participants Award, 8th National Apheresis Congress, Cyprus, 2013.

4. Clinical Hematology Award, Turkish Society of Hematology Awards, Usage of
Eltrombopag in Immune Thrombocytopenia; Experience of Eleven Centers, 39th
National Hematology Congress, 2013.
5. TURKBA Award, Frequency of MPL W515l / K and JAK2 Exon 12 Mutations in
Non-CML Myeloproliferative Neoplasms and Its Relationship with Clinical Findings:
Preliminary Findings of a Multicenter Study. 40th National Hematology Congress,
2014.
6. TURKBA Award, Eltrombopag Use in Immune Thrombocytopenia in Turkey, 41st
National Hematology Congress, 2015.
7. Special Jury Prize, Plerixafor Efficiency Single Center Experience, in Patients with
Autologous Hematopoietic Stem Cell Transplantation, 10th Apheresis Congress, 2015
8. The Hope Hopelessness and Depression Levels of Patients with Hematopoietic
Stem Cell Transplantation and Researches on Factors Affecting Scientific Researches in Clinical Trials, Anadolu Medical Center Hospital, Nursing Week, 2017

Mehmet Gunduz

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E-mail: drmgunduz02@gmail.com
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Phone: 444 9 911
Mobil phone: +90 505 2668901

Education and Training Activities
M.D., Selcuk University Medical School, Konya, (graduation date, 2002)
Professional Experience
- **Attending Physician**, Ankara City Hospital, Ankara, Turkey, 2019-2020
- **Fellowship**, Ankara University Faculty of Medicine, Ankara, Turkey, 2013-2016
- **Residency**, Sutcu Imam University Faculty of Medicine, Kahramanmaras, (Internal Medicine Specialist 2004-2009)
- **General practitioner**,
  - Ovacık Medical Center, Tunceli, (2002-2003),
  - Kalecik Medical Center, Ankara, (2003-2004),
  - City Hospital, Yozgat, (2010-2012),
  - Ankara Atatürk Treaning &Research Hospital, Ankara, (2016-2019),
  - Ankara City Hospital (2019-2020)
  - Bıruni Medicine Faculty Hospital (2020-2023)
  - Ankara Güven Hastanesi (2023-2025)
  - Ankara Lokman Hekim Medicine Hospital (2025-. . ...)

Languages
- English

Certification & Courses
Good clinical practice certification, (2014)
Laboratory GMP Certificate, 2014
Fungamental course (ınvaziv fungal infections), 2015
Bone Marrow Transplantation certification, 2021
Honors and Awards
40. National Hematology Association Young Researcher Award, 22-25 October 2014, Antalya
9th National Apheresis Congress, Apheresis Encouragement Award, 04-07 September 2014, Kıbrıs
Memberships and Associations
Türkish Society of Hematology, 2013
American Society of Hematology, 2015
Skills and Interests
Stem cell transplantation
Acute leukemias
International Clinical Studies
1. A Phase 3, Randomized, Open Label Study Investigating the Efficacy of the BiTEAntibody Blinatumomab Versus Standard of Care Chemotherapy in Adult Subjects WithRelapsed/Refractory B-precursor Acute Lymphoblastic Leukemia (ALL) (TOWER Study) Prof. Dr. Önder Arslan yürütücülüğünde,
2. CD-ON-MEDI-551-1088 protokol numaralı ve "Relaps olmuş veya Refrakter Diffüz Büyük B Hücreli Lenfoması olan Yetişkinlerde Faz 2 Randomize Açık Etiketli MEDI-551 Çalışması" Prof. Dr. Önder Arslan yürütücülüğünde
3. "Relaps,indolan veya agresif,Non Hodgkin lenfomalı hastalarda intravenöz PI3K inhibitörü BAY 80-6946'nın açık etiketli,kontrollü olmayan Faz II Çalışması (Bölüm B)" Prof. Dr. Muhit Özcan yürütücülüğünde,
4. A Randomized, Double-Blind, Multicenter Study of Denosumab Compared With Zoledronic Acid (Zometa) in the Treatment of Bone Disease in Subjects with Newly Diagnosed Multiple Myeloma Prof. Dr. Meral Beksaç yürütücülüğünde,
5. "Multipl Miyelom Hastalarında Otolog Kök Hücre Transplantasyonunu Takiben Oral Ixazomib Citrate (MLN9708) idame tedavisinin Uygulandığı Faz 3, Randomize, Plasebo Kontrollü, Çift Kör Çalışma" Prof. Dr. Meral Beksaç yürütücülüğünde
6. CLARION ÇALIŞMASI:A Randomized, Open-label Phase 3 Study of Carfilzomib, Melphalan, and Prednisone versus Bortezomib, Melphalan, and Prednisone in Transplant-ineligible Patients with Newly Diagnosed Multiple Myeloma Prof. Dr. Meral Beksaç yürütücülüğünde
7. "Birinci veya İkinci Relapstaki Multiple Hastaların Bortezomib (VELCADE®) ile Tekrar Tedavi Optimizasyonunu ve Uzatılmış Tedaviyi Değerlendiren Randomize, Kontrollü, Faz 3 Klinik Çalışma" Prof. Dr. Meral Beksaç yürütücülüğünde
8. Nükseden ya da Dirençli Multipl Miyelomda Elotuzumab ile Birlikte ya da Elotuzumab Olmadan Lenalidomid/ Deksametazonun Uygulandığı Faz 3, Randomize, Açık Etiketli Çalışma Prof. Dr. Meral Beksaç yürütücülüğünde
9. "A randimized Multicenter open label phase 3 study of the brton's Tyrosine kinase inhibitor ibrutinib in combination with obinutuzumab versus chlorambucil in combination with obinutuzumab in subjects with treatment naive chronic lymphocytic leukemia or small lymphoma" Prof. Dr. Önder Arslan yürütücülüğünde

In Turkey and in the World the First One Projects

1. Mesenchymal stem cell application in Haploidentical allogeneic stem cell transplantation (supported by Tübitak 1003), co-investigator

Şebnem İzmir Güner

2. Birth Day: 02/04/1970
3. Title: Prof.Dr. M.D

Institution she is working at : Memorial Şişli Hospital

Degree	Area	Unıversity	Year
Licence	Medical Faculty	İstanbul Üni. Medical Faculty	1993
High Licence	Internal Medicine	İstanbul Üni. Cerrahpaşa Medical Faculty	2000
Doctora	Hematology	İstanbul Üni. Cerrahpaşa Medical Faculty	2008

Academic Titles
Assistant Professor Date: 2014
Associate Professorship Date: 06/03/2018
Professor Date: 05/09/2023
Managed Master's and Doctoral Theses: Comparison of the effects of ursodeoxycholic acid pravastin and gene fibrosis treatment of non-alcoholic steatohepatitis - 2003-Istanbul-Turkey
The effects of pre- and post-treatment laboratory values and chemotherapy and radiation therapy on cardiopulmonary functions in patients with Hodgkin lymphoma 2009 - Istanbul-Turkey
Book section:
- Current Issues in Hemato-Oncology, An Overview of a Complicated System: The Coagulation System, (Şebnem İzmir Güner, Chapter 2019: 173-179)
- Current studies on general internal medicine - Paroxysmal nocturnal Hemoglobinuria
(Şebnem İzmir Güner, Chapter 2019: 191-199)
Other Publications:
- Diagnosis and Treatments in Multiple Myeloma ISTANBUL MYELOM GROUP information booklet was published (31 January 2013)
- Stem Cell Transplantation Protocols (T.R. İstanbul University Cerrahpaşa Faculty of Medicine, Department of Internal Medicine, Department of Hematology, Stem Cell Transplantation Unit, 2005)
Project:
1) In the Hematology Specialist Association; Treatment Strategies and Treatment Course in Patients with Covid-19 Positive Hematological Malignancies

2) In the Turkish Society of Hematology; Comparison of Cell Collection Efficiency of CD34+ Cells Collected from Donor or Patient for Hematopoietic Stem Cell Transplantation by Apheresis Method in Different Apheresis Devices Specialized for Collection Process

Utku Aygüneş

Place and Date of Birth: Niğde, 1984
Address: Gürselpaşa Mah. 75364 Sk. Çiçekkent Sitesi C2 Block, Apt 6, Seyhan / Adana
Phone (Mobile): 05062225522
E-Mail: utkuayg@gmail.com

Education: University

Degree	Department/ Program	University	Year
Bachelor's Degree	Medicine	Istanbul University	2002–2008
Medical Specialization	Pediatrics	Cumhuriyet University	2009–2013
Subspecialty Training	Pediatric Hematology-Oncology	Uludağ University	2014–2017
Associate Professorship	Pediatric Hematology-Oncology	Adana City Training and Research Hospital	2025

Title of Medical Specialization Thesis and Supervisor(s):
Thesis Title: Evaluation of Etiological Factors in Childhood Poisonings (2013)
Thesis Supervisor: (Ali Kaya)
Title of Subspecialty Thesis and Supervisor(s): (Not conducted since subspecialty thesis requirement was abolished)
Foreign Language: English
Foreign Language Score-Level: 96.25 (YÖKDİL 2018)
Positions:

Position Title	Institution	Year
Physician	Niğde Bağlama Health Center	2008–2009
Research Assistant	Cumhuriyet University, Department of Pediatrics	2009–2013
Specialist Physician	Sivas Numune Hospital	2013–2014
Research Assistant	Uludağ University Faculty of Medicine	2014–2017
Assistant Professor	Cumhuriyet University Faculty of Medicine, Training and Research Hospital	2017–2019
Specialist Physician	University of Health Sciences, Konya Training and Research Hospital	2019–2020
Specialist Physician	Acıbadem Adana Private Hospital	2020–2024
Associate Professor	Adana City Training and Research Hospital	2024–Present

Meryem Şener

Date of Birth: 10 December 1990
Place of Birth: Adana, Turkey
Nationality: Turkish
Education
Fellowship in Hematology – Çukurova University Faculty of Medicine, Adana, Turkey
Graduated: 10 July 2024
Residency in Internal Medicine – Çukurova University Faculty of Medicine, Adana, Turkey
Graduated: 28 February 2020
Doctor of Medicine (MD) – Çukurova University Faculty of Medicine, Adana, Turkey
Graduated: 30 June 2015
Professional Experience
Hematology Specialist – Düzce Atatürk State Hospital, Hematology Department
23 September 2024 – Present
Internal Medicine Specialist – Mardin Derik State Hospital
01 June 2020 – 02 July 2021
Compulsory Service (General Practitioner) – Adana Training and Research Hospital
16 September 2015 – 25 February 2016
Specialization
Internal Medicine (2016–2020)
Hematology (2020–2024)
Languages
Turkish (Native)
English (Intermediate – improving actively)

Mustafa Köroğlu

Born in Eskişehir, 1981.
Education and Training
Licence: Eskisehir Osmangazi University, School of Medicine, 2005
Internal Medicine Specialist: Fatih University School of Medicine, 2010
Hematology Fellow: Inonu University Schhol of Medicine, 2013

Public Service
Bitlis Hizan Integrated Public Hospital, Internist, 2010
Karabuk Training and Research Hospital, Hematologist, 2013 – 2015
Academic Experience
Karabuk University, School of Medicine, Assistant Professor 2015 - 2017
Afyon Kocatepe University, School of Medicine, Assistant Professor 2017
Afyonkarahisar Science of Health University, School of Medicine, Associated Professor 2018-2019
Afyonkarahisar Science of Health University, School of Medicine, Vice Dean, Head of Department (Internal Medicine Dpt. and Hematology Subdivision), 2018 – 2019
Atlas University, School of Medicine, Associated Professor, 2019 - 2020
Halic University, School of Medicine, Associated Professor, 2021 - 2022
Istinye University, School of Medicine, Associated Professor, 2022 – 2023
Istinye University, School of Medicine, Professor 2023 - . . .
Professional Experience
Sisli Kolan Hospital, Vice director of Hematology, 2019 – 2020
Hisar Intercontinental Hospital, Vice director and Director of Hematology and Bone Marrow Transplantation Unit, 2020 – 2022
Hisar Intercontinental Hospital, Vice director and Director of Hematology and Bone Marrow Transplantation Unit, 2020 – 2022
Istinye University, School of Medicine, Research and Training Hospital, Medical Park Gaziosmanpasa – Istanbul, Vice director and Director of Hematology and Bone Marrow Transplantation Unit 2022 - . . .
Sertificates
Bone Marrow Transplantation Experience Sertificate
Project
The effect of the pneumatic tube system on complete blood count parameters in patients with borderline hematological parameters, Scientific research project supported by Higher Education Institutions, Researcher, 01/03/2012 - 01/04/2014
Academic Activation
More than 50 publications in national and international refereed journals and more than 100 poster and oral congress presentations.

Mehmet Celik

Academic Title: Specialist
Birth Date : 19.11.1980- Iskenderun / Turkey
Knowledge of foreign Languages: English
Duty Station: Manisa City Hospital /Hematology Department
Manisa/ Turkey
E-mail adress: dr_mcelik@hotmail.com
Telefon: +90 05056362899

A. Educational Information
University/faculty graduated from : Eskisehir Osmangazi University, / Faculty of Medicine, **1998- 2005, 2005 Graduation, Medicine Doctor**
Cukurova University/Faculty of Medicine/Department of Internal Medical Sciences/Department of Internal Medicine)- **Internal Medicine Research Assistant .12.2006-25.08.2011- / 25.08.2011 İnternal Medicine Specialist**
Antalya Training and Research Hospital/Department of Hematology, **Hematology Fellowship 05.12.2017-23.12.2020**
Republic of Turkey Ministry of Health Manisa City Hospital, Department of Hematology, **2025- still working /**

Seval Akpinar,

is Associate Professor of Internal Medicine and Hematology. She has graduated from Istanbul University, Cerrahpasa Faculty of Medicine in 2001. Dr. AKPINAR became specialist in internal medicine and hematology at Trakya Universitiy Medical Faculty in 2009 and 2013, respectively. She served as hematologist during 2013-2017 period at Sisli Hamidiye Etfal Education and Research Hospital. Dr. AKPINAR worked as visiting physicians for 15 months at Dr. Abdurrahman Yurtarslan Ankara Oncology Hospital BMT Center. She is the director of BMT Center of Tekirdag Namık Kemal University since 2019. Dr. AKPINAR became Associate Professor of Hematology in 2023 and received PhD degree in tumour biology and immunology at Tekirdag Namık Kemal University in 2024.

İbrahİm Eker

Date of birth:17 September 1977
Nationality: Turkish
Civil status: Married, a daughter born in 2003 and a son born in 2015.

Education:

Institution [from-to]	Degree(s) or Diploma (s) obtained:
Gülhane Military Medicine Academy, Faculty of Medicine, Transfusion Medicine and Blood Banking(10/2016 - Ongoing)	(Ongoing) Master's Degree in Transfusion Medicine and Blood Banking
European Group For Blood And Marrow Transplantation 21-22 March 2015	Statistical Courses
Turkish Society Of Hematology And European Group For Blood And Marrow Transplantation, Granted On: 07/03/2014	4 th EBMT Data Management Program
EHA Master Class Education Program, Stockholm, Sweden (09/2012-06/2013)-European Board of Accreditation in Hematology	Online Master Class to to contribute to the harmonization and quality enhancement of hematology training across Europe
Gülhane Military Medicine Academy, Faculty of Medicine, PaediatricHematology,Turkey (10/2010-10/2013)	Fellow in Pediatric Hematology
Gülhane Military Medicine Academy, Faculty of Medicine, Paediatrics, Turkey (10/2004-10/2008)	Resident in Paediatrics
Gülhane Military Medicine Academy, Faculty of Medicine (10/1995–07/2001)	MedicalSciences, M.D

Language skills:

Language	Reading	Speaking	Writing
Turkish		Mother Tongue	
English	1	2	2

Membership of professional bodies: Turkish Society of Haematology, Turkish Society of Pediatric Hematology, European Society for Blood and Marrow Transplantation, Asian Association of Transfusion Medicine
Other skills: Full computer literacy (MS OfficeProgram)
Present position:

- Assoc. Prof. Head of Pediatric HSCT center Afyonkarahisar Health Science University, Turkey (03/2021-ongoing)
- Asst. Professor at Department of Paediatrics, Afyonkarahisar Health Science University, Turkey (10/2016-ongoing)
- Head of PediatricHematology Department, Afyonkarahisar Health Science University,Faculty of Medicine, (10/2017-ongoing)
- Deputy chief physicianAfyonkarahisar Health Science University Hospital (02/2018-ongoing)
- Director of Blood Banking and Apheresis Unit, Afyonkarahisar Health Science University Hospital (06/2019-ongoing)
- Director of Hemovigilance and blood safety (06/2019-ongoing)

Years within the firm: 8 years
Key qualifications:

- Pediatric Hematopoietic Stem Cell Transplantation - Pediatric Leukemias - Pediatric Oncology - Hemostasis and Thrombosis – Pediatric Hematology - Blood Banking and Transfusion Medicine - Hemovigilance and Blood Safety

Damage control hematology - Statistics and data management - Cryopreservation of blood products-Hemorheology

Specific experience in the region:

Country	Datefrom–Dateto
Turkey	2004–ongoing
Northern Cyprus	2001-2004

1. Other relevant information
Publications/Conference Papers
•39 international publication, 27 in SCI-expended indexed journal, 12 in Academic Resource Index.
•20 national publications indexed in TR-INDEX
•82 international conference papers, 6 of which won award
• 150 national conference papers, 13 of which won award
•24 chapters in written national and international books about pediatric hematology and transfusion medicine and bone marrow transplantation
Citations: 228
h-index: 12
i10 index: 13
International Awards
Oral Presentation 2th place award, XIII. National / I. International Blood Banking and Transfusion Congress, 2020
Oral Presentation 3rd place award, XII. Congress of International Asian Association of Transfusion Medicine, 2016

Poster Presentation 1st Place Award, XII. Congress of International Asian Association of Transfusion Medicine, 2016
Travel Award Winner, XXXV World Congress International Society of Hematology, 2014
Prof. Atilla YALÇIN Award, IV. International Eurasian Hematology Congress, 2013
Certificate of Award, 43rd International Symposium on Endocrinology and Metabolism, 2011

Birgül Öneç

Department of Hematology, Duzce University Faculty of Medicine, Duzce, Turkey
Birgül Öneç MD, has graduated from Ankara University Faculty of Medicine in 2002 and completed her internal medicine residency training at Ankara Numune Education and Research Hospital (2002-2009). She completed her hematology residency program at Dıskapı Yıldırım Beyazıt Education and Research Hospital in 2013. Dr. Öneç worked as Hematology Assistant Professor and Associate Professor at Department of Hematology, Duzce University Faculty of Medicine (2014-2023) and is still working at the same department as Proffesor since January 2024.

Aysu Timuroglu

Date of birth: 16.07.1983
Address: Erzurum City Hospital
Telephone: 90 552 599 2824
e mail: aysuozbicer@hotmail.com
Research interests: Hematology
Education: Gazi Universty Faculty of Medicine (2001-2007)

Work Experience:
Ataturk University Faculty of Medicine Internal Medicine: Research Assistant (2007-2012)
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1. From the Edited Volume: Graft-versus-Host Disease - Natural History and Prevention Levels [Working Title] Dr. Nicolás Padilla-Raygoza and M.D. Eunice Sandoval Ramírez "Application of Mesenchymal Stem Cells in Graft-Versus-Host Disease as a Regenerative Therapy Written By Neslihan Mandacı Şanlı and **Aysu Timuroğlu**" Submitted: 29 January 2025 Reviewed: 03 February 2025 Published: 07 March 2025 DOI: 10.5772/intechopen.1009434
2. From the Edited Volume : Stem Cell Transplantation Pier Paolo Piccaluga, Giuseppe Visani and Shaimaa Salaheldin Khattab "Current Advances in Stem Cell-Based Therapies: Adult Stem Cell Applications" Written By Neslihan Mandacı Şanlı and **Aysu Timuroğlu** Submitted: 31 May 2024 Reviewed: 18 September 2024 Published: 14 November 2024 DOI: 10.5772/intechopen.1007380

Journals:

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2. Clinical Study: An open-label study to evaluate prophylaxis treatment, and to characterize the efficacy, safety, and pharmacokinetics of B-domain deleted recombinant factor VIII Albumin Free (Moroctocog alfa [AF-CC]) in children with hemophilia A.
3. Multicenter Study: Deferasirox in children with transfusion-dependent thalassemia or sickle cell anemia: A large cohort real-life experience from Turkey (REACH-THEM).

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Adult Hematology Abstract Categories

Acute Leukemias

OP 01

TREATMENT OUTCOMES AND FACTORS AFFECTING SURVIVAL IN PEDIATRIC ACUTE MYELOID LEUKEMIA

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Objective: This study aims to analyze the clinical and genetic characteristics of pediatric AML patients, evaluate treatment responses and survival under AML-BFM 2004 and 2012 protocols, identify factors affecting survival, and compare findings with international data to provide context for results. **Methodology:** In this study, 49 pediatric patients under 18 years of age diagnosed with AML at a tertiary university hospital in Turkey between January 2010 and December 2023 were retrospectively reviewed. Demographic data, clinical findings at initial diagnosis, use of leukapheresis, administration of cytoreductive therapy prior to induction, induction response, relapse status, outcomes of stem cell transplantation, and current status (alive/deceased) of these patients were evaluated. Age at diagnosis was stratified into three groups: <2 years, 2–13 years, and ≥14 years. Hemoglobin level (g/dL), leukocyte count (x10^9/L), platelet count (x10^9/L), and blast percentages in bone marrow aspirate and peripheral smear (%) at diagnosis were recorded. Leukocyte count was categorized as $<50 \times 10^9$/L or $\geq 50 \times 10^9$/L.Patients were treated according to the AML-Berlin–Frankfurt–Munster 2004 and AML-BFM 2012 protocols. In the AML-BFM 2004 protocol, patients are stratified into standard-risk (SR) and high-risk (HR) groups based on their treatment response after induction and genetic features at the time of initial diagnosis. The AML-BFM 2012 protocol also stratifies risk as SR, intermediate-risk (IR), and HR. In addition, patients were compared in two groups: AML M3 (acute promyelocytic leukemia) and non-AML M3 (AML M1, M2, M4-7, biphenotypic, undifferentiated type).The AML-BFM 2004 protocol was used between 2010 and 2015, and the AML-BFM 2012 protocol was used between 2016 and 2023. Treatment efficacy was assessed at the morphological level using bone marrow aspiration at the end of chemotherapy blocks. Complete remission was defined as normocellular marrow with ≤5% blasts, peripheral neutrophil count $\geq 1 \times 10^9$/L, platelet count $\geq 80 \times 10^9$/L, absence of extramedullary disease, and no blasts in the central nervous system. **Statistical Analysis:** Data were expressed as mean ± SD or median (IQR) based on normality. Intergroup comparisons were performed using Chi-square, Fisher's exact, and t-tests. Non-normally distributed data were analyzed using the Mann–Whitney U test. Survival rates were calculated using the Kaplan–Meier method. Receiver operating characteristic (ROC) curve analysis evaluated prognostic prediction performance. Statistical analyses were conducted using IBM SPSS Statistics Data Editor. A p-value <0.05 was considered statistically significant. **Results:** The median age was 12 years, with the most frequent age group being 2–13 years. Twenty-five patients (51%) were female. The most frequent morphological subtype was AML M3 in 16 cases (32.7%). Risk stratification classified 28 patients (57.2%) as SR, 6 (12.2%) as IR, and 15 (30.6%) as HR. The most frequent genetic mutation observed was t(15;17) in 16 patients (32.6%), followed by t(8;21) in 9 patients (18.3%). Seventeen patients (34.7%) were treated under the AML-BFM 2004 protocol, and 32 under the AML-BFM 2012 protocol. Leukapheresis was performed in 8 (16.3%), with all leukapheresis patients achieving a response. Complete remission (bone marrow blasts <5%) after induction was achieved in 40 patients (81.6%). Six patients underwent bone marrow transplantation (BMT), of whom 3 (50%) died due to post-transplant relapse. Thirteen patients (26.5%) experienced relapse: One in the AML M3 group and 12 (24.5%) in the non-AML M3 group. Twelve relapsed patients (92.3%) died. Among BMT recipients, one patient underwent transplantation for HR disease without prior relapse; however, later died due to post-transplant relapse. Overall, 19 patients (38.8%) died. Survival rates were significantly lower in patients with leukocyte counts $\geq 50 \times 10^9$/L (p=0.002). ROC curve analysis revealed an area under the curve (AUC) of 0.744 for leukocyte count ($p < 0.005$), with a cut-off value >42,850 $\times 10^9$ /L. Lower hemoglobin levels at diagnosis were associated with reduced survival (p=0.030). The mean overall survival (OS) for AML-M3 patients was 113 months ±%6.8 months (95% CI: 99.3-126.3), whereas the

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median OS for non-AML M3 patients was 28±%17.2 months (95% CI: 0.00-61.8) (p=0.002). Survival duration was shorter in IR and HR groups than the SR group.Cumulative survival rates at 1 and 5 years were significantly longer in AML-M3 patients than non-AML M3 patients. For AML-M3, cumulative survival was 94%±%6 at both time points. In non-AML M3 patients, 1-year and 5-year cumulative survival rates were 73% and 43%, respectively (p = 0.002). In relapsed patients, median OS after relapse was 3±0.8 months (95% CI:1.23-4.76) (p=0.000). No significant difference in survival rates was observed between the AML-BFM 2004 and AML-BFM 2012 protocols. **Conclusion:** In the present study, key factors influencing survival in pediatric AML included risk group, age at diagnosis, induction response at diagnosis, and time-to-relapse. Among relapsed patients, the initial risk group also affected survival. Leukapheresis had no impact on survival. Mortality remains high in non-AML M3 cases. Further research is required to develop genetically defined treatment subgroups in pediatric AML. We recommend more stringent risk stratification for IR patients under the AML-BFM 2012 protocol, and advocate for larger studies aimed at creating standardized, personalized treatment protocols for all patients.

https://doi.org/10.1016/j.htct.2025.106111

OP 02

TP53-Deleted Mixed Phenotype Acute Leukemia with Widespread Nodal Disease: Complete Remission after HyperCVAD plus Azacitidine

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Introduction: Mixed phenotype acute leukemia (MPAL) is rare and clinically aggressive, particularly when accompanied by TP53 deletion and complex karyotype. Nodal presentations can mimic lymphoma, delaying definitive therapy. We report a young woman with MPAL (B/Myeloid) and extensive nodal involvement who achieved complete remission (CR) with HyperCVAD plus azacitidine. **Methods:** Single-patient case review of prospectively collected data. Diagnostic work-up included complete blood counts, bone marrow (BM) aspirate/biopsy with immunohistochemistry (IHC), multiparameter flow cytometry, cytogenetics/FISH, PCR panel for recurrent fusions, and FDG PET-CT. Treatment consisted of HyperCVAD combined with azacitidine. Response was assessed morphologically, by PET-CT, and by minimal residual disease (MRD) testing. **Results:** A 37-year-old woman presented with fatigue, bilateral cervical and axillary lymphadenopathy, and pancytopenia. BM was normo−to-hypersellular (cellularity ∼50 −65%) with blast proliferation; reticulin 0−1/4. IHC showed CD34+, CD117+, CD33+, heterogeneous CD3 and rare TdT; PAX5 was positive in marrow sections, while CD20, MPO, and CD13 were negative. Excisional axillary-node pathology revealed blast infiltration (CD34+, CD117+, CD33+, CD3+, CD5+, CD10+, BCL2+, Ki-67 ∼30%; PAX5 and MPO negative), supporting leukemic involvement. Flow cytometry identified a 53% blast population expressing CD33, HLA-DR, and aberrant CD7, negative for CD19, CD10, surface CD3, and MPO—consistent with **MPAL (B/Myeloid)** in the aggregate clinicopathologic context.Cytogenetics demonstrated **complex hyperdiploidy (85−92 chromosomes)** with **trisomy 8** and **tetrasomy 10**; FISH detected **TP53 (17p) deletion**. TEL/AML1, PML/RARA, BCR/ABL, AML/ETO were negative by FISH; PCR for BCR-ABL, PML-RARA, and FLT3 was negative. Baseline PET-CT showed **widespread FDG-avid nodal disease** (cervical, axillary, mediastinal, abdominal, retroperitoneal; SUVmax ∼4 −10) without visceral uptake. First-line **HyperCVAD plus azacitidine** was administered with standard supportive care. End-of-treatment evaluation demonstrated **morphologic CR**, **MRD negativity**, and **metabolic complete response** by PET-CT. The patient remained in remission on early surveillance. **Discussion:** This case highlights three practice points. (1) **Nodal MPAL can masquerade as lymphoma**; integrated BM, node histology, flow, and molecular profiling are essential to prevent misclassification and treatment delay. (2) **TP53 deletion with complex karyotype** portends high risk; nonetheless, **HyperCVAD plus azacitidine** achieved deep response, suggesting potential synergy of epigenetic priming with intensive chemotherapy in adverse-genetic MPAL. (3) Discordant lineage signals (e.g., PAX5 IHC positivity with B-lineage markers absent on flow, and MPO negativity despite myeloid antigen expression) illustrate real-world diagnostic ambiguity in MPAL and the need to rely on the totality of evidence rather than any single assay. **Conclusion:** In TP53-deleted, complex-karyotype **MPAL with extensive nodal disease**, **HyperCVAD plus azacitidine** induced **MRD-negative CR** with metabolic clearance. This experience supports considering epigenetic-augmented intensive regimens in high-risk MPAL and underscores the diagnostic value of coordinated marrow−node evaluation.

https://doi.org/10.1016/j.htct.2025.106112

OP 03

Dasatinib-Induced Progressive Enterocolitis Mimicking Inflammatory Bowel Disease in a Patient with Chronic Myeloid Leukemia: A Case Report

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Introduction: Dasatinib is a potent second-generation tyrosine kinase inhibitor widely used in chronic myeloid leukemia (CML) treatment, particularly in patients intolerant to imatinib. While generally well-tolerated, dasatinib can cause various adverse effects including pleural effusions, cytopenias, and gastrointestinal symptoms. However, progressive enterocolitis resembling inflammatory bowel disease (IBD) is rarely reported and poses diagnostic challenges due to clinical and endoscopic similarities to IBD. **Case Report:** A 71-year-old female with a 20-year history of achalasia was diagnosed with chronic myeloid leukemia in 2021 following evaluation

for leukocytosis and typical hematological findings. Initial treatment with imatinib 400 mg daily was discontinued due to severe facial edema. Subsequently, dasatinib 100 mg daily was initiated as second-line therapy. Concurrent with dasatinib initiation, the patient developed new gastrointestinal symptoms previously absent in her medical history, including abdominal pain, intermittent diarrhea, altered bowel habits, and occasional hematochezia. These symptoms progressively worsened over subsequent years despite achieving hematological remission. Physical examination in 2021 revealed stable vital signs with mild diffuse abdominal tenderness without hepatosplenomegaly. Laboratory investigations confirmed BCR-ABL positivity establishing CML diagnosis, with leukocytosis (WBC >50,000/μL) and normal renal and hepatic function. Hematological remission was maintained throughout 2022-2025 follow-up period. Colonoscopy performed in February 2022 revealed minimal terminal ileal hyperemia with edematous and granular colonic mucosa, raising suspicion for ulcerative colitis or Crohn's disease. Histopathological examination of biopsies showed chronic active colitis with cryptitis, terminal ileitis, and eosinophilic infiltration, but lacked granulomas or specific features diagnostic of IBD. Previous biopsies from November 2021 demonstrated similar chronic active colitis and cryptitis without diagnostic specificity. Despite endoscopic findings suggestive of IBD, the absence of characteristic histopathological features and progressive symptom worsening during dasatinib therapy raised suspicion for drug-induced enterocolitis. In 2025, when gastrointestinal symptoms significantly intensified, dasatinib was discontinued. Remarkably, within approximately two months of dasatinib discontinuation, all gastrointestinal symptoms completely resolved, providing strong evidence for drug-induced etiology rather than IBD. **Discussion:** This case demonstrates a rare but clinically significant adverse effect of dasatinib therapy. While gastrointestinal symptoms are recognized side effects of tyrosine kinase inhibitors, progressive enterocolitis mimicking IBD is uncommon and poses diagnostic challenges. The temporal relationship between dasatinib initiation and symptom onset, progressive worsening during treatment, and complete resolution following discontinuation strongly supports drug-induced etiology. The endoscopic findings, while concerning for IBD, lacked supporting histopathological evidence, which is crucial for IBD diagnosis. The mechanism underlying dasatinib-induced enterocolitis remains unclear but may involve disruption of intestinal epithelial barrier function or immune-mediated inflammatory responses. The eosinophilic infiltration observed in biopsies suggests possible allergic or hypersensitivity reaction. Clinicians should maintain high suspicion for drug-induced enterocolitis in CML patients receiving dasatinib who develop new gastrointestinal symptoms, particularly when symptoms are progressive. Careful correlation between clinical presentation, endoscopic findings, and histopathological examination is essential to avoid misdiagnosis and inappropriate immunosuppressive therapy. **Conclusion:** Dasatinib can cause progressive enterocolitis mimicking IBD in CML patients. Complete symptom resolution following drug discontinuation confirms the diagnosis and highlights the importance of considering drug-induced etiology before initiating immunosuppressive therapy for presumed IBD in patients receiving tyrosine kinase inhibitors.

https://doi.org/10.1016/j.htct.2025.106113

OP 4

CASE REPORT: A RARE TRIPLE MALIGNANCY – JAK2-POSITIVE POLYCYTHEMIA VERA, CHRONIC LYMPHOCYTIC LEUKEMIA AND EGFR-MUTANT STAGE IIIB NON–SMALL CELL LUNG ADENOCARCINOMA WITH UNUSUAL CLINICAL COURSE

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Case Description: A 73-year-old male was first diagnosed with PV (hemoglobin >18 g/dL, hematocrit >55%, JAK2 V617F positive) in 2016. He was managed with low-dose aspirin and phlebotomy; hydroxyurea was added later. In 2019, routine CBC showed persistent lymphocytosis (lymphocytes ~12 × 10^9/L). Flow cytometry demonstrated CD5+, CD19+, CD23+, FMC7− B-cells comprising 68% of lymphocytes, confirming Rai stage I CLL. No active treatment was initiated. In 2020, during evaluation for COVID-like respiratory symptoms, thoracic CT revealed a during evaluation for a COVID-19-suspected cough and dyspnea, thoracic CT revealed a 20 × 14 mm left upper lobe mass with mediastinal lymphadenopathy with mediastinal lymphadenopathy. Bronchoscopic biopsy confirmed adenocarcinoma. EGFR exon 21 L858R mutation was present; ALK and ROS1 were negative. PET–CT staged disease at IIIB. Standard chemoradiotherapy was declined by the patient. Erlotinib treatment was initiated in March 2020. Concurrent progression of CLL with B symptoms prompted introduction of chlorambucil 10 mg daily for 7 days in a 28-day cycle. At 3-month follow-up, CT scan showed near-complete regression of primary lung lesion and mediastinal nodes. CBC normalized. JAK2 V617F mutation, positive in 2016, was undetectable via allele-specific PCR (<1% allele burden). The patient exhibited ECOG 1 and continued erlotinib and chlorambucil with no grade ≥2 toxicity. **Timeline:** • 2016: PV diagnosis (JAK2 V617F+) → aspirin/phlebotomy • 2019: Rai stage IV CLL diagnosis+ chlorambucil • 2020: NSCLC diagnosis (EGFR L858R+), start erlotinib • 2021: Near-complete response, hematologic normalization, JAK2 negativity **Diagnostic Assessment:** Routine labs and molecular assays performed at a reference laboratory confirmed JAK2 mutation status. Flow cytometry was consistent with CLL immunophenotype. NSCLC diagnosis followed standard bronchoscopic sampling; molecular analysis used validated PCR panels and sequencing. **Therapeutic Intervention:** • **Erlotinib**: 150 mg PO daily as standard first-line for EGFR-mutant NSCLC[^3]. • **Chlorambucil**: 10 mg PO daily for 7/28 cycle for symptomatic Rai stage IV CLL, selected for low toxicity in elderly[^4]. **Follow-Up and Outcomes:** • **At 3 Months:** Dramatic radiologic regression; normalization of hematologic parameters; JAK2 mutation undetectable. • Continued stable on erlotinib + chlorambucil with no significant toxicity; quality of life

maintained. **Discussion:** This case is unique in that: • **Sequential triple malignancy**: PV, CLL, and EGFR-mutant NSCLC rarely occur together. • **Therapeutic synergy**: Dual-targeted therapy produced durable responses in both solid and hematological malignancies. • **JAK2 loss**: Post-treatment JAK2 negativity suggests clonal competition or epigenetic remission; parallels have been observed with interferon-alpha in MPN[5]. • **Clinical implications**: Supports feasibility of combinatorial targeted therapy in elderly with multiple malignancies. Clonal hematopoiesis of indeterminate potential (CHIP) and aging likely predisposed this patient to multiple neoplasms [^6]. The "clonal competition hypothesis" posits that dominant clones (e.g., NSCLC with EGFR mutation) may suppress other clones (JAK2+) via shared niche or resource limitation. Limitations include single-patient observation; further genomic investigation (e.g., NGS) could clarify clonal evolution mechanisms. We recommend longitudinal monitoring of allele burden and expanded studies on multi-targeted therapy interactions. **Conclusion:** Conclusion Elderly patients with multiple sequential malignancies can benefit from tailored, low-toxicity targeted therapies. The unexpected disappearance of JAK2 mutation invites further investigation into clonal dynamics and epigenetic remission phenomena. This case enriches our understanding of cancer ecology in aging patients.

https://doi.org/10.1016/j.htct.2025.106114

OP 5

Autoimmune Hemolytic Anemia as the Presenting Feature of Chronic Lymphocytic Leukemia: Two Contrasting Cases Across Different Age Groups

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Introduction: Chronic lymphocytic leukemia represents the most common adult leukemia in Western countries, with autoimmune hemolytic anemia occurring as a complication in 5-10% of cases. AIHA as the presenting feature of CLL is uncommon, particularly in young adults where CLL incidence is extremely rare. The immunophenotypic heterogeneity of CLL, including atypical variants, may influence both clinical presentation and treatment response. **Case Reports:** Case 1: An 84-year-old female presented with progressive fatigue, weakness, and dyspnea. Laboratory evaluation revealed severe anemia (Hb: 9.3 g/dL), marked leukocytosis ($42.36 \times 10^3/\mu L$), and thrombocytopenia. Direct antiglobulin test was strongly positive (3+), confirming warm-type AIHA. Flow cytometry demonstrated classic CLL immunophenotype: CD19+ (93%), CD5+ (95%), CD23+ (84%), CD20+ (52%), with absent CD38 expression suggesting favorable-risk disease. Bone marrow biopsy confirmed CLL/SLL with 50% infiltration. Treatment with prednisolone rapidly resolved hemolysis, followed by ibrutinib therapy for CLL. The patient achieved sustained remission over 12 months with corticosteroid discontinuation after 3 months. Case 2: A 25-year-old male presented with dyspnea, palpitations, and fatigue. Initial workup revealed severe anemia (Hb: 7.8 g/dL), reticulocytosis (6.8%), and elevated LDH with spherocytes on peripheral smear. Direct antiglobulin test was strongly positive (4+). Investigation revealed lymphocytosis (14,200/mm^3, 68% lymphocytes) with atypical CLL immunophenotype: CD5+/CD19+/FMC7+/CD23-, distinguishing it from typical CLL while excluding mantle cell lymphoma through negative cyclin D1. TP53 abnormalities were absent. Initial prednisolone therapy provided insufficient response, prompting rituximab monotherapy (375 mg/$m^2 \times 4$ cycles). The patient achieved complete hematologic response with hemoglobin normalization (11.6 g/dL), reticulocyte count resolution, and lymphocytosis improvement. **Discussion:** These cases illustrate important clinical principles in CLL-associated AIHA management. The elderly patient presented with classic CLL immunophenotype and favorable prognostic markers (CD38-negative), supporting the choice of BTK inhibitor therapy appropriate for her age and comorbidities. The young adult case demonstrated atypical CLL immunophenotype (FMC7+/CD23-), representing a variant phenotype that required careful differentiation from mantle cell lymphoma. The treatment approaches differed significantly based on age and disease characteristics. The elderly patient benefited from targeted therapy (ibrutinib) combined with corticosteroids, while the young patient achieved excellent response with rituximab monotherapy after steroid failure. This highlights the importance of individualized treatment selection based on patient factors and disease biology. Both cases emphasize the critical role of comprehensive flow cytometric analysis in patients presenting with unexplained AIHA, regardless of age. Early recognition of underlying CLL enables appropriate targeted therapy and optimal outcomes. The contrasting immunophenotypes demonstrate the heterogeneity of CLL, with both classic (CD5+/CD23+) and atypical (CD5+/CD23-/FMC7+) variants capable of presenting with AIHA as the initial manifestation. **Conclusion:** AIHA may serve as the presenting feature of CLL across diverse age groups with varying immunophenotypic profiles. These cases underscore the importance of systematic flow cytometric evaluation in all AIHA patients and demonstrate that age-appropriate targeted therapies can achieve excellent clinical outcomes in both classic and atypical CLL variants.

https://doi.org/10.1016/j.htct.2025.106115

OP 6

HHV-8 Positive Kaposi Sarcoma in a Myelofibrosis Patient Treated with Ruxolitinib: A Rare but Clinically Relevant Association

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Introduction: Kaposi sarcoma (KS) is a rare vascular tumor strongly associated with human herpesvirus 8 (HHV-8) and typically seen in immunocompromised states such as HIV/AIDS or post-transplant settings. However, with the increasing use of immunomodulatory therapies in hematologic

malignancies, KS has also been reported in patients receiving Janus kinase (JAK) inhibitors. We present a case of HHV-8-positive cutaneous Kaposi sarcoma developing in a patient with primary myelofibrosis under ruxolitinib treatment. **Methods:** A 72-year-old female with a 2-year history of intermediate-2 risk primary myelofibrosis, positive for the JAK2 V617F mutation, was being followed in our hematology department. She had been on ruxolitinib (2×10 mg/day) for symptom control, which provided initial improvement in systemic complaints and splenomegaly. However, after 14 months of treatment, she developed painless violaceous plaques and nodules on her lower extremities, raising suspicion for Kaposi sarcoma. Dermatologic examination confirmed the presence of multiple dark purple nodules predominantly on the left lower leg. A punch biopsy was performed, and histopathological examination revealed spindle-cell proliferation consistent with Kaposi sarcoma. Immunohistochemical staining was strongly positive for HHV-8. **Results:** Laboratory evaluation revealed hemoglobin of 9.2 g/dL, white blood cell count of 13,000/mm^3, and platelet count of 120,000/mm^3. Peripheral smear showed typical findings of myelofibrosis, including teardrop-shaped erythrocytes. HIV, HBV, and HCV tests were all negative. Abdominal ultrasonography confirmed stable splenomegaly (19 cm). The ruxolitinib treatment was discontinued, and hydroxyurea was initiated as an alternative. Given that the Kaposi lesions were localized and the patient remained asymptomatic, systemic chemotherapy was not started. The patient is being followed with close dermatological and hematological monitoring. **Discussion:** This case highlights a rare but clinically significant complication of ruxolitinib therapy in a patient with primary myelofibrosis. JAK inhibition may lead to immune dysregulation, impaired antiviral T-cell responses, and viral reactivation—particularly HHV-8 in susceptible individuals. Although KS is commonly associated with HIV, this patient had no underlying immunodeficiency other than the JAK inhibitor–mediated suppression. The temporal relationship between ruxolitinib exposure and KS onset, combined with HHV-8 positivity and regression of symptoms after discontinuation of the drug, supports a probable causal association. Clinicians should remain vigilant for unusual infections or neoplasms in patients undergoing JAK inhibitor therapy.

https://doi.org/10.1016/j.htct.2025.106116

OP 7

Sequential Autoimmune Hematological Manifestations: From Isolated Lupus Anticoagulant to Post-COVID-19 Autoimmune Hemolytic Anemia

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Introduction: Autoimmune hematological disorders can present with variable phenotypes over time, suggesting underlying B-cell dysregulation. We report a unique case of sequential, distinct autoimmune manifestations occurring five years apart in the same patient, highlighting the heterogeneous nature of autoimmune hematological conditions and their potential triggers. **Case Presentation:** A middle-aged woman with no history of systemic autoimmune disease presented in 2019 with incidentally discovered coagulopathy. Routine laboratory evaluation revealed an INR >3 without bleeding symptoms. Further workup showed prolonged PT with normal aPTT, normal liver function, and normal levels of factors VIII, IX, and XI. Lupus anticoagulant testing was positive, while anticardiolipin and β2-glycoprotein I antibodies were negative. The patient did not meet criteria for systemic lupus erythematosus or antiphospholipid syndrome. Without specific treatment, the coagulation abnormalities spontaneously resolved within three months. Five years later, in 2024, the patient developed fatigue, jaundice, and anemia two weeks after COVID-19 infection. Laboratory findings revealed: markedly decreased hemoglobin, elevated LDH, suppressed haptoglobin, and elevated indirect bilirubin. Direct antiglobulin test (DAT) was strongly positive for IgG. Interestingly, lupus anticoagulant and other antiphospholipid antibodies were negative at this presentation. Bone marrow aspiration showed normocellular marrow with erythroid hyperplasia, excluding malignancy or dysplasia. The diagnosis of COVID-19-associated autoimmune hemolytic anemia (AIHA) was established. Treatment with rituximab 375 mg/m^2 weekly for four doses was initiated. The patient demonstrated dramatic response within two weeks, with rapid normalization of hemoglobin, LDH, and bilirubin levels. The DAT became negative, and the patient remains in remission on regular follow-up. **Discussion:** This case illustrates the dynamic nature of autoimmune hematological disorders. The initial presentation of isolated lupus anticoagulant positivity with spontaneous resolution, followed years later by post-viral AIHA, suggests an underlying predisposition to B-cell mediated autoimmunity with variable clinical expression. COVID-19 has been increasingly recognized as a trigger for autoimmune phenomena, including AIHA. The temporal relationship between COVID-19 infection and AIHA development in our patient, combined with the excellent response to B-cell depletion therapy, supports this association. The contrasting immunological profiles between episodes—positive lupus anticoagulant initially versus positive DAT with negative antiphospholipid antibodies later—demonstrates that autoimmune manifestations can evolve independently over time. This heterogeneity poses diagnostic and therapeutic challenges but also provides insights into the complexity of autoimmune regulation. **Conclusion:** Sequential development of distinct autoimmune hematological disorders in a single patient underscores the importance of comprehensive evaluation and long-term monitoring. The dramatic response to rituximab in the second episode highlights the central role of B-cell dysregulation in these conditions. This case emphasizes the need for heightened awareness of post-viral autoimmune complications and the potential for evolving autoimmune phenotypes over time.

https://doi.org/10.1016/j.htct.2025.106117

Lymphoma

OP 8

VITREORETINAL INVOLVEMENT IN NASAL CAVITY B-CELL LYMPHOMA: A RARE FORM OF RELAPSE

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INTRODUCTION: Non-Hodgkin lymphomas are malignant neoplasms of lymphoid tissue, and a subset present with extranodal involvement. The head and neck region represents one of the clinically relevant localizations. Sinonasal B-cell lymphomas are a rare subtype, most often manifesting as diffuse large B-cell lymphoma (DLBCL), and typically show aggressive clinical behavior. Relapses most frequently involve cervical lymph nodes, the orbit, and the central nervous system. Ocular involvement is rare, usually presenting as orbital masses or ocular adnexal lymphoma. Vitreoretinal infiltration is even more unusual and has been described only infrequently. In this case report, we present an elderly male patient with nasal cavity B-cell lymphoma who developed relapse with vitreoretinal involvement, aiming to emphasize the diagnostic and therapeutic aspects of this rare condition. **CASE PRESENTATION:** A 71-year-old male was diagnosed three years earlier with nasal cavity B-cell lymphoma. Bone marrow biopsy at diagnosis showed no systemic involvement. He received four cycles of R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) and achieved complete remission. Three years later, he presented with decreased vision in the left eye. Orbital MRI showed tortuosity of the optic nerve and slight widening of the perioptic space (Figure 1). Cranial MRI revealed only age-related changes. Cytology and flow cytometry of vitreous fluid demonstrated CD20 and CD79a positivity with high proliferative activity, consistent with B-cell neoplasia. PET-CT revealed limited FDG uptake (SUVmax 5.02) in the anterior aspect of the left orbit (Figure 2), with no additional systemic involvement. Based on his disease history, systemic high-dose methotrexate combined with cytarabine and intrathecal therapy was initiated. Radiotherapy was also considered. He was referred to another specialized center for possible intravitreal chemotherapy. Despite systemic treatment, follow-up revealed that the patient had died. **DISCUSSION AND CONCLUSION:** Sinonasal B-cell lymphomas are uncommon, most often exhibiting DLBCL histology with aggressive clinical features. Relapses most frequently involve cervical nodes, orbital structures, or the central nervous system. Although orbital disease is recognized, vitreoretinal infiltration is exceedingly rare and has been reported in less than 5% of cases in large series. Diagnosis is challenging, as ocular involvement may present with non-specific symptoms such as visual impairment or vitreous opacities, requiring cytology, immunophenotyping, and immunohistochemistry of vitreous samples for confirmation. Therapeutic options include systemic high-dose methotrexate and cytarabine, with intrathecal therapy commonly added for central nervous system prophylaxis. Radiotherapy may contribute to local control in orbital disease. Intravitreal chemotherapy has also been described, most often with methotrexate, and rituximab has been used in selected cases. The prognosis of ocular involvement is poor, with median survival reported between 12 and 36 months and a high risk of central nervous system relapse. This case illustrates that vitreous infiltration may represent a relapse manifestation of sinonasal B-cell lymphoma and highlights the importance of careful evaluation of ocular symptoms in such patients.

https://doi.org/10.1016/j.htct.2025.106118

OP 9

THERAPEUTIC CHALLENGE IN HISTIOCYTIC SARCOMA: A CASE REPORT OF NIVOLUMAB ADDITION TO THE ICE PROTOCOL

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Introduction: Histiocytic sarcoma (HS) is an exceptionally rare and aggressive hematopoietic malignancy, representing less than 1% of hematologic neoplasms [1]. No standardized therapeutic regimen exists; patients are often treated with lymphoma-like regimens such as CHOP or ICE, with limited efficacy and median survival of approximately six months [2,1]. Recent advances in molecular pathology have revealed recurrent BRAF^V600E mutations, ALK rearrangements, and PD-L1 expression, providing new diagnostic and therapeutic implications [3]. Case-based evidence suggests that PD-1 inhibitors may induce durable responses in select patients with PD-L1–positive HS [4,5]. **Case Presentation:** A 28-year-old male presented with abdominal pain and swelling. Imaging demonstrated a large intra-abdominal mass with peritoneal implants. Histopathology confirmed HS, positive for CD45, CD163, and CD14, with a Ki-67 index of 80%. Bone marrow biopsy was normocellular. Molecular analysis excluded BRAF and ALK alterations but demonstrated PD-L1 expression with a tumor proportion score (TPS) of 1–49% and a combined positive score (CPS) of 35%. The patient was started on ICE chemotherapy (ifosfamide, carboplatin, etoposide). Following biomarker analysis, nivolumab was introduced beginning with the second cycle. The treatment was well tolerated, and subsequent PET-CT demonstrated marked metabolic regression with clinical improvement. Follow-up abdominal imaging confirmed complete radiological response, with disappearance of the initially described mesenteric mass. **Conclusion:** Discussion HS poses a therapeutic challenge because of its aggressive course and lack of standardized therapy [2,1]. Conventional chemotherapy regimens have limited durability, and reported responses are often transient. The presence of PD-L1 expression provided a rationale for incorporating a PD-1 inhibitor, even at moderate expression levels, consistent with emerging literature [4]. Previous case reports have demonstrated clinical benefit from

pembrolizumab and nivolumab in PD-L1–positive HS, including durable complete responses [5]. In this patient, radiological assessment corroborated complete remission after combined ICE and nivolumab, supporting the potential role of checkpoint inhibition in improving depth of response. This case represents one of the few documented examples of combining intensive chemotherapy with checkpoint blockade in HS, highlighting the potential synergistic role of immunotherapy.Conclusion This case illustrates the rarity and therapeutic complexity of HS. The addition of nivolumab to ICE chemotherapy, guided by PD-L1 expression, resulted in meaningful clinical response in a young patient with advanced disease. These findings underscore the importance of integrated histopathological and molecular assessment in guiding personalized management for HS.Keywords: Histiocytic sarcoma; Nivolumab; ICE protocol; PD-L1; ImmunotherapyReferences1.Takimoto, T., et al. (2023). Histiocytic sarcoma: A clinicopathologic analysis of 50 cases. American Journal of Surgical Pathology, 47(1), 1–12. 2. Emile, J. F., et al. (2022). Histiocytic and dendritic cell neoplasms: Update of the 2022 WHO classification. Blood, 140(11), 1200–1218. 3. Go, H., et al. (2019). Frequent detection of BRAF V600E mutations in histiocytic and dendritic cell neoplasms. Histopathology, 74(3), 389–400. 4. Bossard, C., et al. (2021). PD-1/PD-L1 blockade in rare hematologic malignancies: Case reports and literature review. Hematological Oncology, 39(3), 327–334. 5.Yoon, D. H., et al. (2022). Efficacy of pembrolizumab in histiocytic sarcoma with high PD-L1 expression: Case report and review. Annals of Hematology, 101(7), 1525–1530.

https://doi.org/10.1016/j.htct.2025.106119

OP 10

Plasma-Cell–Predominant Idiopathic Multicentric Castleman Disease: A Rare Diagnostic and Therapeutic Challenge

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Introduction: Castleman disease represents a rare, heterogeneous group of lymphoproliferative disorders, often categorized as unicentric or multicentric, with plasma-cell (PC), hyaline-vascular, or mixed histology. Idiopathic multicentric Castleman disease (iMCD) remains a diagnostic and therapeutic challenge, particularly in patients presenting with systemic inflammation and polyclonal plasmacytosis without overt clonal plasma cell disorder. We present the case of a patient with plasma-cell–predominant iMCD, successfully treated with IL-6 blockade, emphasizing the diagnostic pitfalls and the importance of early therapeutic intervention. **Methods:** A male patient was admitted to the Department of Hematology, Çukurova University, with a 1-year history of progressive fatigue, weight loss, abdominal fullness, and generalized lymphadenopathy. Physical examination revealed widespread lymphadenopathy and splenomegaly. Laboratory tests demonstrated normocytic anemia, elevated CRP and ferritin, mildly increased IgG, and elevated β2-microglobulin. Excisional lymph node biopsy and splenectomy specimens were evaluated by histopathology and immunohistochemistry. Imaging studies included CT and PET-CT for staging., Türkiye **Results:** Histopathology revealed follicular hyperplasia with regressed germinal centers and interfollicular plasmacytosis. Immunohistochemistry confirmed CD38+ and CD138+ plasma-cell infiltration, HHV-8 negativity, and a nonclonal kappa/lambda pattern. IgG4/IgG ratio was 22%. PET-CT demonstrated widespread FDG-avid lymphadenopathy (SUVmax 4–6) and splenomegaly, without extranodal organ involvement. Bone marrow evaluation was negative for clonal plasma cell infiltration. The case was classified as idiopathic multicentric Castleman disease, plasma-cell variant (iMCD-PC). The patient was initiated on tocilizumab (anti-IL-6R) in combination with corticosteroids. Within 6 weeks, systemic symptoms and inflammatory markers improved significantly, with partial regression of lymphadenopathy on imaging. In the event of refractoriness, lenalidomide or sirolimus were considered as second-line options. Close follow-up with PET-CT and serum paraproteins was arranged to monitor potential clonal evolution into plasma cell neoplasia. **Discussion:** This case illustrates the diagnostic complexity of iMCD-PC, which may mimic lymphoid malignancies and overlap with monoclonal gammopathies. The absence of monoclonality and CRAB criteria excluded multiple myeloma, while systemic inflammatory features and IL-6 axis dysregulation supported iMCD. Tocilizumab provided meaningful clinical and biochemical improvement. The case is valuable as an example of iMCD with strong plasmacytic component, highlighting the necessity of long-term surveillance due to the risk of clonal transformation. **Conclusion:** Plasma-cell–predominant iMCD is a rare and diagnostically challenging entity requiring integration of histopathology, immunohistochemistry, imaging, and laboratory findings. Anti–IL-6–directed therapy represents an effective treatment option, but close monitoring remains mandatory. This case underlines the importance of early recognition and targeted therapy in preventing disease-related morbidity.

https://doi.org/10.1016/j.htct.2025.106120

OP 11

LANGERHANS CELL HISTIOCYTOSIS: SINGLE-CENTER EXPERIENCE

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Introduction and Objective: Langerhans cell histiocytosis (LCH) is a rare clonal proliferative disease that can involve one or more organs (1). In adults, multisystem involvement is generally predominant (68.6%), whereas single-system involvement is less common (2). The clinical spectrum is broad, with bone, skin, and lungs being the most frequently affected organs. The treatment approach varies according to the extent of the disease, and the optimal treatment strategy

has not yet been clearly defined(3-6). This study aimed to evaluate the demographic characteristics, sites of involvement, treatments administered, and treatment responses of adult LCH cases diagnosed at our center. **Methods:** Medical records of adult patients diagnosed with LCH at our center between 2002 and 2024 were retrospectively reviewed. Patient age, sex, sites of involvement, treatment regimens, treatment responses, and follow-up durations were recorded. **Results:** A total of 10 patients (9 male, 1 female) were analyzed. The median age was 31.5 years (range: 20–76). The median follow-up duration was 5.8 years (approximately 69 months). Three patients (30%) had multisystem involvement, and seven patients (70%) had single-system involvement. The most common site of involvement was bone (80%), followed by skin (20%) and lymph nodes (10%). Diabetes insipidus was detected in one patient (10%). Treatment approaches were heterogeneous. Five patients received radiotherapy (RT), three patients were treated with a vinblastine and prednisolone combination, one patient with multisystem involvement received cladribine combined with RT, one patient was given prednisolone monotherapy, and one patient was followed without treatment. A response was achieved in all patients after initial treatment. Two patients (20%) experienced relapse, both in those with bone involvement only. The patient treated with cladribine remains in long-term complete remission. No mortality was observed. Feature Value Total number of patients 10 Median age (years) 31.5 (20–76) Median follow-up duration 5.8 years (approximately 69 months) Male/Female 9/1 Multisystem 3 (30%) Single-system 7 (70%) Most common involvement Bone (80%) Relapse 2 (20%) Mortality 0 **Discussion:** In adult Langerhans cell histiocytosis, multisystem involvement is reported as the most common form in the literature; however, in our study, single-system involvement was detected in 70% of patients. This discrepancy may be explained by differences in patient referral patterns to our center, follow-up of pulmonary LCH cases in chest disease clinics, variations in staging due to the retrospective design, and demographic factors.The complete remission rate with vinblastine and prednisolone combination therapy is reported to be approximately 70% in the literature (6). In our series, all three patients treated with this regimen achieved complete remission. Cladribine, a purine analog, is an effective option in refractory or relapsed cases; in the literature, monotherapy with cladribine has been reported to achieve a complete remission rate of approximately 50% and an overall response rate of approximately 90% (5). In our series, the patient treated with cladribine achieved long-term complete remission. The relapse rate in our study was 20%, consistent with the 20–30% range reported by Néel et al. (5). **Conclusion:** Although Langerhans cell histiocytosis is a rare disease, long-term complete remission can be achieved with appropriate treatment. In our study, all patients achieved a response, and the relapse rate was 20%, consistent with the literature. Multisystem involvement is a risk factor for relapse. The patient treated with cladribine achieved long-term complete remission. Larger, multicenter prospective studies are needed to optimize treatment strategies in Langerhans cell histiocytosis.

https://doi.org/10.1016/j.htct.2025.106121

OP 12

Primary Colonic Diffuse Large B-Cell Lymphoma with Double-Expressor Phenotype: A Rare Presentation Mimicking Adenocarcinoma

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Introduction: Primary gastrointestinal lymphomas account for approximately 1-4% of all gastrointestinal malignancies, with the colon being the least commonly affected site. Diffuse large B-cell lymphoma represents the most frequent histological subtype, but primary colonic involvement remains exceptionally rare. Double-expressor lymphomas, characterized by MYC and BCL2 protein co-expression without underlying genetic translocations, constitute 20-30% of DLBCL cases and are associated with inferior outcomes compared to standard DLBCL. The rarity of primary colonic DLBCL combined with double-expressor phenotype presents unique diagnostic and therapeutic challenges. **Case Report:** A 59-year-old male with no significant medical history presented with a 2-month history of progressive right lower quadrant abdominal pain, anorexia, and 5 kg weight loss. The patient denied fever, night sweats, or B-symptoms. Physical examination revealed mild right lower quadrant tenderness without palpable lymphadenopathy, hepatosplenomegaly, or other abnormalities. Laboratory evaluation demonstrated mild normocytic anemia (hemoglobin 11.2 g/dL) with normal leukocyte and platelet counts. Biochemical studies showed elevated lactate dehydrogenase (560 U/L) with normal renal and hepatic function. Infectious disease screening including HIV, hepatitis B, and hepatitis C serologies were negative. Computed tomography of the abdomen revealed a heterogeneous 6-cm mass involving the ascending colon wall without regional lymphadenopathy or hepatosplenic involvement. Colonoscopy identified an ulcero-vegetative mass in the ascending colon causing luminal narrowing, initially suspected to represent adenocarcinoma. Histopathological examination of colonoscopic biopsies revealed diffuse proliferation of medium-to-large sized atypical lymphoid cells with prominent nuclear atypia and high mitotic activity. Comprehensive immunohistochemical analysis demonstrated strong CD20 positivity with focal CD10 expression and positive MUM1, consistent with germinal center B-cell origin. Critical findings included diffuse BCL2 positivity and MYC expression in 70% of cells, establishing double-expressor status. The proliferation index (Ki-67) was extremely high at approximately 90%. CD3 and CD5 were negative, excluding T-cell lymphoma. Fluorescence in situ hybridization (FISH) analysis for MYC, BCL2, and BCL6 gene translocations was negative, ruling out double-hit lymphoma and confirming the diagnosis as double-expressor DLBCL rather than high-grade B-cell lymphoma with MYC and BCL2 rearrangements. The final diagnosis was primary colonic diffuse large B-cell lymphoma, germinal center subtype, with double-expressor phenotype (MYC+/BCL2+) and extremely high proliferative activity. **Discussion:** This case illustrates several important clinical and pathological considerations.

Primary colonic DLBCL is extraordinarily rare, often mimicking adenocarcinoma both clinically and endoscopically, potentially leading to diagnostic delays or mismanagement. The double-expressor phenotype, present in this case, represents an aggressive biological subset associated with poor prognosis and potential resistance to standard R-CHOP therapy. The absence of genetic translocations distinguished this case from double-hit lymphoma, which would have warranted even more intensive treatment approaches. However, the double-expressor status combined with extremely high Ki-67 suggests consideration of dose-adjusted EPOCH-R or other intensified regimens over standard R-CHOP. The isolated colonic presentation without nodal or bone marrow involvement represents stage I disease, potentially offering better outcomes despite the adverse biological features. **Conclusion:** Primary colonic DLBCL with double-expressor phenotype represents a rare but aggressive entity requiring prompt recognition and specialized treatment. Comprehensive immunohistochemical and molecular evaluation is essential for accurate classification and optimal therapeutic decision-making in this challenging clinical scenario.

https://doi.org/10.1016/j.htct.2025.106122

OP 13

CD20 Antigen Loss in T-cell/Histiocyte-Rich Diffuse Large B-cell Lymphoma Following R-CHOP Therapy: A Case of Immune Escape

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Introduction: T-cell/histiocyte-rich diffuse large B-cell lymphoma constitutes approximately 1-3% of all DLBCL cases, characterized by scattered large B-cells within an extensive reactive T-cell infiltrate. This rare variant demonstrates unique biological features including frequent immune evasion mechanisms and resistance to standard immunochemotherapy. CD20 antigen loss following rituximab-containing regimens represents a well-recognized but uncommon immune escape phenomenon, occurring in approximately 10-20% of relapsed/refractory DLBCL cases. **Case Report:** A 64-year-old female presented in late 2024 with abdominal pain, weight loss, and constitutional symptoms. Imaging studies revealed para-aortic lymphadenopathy, and trucut biopsy demonstrated T-cell/histiocyte-rich DLBCL with immunohistochemical profile showing CD20(+), PAX5(+), MUM1(+), CD3 (+) reactive T-cells, and negative CD30. The diagnosis was confirmed by the presence of scattered large B-cells within an extensive CD3+ T-cell background. The patient received in outer clinic standard R-CHOP chemotherapy (rituximab, cyclophosphamide, doxorubicin, vincristine, prednisolone) for 6 cycles at an external center. Post-treatment PET-CT in March 2025 demonstrated complete metabolic response with no residual FDG uptake in previously involved lymph nodes (Deauville score 1-2). Unfortunately, the patient developed early relapse within 3 months, presenting in June 2025 with left cervical lymphadenopathy, constitutional symptoms, and weight loss. Restaging PET-CT revealed extensive disease with left cervical lymph nodes (22×15 mm, SUVmax: 7.96), massive para-aortic/iliac mass ($87 \times 42 \times 212$ mm, SUVmax: 7.96), left lung parenchymal involvement, and diffuse bone marrow activity. Bone marrow biopsy performed in July 2025 confirmed lymphomatous infiltration with a striking finding: complete loss of CD20 expression while maintaining PAX5(+) and MUM1(+) positivity, with persistent extensive reactive CD3+ T-cell infiltrate. This represented clear evidence of CD20 antigen loss as an immune escape mechanism following rituximab exposure. Given the patient's cardiac dysfunction precluding anthracycline-containing regimens, early relapse with CD20 negativity, and extensive disease burden and according to Turkish insurance systems low dose pralatrexate planned to targeting the T-cell-rich microenvironment in refractory settings. **Discussion:** This case illustrates several critical aspects of TCRLBCL management. The rapid relapse despite initial complete response highlights the aggressive nature of this DLBCL variant and its propensity for immune escape. The complete loss of CD20 antigen represents a well-documented resistance mechanism whereby malignant B-cells evade rituximab-mediated cytotoxicity through antigen downregulation or loss. The extensive reactive T-cell infiltrate characteristic of TCRLBCL may contribute to both immune surveillance and paradoxically provide a protective microenvironment for malignant cells. This unique tumor microenvironment necessitates novel therapeutic approaches targeting both malignant B-cells and the surrounding immune milieu. The importance of re-biopsy at relapse cannot be overstated, as demonstrated by the critical finding of CD20 loss that fundamentally altered treatment planning from CD20-targeting to alternative approaches.

https://doi.org/10.1016/j.htct.2025.106123

OP 14

Asymptomatic Waldenström Macroglobulinemia: A Case of Incidental Monoclonal Gammapathy Discovery

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Introduction: Waldenström macroglobulinemia is a rare B-cell malignancy representing less than 2% of all hematologic malignancies, with an annual incidence of approximately 3-5 cases per million. The disease is characterized by lymphoplasmacytic lymphoma infiltrating bone marrow and lymphoid organs with concurrent IgM monoclonal protein secretion. Many patients are diagnosed asymptomatically through incidental laboratory findings, requiring careful evaluation to distinguish from other B-cell disorders and determine appropriate management strategies. **Case Report:** A 54-year-old female was referred to hematology following discovery of a monoclonal spike on routine serum protein electrophoresis during routine health screening. The patient denied symptoms suggestive of hyperviscosity syndrome including headache, visual disturbances, epistaxis, or neurological

complaints. She reported no B-symptoms (fever, night sweats, weight loss) and had no history of recurrent infections or bleeding tendencies. Physical examination was unremarkable without palpable lymphadenopathy, hepatomegaly, or splenomegaly. The patient appeared well with stable vital signs and no evidence of hyperviscosity syndrome. Laboratory evaluation revealed significant findings on protein studies. Serum protein electrophoresis showed increased gamma fraction (26.3%; normal: 10.7-20.3%) with relatively decreased albumin (47.9%; normal: 52-65%) and albumin/globulin ratio of 0.92. A sharp M-spike was evident in the gamma region. Immunofixation electrophoresis confirmed IgM-kappa monoclonal protein. Quantitative immunoglobulins demonstrated markedly elevated IgM at 27.98 g/L with normal IgG (7.6 g/L) and IgA (2.4 g/L). Beta-2 microglobulin was normal (1.91 mg/L), indicating low tumor burden. Urine free light chain analysis showed normal kappa (3.78 mg/L) and lambda (0.73 mg/L) levels with elevated kappa/lambda ratio (5.18), consistent with kappa-predominant monoclonality. Bone marrow examination revealed 40% cellularity with approximately 25% infiltration by small B-lymphocytes with plasmacytic differentiation organized in 4-5 intertrabecular lymphoid aggregates. Reticulin fibrosis was absent (grade 0/4), and amyloid staining was negative. Immunohistochemistry demonstrated CD20+, CD38+, CD138+ cells with negative CD5, CD23, cyclin D1, LEF-1, and CD56, excluding chronic lymphocytic leukemia/small lymphocytic lymphoma and mantle cell lymphoma. Flow cytometry confirmed CD19+/CD20+/CD45+ clonal B-cell population with CD138+ plasmacytic subset showing intracytoplasmic kappa restriction and negative CD56, consistent with lymphoplasmacytic lymphoma rather than multiple myeloma. Based on the constellation of findings including IgM-kappa monoclonal protein, characteristic bone marrow morphology and immunophenotype, the diagnosis of lymphoplasmacytic lymphoma/Waldenström macroglobulinemia was established. **Discussion:** This case illustrates typical presentation of asymptomatic WM discovered through routine screening. The markedly elevated IgM level (27.98 g/L) without hyperviscosity symptoms demonstrates the variable clinical presentation of WM patients. The characteristic immunophenotype (CD20+/CD38+/CD138+/CD5-/CD23-/CD56-) with intracytoplasmic kappa restriction distinguishes WM from other B-cell disorders. Current management guidelines recommend "watch and wait" approach for asymptomatic WM patients without end-organ damage or symptomatic disease. However, given the markedly elevated IgM level, careful monitoring for hyperviscosity syndrome development is essential. Molecular testing for MYD88 L265P mutation (present in >90% of WM cases) would provide diagnostic confirmation and prognostic information regarding treatment response, particularly to BTK inhibitors. **Conclusion:** Asymptomatic Waldenström macroglobulinemia requires comprehensive diagnostic evaluation to confirm diagnosis and assess disease burden. Despite markedly elevated IgM levels, many patients can be safely observed with regular monitoring, emphasizing the importance of individualized management approaches in this rare but well-characterized lymphoproliferative disorder.

https://doi.org/10.1016/j.htct.2025.106124

OP 15

Primary Extranodal Marginal Zone Lymphoma of the Maxilla with Sphenoid Bone Invasion: Excellent Response to R-CHOP Therapy

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Case Report: A 59-year-old male (weight: 65 kg, height: 168 cm) presented in September 2024 with a progressively enlarging mass in the right maxillary region extending toward the temporal area with sphenoid bone proximity. The patient complained of maxillary distortion and pain but denied B symptoms including fever, night sweats, or weight loss. Physical examination revealed facial asymmetry with palpable right maxillary swelling. Initial biopsy of the maxillary mass demonstrated CD20-positive extranodal marginal zone lymphoma consistent with MALT lymphoma histology. Staging F-18 FDG PET/CT performed on October 4, 2024, revealed a hyperintense soft tissue mass in the right maxillary region with sphenoid bone invasion showing SUVmax 6.81. Additionally, a 16 × 10 mm lymph node in the right level 2 cervical chain demonstrated SUVmax 4.22. No pathological FDG uptake was detected in the thorax, abdomen, or skeletal system, confirming localized disease. Based on the diagnosis of localized EMZL with bone invasion and cervical lymph node involvement, standard R-CHOP chemotherapy was initiated on September 24, 2024. The regimen consisted of rituximab 375 mg/m^2 (day 1), cyclophosphamide 750 mg/m^2 (day 1), doxorubicin 50 mg/m^2 (day 1), vincristine 1.4 mg/m^2 (day 1), and prednisolone 100 mg daily for 5 days. Supportive care included G-CSF (filgrastim) for neutropenia prophylaxis and antiemetics (ondansetron, granisetron). During treatment, the patient developed E. coli pneumonia, which resolved with appropriate antibiotic therapy and supportive care. Despite this complication, the treatment protocol was successfully completed. Interim PET-CT evaluation on December 25, 2024, demonstrated significant metabolic response with maxillary lesion SUVmax decreasing from 6.81 to 2.92, accompanied by dimensional reduction. Cervical lymph node involvement was no longer detectable, yielding a Deauville score of 2, consistent with partial metabolic remission. Follow-up PET-CT after completion of 4 cycles in March 2025 revealed complete disappearance of pathological FDG uptake throughout the body. The maxillary region showed no residual mass formation, maintaining Deauville score 2, confirming complete metabolic remission. The patient tolerated treatment well overall and entered surveillance follow-up without evidence of systemic dissemination or bone marrow involvement. **Discussion:** This case represents a rare presentation of EMZL involving the maxillofacial region with sphenoid bone invasion. The excellent response to standard R-CHOP therapy challenges the traditional approach of radiotherapy alone for localized EMZL, particularly in cases with bone involvement where complete surgical resection may not be feasible. The use of PET-CT for treatment response assessment proved invaluable, providing objective metabolic parameters through

Deauville scoring system. The dramatic reduction in SUVmax values (from 6.81 to undetectable levels) correlated with excellent clinical response. EMZL typically follows an indolent course with favorable prognosis. However, bone involvement may indicate more aggressive behavior, potentially justifying systemic chemotherapy over local treatments. The complete metabolic remission achieved in this case supports the efficacy of R-CHOP in this clinical scenario. **Conclusion:** Primary EMZL of the maxilla with sphenoid bone invasion represents a rare clinical entity that can be successfully treated with standard R-CHOP chemotherapy. PET-CT monitoring using Deauville scoring provides valuable objective assessment of treatment response. This case contributes to the limited literature on optimal management of localized EMZL with bone involvement.

https://doi.org/10.1016/j.htct.2025.106125

OP 16

Double-Expressor Diffuse Large B-Cell Lymphoma of Bone and Soft Tissue in a 29-Year-Old Patient: A Rare Case Report

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Case report: Primary bone lymphoma represents less than 1% of all malignant bone tumors and approximately 3% of extranodal lymphomas. Diffuse large B-cell lymphoma constitutes the most common histological subtype of primary bone lymphoma, typically affecting adults with a slight male predominance. The clinical presentation often mimics primary bone sarcomas, potentially leading to diagnostic delays. Double-expressor lymphomas, characterized by MYC and BCL2 protein co-expression, constitute 20-30% of DLBCL cases and are associated with inferior outcomes compared to standard DLBCL, requiring consideration of intensified treatment regimens. A 29-year-old male presented with several months of progressive upper extremity pain, swelling, and limited range of motion involving the long bones and scapula. The clinical presentation initially raised suspicion for osteosarcoma or soft tissue sarcoma, prompting orthopedic evaluation and excisional biopsy. Macroscopic examination revealed approximately 4 cm of grayish-white to brown tissue fragments submitted for histopathological analysis. Microscopic evaluation demonstrated cellular morphology consistent with lymphoproliferative disease rather than sarcomatous features, prompting comprehensive immunohistochemical evaluation. Immunohistochemical analysis confirmed lymphoid origin with positive LCA (leukocyte common antigen) staining. B-cell lineage was established by strong, diffuse CD20 positivity (80-85% of cells). The tumor demonstrated germinal center B-cell phenotype with BCL6 expression in 80-85% of cells. Critically, MYC expression was present in 40-45% of tumor cells, suggesting double-expressor status pending BCL2 confirmation. The proliferation index was extremely high with Ki-67 staining positive in 80-85% of cells, indicating highly aggressive biology. Negative staining for MyoD1, CD34, S100, and CD3 excluded sarcomatous differentiation and T-cell lymphoma. Based on the constellation of findings, the diagnosis of high-grade diffuse large B-cell lymphoma with germinal center phenotype and suspected double-expressor features was established. The anatomical location involving upper extremity long bones and scapula confirmed primary bone lymphoma classification. Additional molecular studies were recommended including FISH analysis for MYC, BCL2, and BCL6 rearrangements to distinguish between double-expressor and double-hit lymphoma. Comprehensive next-generation sequencing panel evaluation was suggested focusing on prognostically relevant genes including TP53, CDKN2A/B, NOTCH1/2, EZH2, and other lymphoma-associated mutations. **Discussion:** This case illustrates several important clinical and pathological considerations. Primary bone DLBCL in young adults is uncommon and may present diagnostic challenges due to clinical similarity to primary bone sarcomas. The initial clinical suspicion of sarcoma necessitated careful immunohistochemical evaluation to establish correct diagnosis. The double-expressor phenotype with MYC and suspected BCL2 co-expression, combined with extremely high Ki-67 proliferation index (80-85%), indicates aggressive biology requiring intensive treatment approaches. While confirmation of BCL2 expression and FISH analysis for genetic rearrangements remain pending, the current findings suggest consideration of dose-adjusted EPOCH-R or similar intensified regimens rather than standard R-CHOP therapy. The young age of the patient and localized bone involvement may offer favorable prognostic factors despite the aggressive biological features. However, the high proliferation index and suspected double-expressor status necessitate careful treatment planning with multidisciplinary input. **Conclusion:** Primary bone DLBCL with double-expressor features in young adults represents a rare but aggressive entity requiring prompt recognition and intensive treatment. This case emphasizes the importance of comprehensive immunohistochemical evaluation in suspected bone malignancies and highlights the need for molecular characterization to guide optimal therapeutic approaches in high-grade B-cell lymphomas.

https://doi.org/10.1016/j.htct.2025.106126

Myeloma

OP 17

Familial Multiple Myeloma in a Post-Renal Transplant Patient: A Case of Smoldering Multiple Myeloma with Strong Family History

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Introduction: Familial multiple myeloma represents approximately 1-2% of all MM cases, characterized by the occurrence of MM in two or more first-degree relatives. While the exact genetic mechanisms remain unclear, several familial

clustering studies suggest inherited susceptibility genes and shared environmental factors. Immunosuppression following solid organ transplantation may accelerate malignant transformation in genetically predisposed individuals, creating a unique clinical scenario requiring specialized monitoring and management approaches. **Case Report:** A 50-year-old female with a complex medical history presented with fatigue, weakness, and anemia. Her medical background included type 1 diabetes mellitus diagnosed in 1982 at age 8, progression to end-stage renal disease secondary to diabetic nephropathy in 2001, and successful deceased donor kidney transplantation in 2007. She remained on chronic immunosuppressive therapy with mycophenolic acid (Myfortic®) and cyclosporine (Sandimmun®) with stable graft function. The patient's family history was remarkable for multiple myeloma: her mother was alive with confirmed MM diagnosis, and her brother had previously died from MM after receiving treatment. This strong familial clustering placed her in the high-risk category for hereditary MM predisposition. Physical examination revealed pallor consistent with anemia, but no lymphadenopathy, bone tenderness, or other significant findings. Laboratory evaluation demonstrated significant anemia (hemoglobin 7.8 g/dL, hematocrit 26.2%) with normocytic indices (MCV 87 fL). Renal function remained stable post-transplant, and serum calcium was within normal limits. Protein studies revealed elevated beta-2 fraction on serum protein electrophoresis with positive IgG-kappa monoclonal band on immunofixation electrophoresis. Free light chain analysis showed elevated kappa (40.7 mg/L) with kappa/lambda ratio of 1.86. Bone marrow examination demonstrated 3-4% plasma cells with flow cytometry confirming CD138+/CD38+ phenotype and kappa light chain restriction (80% kappa, 20% lambda), establishing clonality. Comprehensive FISH analysis was negative for high-risk cytogenetic abnormalities including p53 deletion, del(13q), t(11;14), and t(4;14). Lumbar MRI revealed disc protrusions without lytic bone lesions. Genetic analysis for FMF mutations was performed given potential inflammatory contributions, showing R202Q heterozygosity and other polymorphisms without pathogenic significance. Based on the presence of IgG-kappa monoclonal protein, 3-4% clonal bone marrow plasma cells, anemia, and absence of hypercalcemia or lytic lesions, the patient was diagnosed with smoldering multiple myeloma. **Discussion:** This case illustrates several important aspects of familial MM. The strong family history with both maternal and sibling involvement suggests significant genetic predisposition, warranting enhanced surveillance protocols. The co-existence of chronic immunosuppression following renal transplantation creates additional complexity, as immunosuppressive agents may accelerate progression from precursor states to overt malignancy.

https://doi.org/10.1016/j.htct.2025.106127

OP 18

CD56-Negative IgA-Lambda Multiple Myeloma with Bortezomib-Induced Severe Cutaneous Reaction: A Case Report

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We report a 51-year-old male with IgA-lambda multiple myeloma who developed severe cutaneous drug eruption following bortezomib treatment. Despite treatment modification to daratumumab-based regimen, the patient achieved complete remission, demonstrating successful management of therapy-related adverse events in CD56-negative myeloma phenotype. Introduction: Multiple myeloma represents approximately 10% of hematologic malignancies, with CD56-negative variants comprising a rare subset associated with distinct clinical characteristics. Bortezomib-containing regimens remain first-line therapy; however, cutaneous adverse reactions can necessitate treatment modifications. We present a case of successful alternative therapy following severe bortezomib-induced skin toxicity. Methods/Case Presentation: A 51-year-old male presented with fatigue and back pain. Laboratory investigations revealed IgA elevation (6.8 g/L) with lambda light chain restriction. Serum protein electrophoresis showed decreased albumin (51.6%) and elevated beta fractions. Bone marrow flow cytometry demonstrated plasma cell population: CD38/CD138 100%, CD45 100%, CD117 79.8%, CD56 7.5% (negative), with 96.7% lambda clonality, confirming IgA-lambda multiple myeloma with CD56-negative phenotype. Staging revealed elevated β2-microglobulin (2.75 mg/L). PET/CT identified metabolically active lytic lesions in T3 vertebra (SUVmax 6.35) and right lumbosacral region (SUVmax 13.41), indicating metabolic progression without hepatosplenomegaly. Initial treatment commenced with VRD (bortezomib, lenalidomide, dexamethasone). After cycle 1, mild erythematous pruritic rash appeared. Following cycle 2, extensive cutaneous eruptions developed. Skin biopsy revealed upper dermal eosinophil-associated perivascular infiltration with erythrocyte extravasation; direct immunofluorescence was negative, consistent with drug-induced eruption. Bortezomib was discontinued, and treatment switched to DRd (daratumumab, lenalidomide, dexamethasone). After 2 DRd cycles, M-protein disappeared, serum and urine immunofixation became negative, and hematologic parameters normalized. Follow-up PET/CT showed no active myeloma lesions, confirming complete remission. Results: The patient achieved biochemical and radiological complete remission within 2 cycles of daratumumab-based therapy following bortezomib-induced severe cutaneous reaction. No significant toxicities were observed with the modified regimen. Discussion: CD56-negative multiple myeloma represents a rare

phenotype with potentially different therapeutic responses. This case demonstrates that severe bortezomib-related cutaneous toxicity can be successfully managed through immediate drug discontinuation and regimen modification. Daratumumab-based therapy proved highly effective, achieving rapid complete remission despite treatment change. The CD38-targeting monoclonal antibody daratumumab has shown excellent efficacy in both treatment-naive and relapsed myeloma. Our case supports its use as an alternative first-line option when proteasome inhibitor toxicity precludes continued bortezomib therapy. Early recognition of severe cutaneous drug reactions and prompt treatment modification are crucial for maintaining therapeutic momentum while ensuring patient safety. This case illustrates successful outcomes can be achieved with appropriate alternative regimens in CD56-negative myeloma variants. Conclusion: CD56-negative IgA-lambda multiple myeloma patients experiencing severe bortezomib-induced cutaneous reactions can achieve excellent outcomes with daratumumab-based alternative therapy. Prompt recognition and management of treatment-related toxicities enables continued effective antimyeloma therapy.

https://doi.org/10.1016/j.htct.2025.106128

OP 19

CLINICAL CHARACTERISTICS AND TREATMENT OUTCOMES IN ADULT ITP PATIENTS: A SINGLE-CENTER EXPERIENCE

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Introduction: Immune thrombocytopenia (ITP) is an acquired autoimmune disorder characterized by increased platelet destruction and reduced platelet production. In adults, the disease course and treatment response vary widely. Real-world single-center data provide valuable insights into management. Therefore, sharing single-center experiences provides valuable insight into real-world data. The present study aimed to evaluate the demographic, clinical, and laboratory characteristics, as well as the treatment approaches and response outcomes of adult ITP patients managed at our hospital. **Methods:** This retrospective study included 25 adult ITP patients followed at Düzce Atatürk State Hospital between October 2024 and August 2025. Data on demographics, laboratory findings, treatments, and responses were collected from patient records. Analyses were performed with SPSS version 25.0., Türkiye **Results:** The mean age of the patients was 57.5 $\pm$ 15.6 years, and 80% were female. The median platelet count at diagnosis was 11,000/mm^3 (IQR 13,000). Whereas 76% of patients had no bleeding symptoms, 24% presented with ecchymosis and mucosal bleeding. First-line treatment consisted mainly of corticosteroids (prednisolone in 96% and dexamethasone in 4%). Response rates were 36% complete, 36% partial, and 28% no response. IVIG was administered to 52% of patients, with 61.6% achieving a response and 38.4% showing no response. In second-line therapy, 48% of patients received rituximab, with complete response observed in 67%, partial response in 25%, and no response in 8%. Eltrombopag was used in 25% of patients, yielding complete or partial responses in 80% and no response in 20%. Romiplostim was given to one patient (4%) with partial response. Two patients (8%) underwent splenectomy, and both responded favorably. Reported complications included *H. pylori*infection (4%), ischemic stroke with colon carcinoma (4%), tick bite (4%), pulmonary embolism (4%), and portal vein thrombosis (4%). No complications were observed in 80% of patients. **Conclusion:** Discussion/Conclusion:This study highlights the heterogeneity of clinical features and treatment outcomes in adult ITP. Corticosteroids provided responses in most patients, though nearly one-third remained refractory. IVIG offered limited benefit. Rituximab and eltrombopag produced favorable results, while romiplostim was less used. Both splenectomized patients responded well, supporting its role as a durable option despite declining frequency.Complications were uncommon but clinically significant, stressing the need for close monitoring. In conclusion, first-line therapies often show limited effectiveness, requiring second-line strategies. Rituximab and TPO receptor agonists were moderately effective, and splenectomy remains a valid option. These findings emphasize the importance of individualized treatment in adult ITP management.

https://doi.org/10.1016/j.htct.2025.106129

Transfusion Medicine and Apheresis

OP 20

EFFECTİVE TREATMENT OF LONG-TERM NEUTROPENİA AND SEPSİS WİTH GRANULOCYTE TRANSFUSİON İN PATİENTS UNDERGOİNG ALLOGENEİC HEMATOPOİETİC STEM CELL TRANSPLANTATİON

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Objective: Allogeneic hematopoietic stem cell transplantation (allo-HSCT) is vital in the treatment of high-risk hematologic cancers. Due to the immune system reconstitution process in the post-transplant period, infections are a leading cause of mortality and morbidity. Therefore, we aimed to investigate the efficacy of granulocyte transfusion (GT) therapy in patients who developed febrile neutropenia during allo-HSCT **Methodology:** This retrospective study included 22 patients who underwent allo-HSCT at the Erciyes University Bone Marrow Transplantation Unit between January 2016 and January 2024 and developed febrile neutropenia. Patient

characteristics were recorded. GT was administered to patients with an absolute neutrophil count (ANC) $<0.5 \times 10^3/\mu L$ for at least three days, evidence of bacterial and/or fungal infection, and no response to appropriate antimicrobials for at least 48 hours. **Results:** The median age was 42 years (min-max, 19-66 years). The majority of patients were diagnosed with acute myeloid leukemia (AML) (50%)(11/22). The median CRP value was 168.5 mg/dl (min-max, 31.1-360 mg/dl). In 40.9 % of patients who received GT, their primary disease was in complete remission, while in 59.1 %, their primary disease was relapse. The infection etiologies included pneumonia (n=5), sepsis (n=2), pneumonia and sepsis (n=11), pneumonia + sepsis + catheter-associated infection (n=4), catheter-associated infection + mucositis (n=1), and abscess (n=1). Each patient received a median of 3 GTs (min-max, 1-6). The median transfused granulocyte dose per transfusion was 3.5×10^{10} (min-max, 0.8-9.4 $\times 10^{10}$). The median dose transfused, calculated based on the recipient's body weight, was 5.1×10^8/kg (min-max, 0.8-17 $\times 10^8$/kg). On average, the median number of granulocytes transfused per patient was 5.3×10^8/kg (min-max, 1.9-11.3 $\times 10^8$/kg). The median time from HSCT to the first GT was 192 days (min-max, 50-795 days). The median duration of fever before GT was three days (min-max, 2-6 days), and the time until the fever defervescence was 2 days (min-max, 1-5 days). The median duration of neutropenia before GT is 25 days (min-max, 8-30 days). After GTX treatment, A favorable response was observed in 16 of 24 infection episodes (66.7%) regarding the resolution of infections. In 4 of the 8 infection episodes where the infection did not resolve, the patient also had a relapse of the disease. In 5 of 12 infection episodes that required intensive care, the need for intensive care was eliminated after GT. A statistically significant difference was found between the time of GT initiation and the ANC, TLC, and PLT counts on the fourth-day post-GT (p =0.001, p=0.001, p=0.003, separately for ANC, TLC, and PLT). The median follow-up in our cohort of patients is 600 days. The 30-day and 100-day OS were 67.7% and 50%, respectively. A mortality rate by day-28 was 3.8% and mortality rate by 100 was 19.2%. Acute, chronic GVHD, and CMV reactivation were not observed. **Conclusion:** GT therapy may be effective in many critically ill patients with prolonged and profound neutropenia. It may be more beneficial in select patients, as it provides more time to overcome infections resistant to broad-spectrum antibiotics. Larger randomized trials are needed to confirm the effectiveness of GT in such patients.

https://doi.org/10.1016/j.htct.2025.106130

OP 21

CATATONIA FOLLOWING IFOSFAMIDE CHEMOTHERAPY IN A PATIENT WITH HISTIOCYTIC SARCOMA: A RARE NEUROPSYCHIATRIC COMPLICATION

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Introduction: Histiocytic sarcoma (HS) is a rare, aggressive malignancy of monocyte–macrophage lineage, typically presenting with extranodal disease and lacking B- or T-cell markers [1]. Because of its rarity, there is no standard treatment, though salvage regimens such as ICE (ifosfamide, carboplatin, etoposide) have demonstrated some benefit. Ifosfamide, a DNA-alkylating prodrug metabolized by hepatic CYP3A4 and CYP2B6, is associated with central nervous system (CNS) toxicity in 10–30% of patients [2,3]. Encephalopathy is the most common presentation, while catatonia—characterized by stupor, mutism, negativism, posturing, and waxy flexibility—is rarely reported in oncology patients [4]. **Case Presentation:** A 27-year-old male with stage IV HS, confirmed by biopsy of an 80 × 70 mm terminal ileum mass, was admitted for ICE chemotherapy. On day three, he developed acute psychomotor symptoms including stupor, mutism, and negativism. The Bush–Francis Catatonia Rating Scale (score 7) and Kanner Catatonia Screening Instrument (score 4) confirmed retarded-type catatonia. Neurological evaluation (cranial CT, diffusion-weighted MRI) and laboratory studies were unremarkable. Vital signs remained stable. He was treated with intravenous diazepam 10 mg every 8 hours (two doses total), leading to full resolution of catatonic symptoms. The patient was discharged clinically stable. **Conclusion:** Discussion Ifosfamide-induced neurotoxicity typically appears within 48 –72 hours, mediated by toxic metabolites such as chloroacetaldehyde that disrupt mitochondrial function and neurotransmission [2,3]. While encephalopathy is well-documented, catatonia is extremely rare and underrecognized. In this case, the temporal relationship to ifosfamide, absence of structural CNS pathology, and rapid benzodiazepine response strongly support ifosfamide-induced catatonia. Similar observations have been described rarely; Gupta et al. [5] reported an analogous case in lymphoma. Benzodiazepines remain first-line therapy, often producing rapid resolution, even in drug-induced catatonia [6].Conclusion This case highlights catatonia as a rare neuropsychiatric complication of ifosfamide. Recognition of such unusual adverse effects is critical, as early diagnosis and benzodiazepine treatment can prevent delays in cancer therapy and improve outcomes.

https://doi.org/10.1016/j.htct.2025.106131

Stem Cell Transplantation

OP 22

RESULTS OF AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANTATION IN REFRACTORY MULTIPLE SCLEROSIS: TWO CASE REPORTS

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Multiple sclerosis (MS) is a chronic, inflammatory, demyelinating disease of the central nervous system. Being an autoimmune disease, MS usually begins in young adulthood and may lead to permanent neurological damage over time. In the pathogenesis of the disease, immune responses mediated by T and B lymphocytes play a central role, causing damage to myelin and axonal structures[1]. Clinically, the most common form is relapsing-remitting MS (RRMS), while in some cases a transition to the secondary progressive MS (SPMS) form is observed over time[2]. The Expanded Disability Status Scale (EDSS) is widely used to assess neurological impairment in MS patients. This scale ranges from 0 to 10, with 0 indicating no neurological deficit. Higher scores represent greater neurological impairment. Disease-modifying therapies (DMTs), which modulate the immune system, are used in the treatment of MS. Major DMT agents include fingolimod, natalizumab, ofatumumab, ocrelizumab, siponimod, alemtuzumab, and interferon beta[3]. Despite high-efficacy treatments, a subset of patients continue to experience relapses and disease progression. Autologous hematopoietic stem cell transplantation (AHSCT) is a therapeutic option that aims to "reset" the immune system (immune reconstitution) by administering high-dose immunosuppressive therapy followed by reinfusion of the patient's own hematopoietic stem cells[4]. Recent prospective studies have demonstrated that AHSCT prevents relapses and ensures disease stabilization, especially in RRMS cases with high inflammatory activity and resistance to conventional therapies[5]. However, in progressive MS patients, while disease stabilization may occur, functional recovery remains limited. During the AHSCT process, hematopoietic stem cells are first mobilized into peripheral blood using cyclophosphamide and/or G-CSF, collected via apheresis, and cryopreserved with dimethyl sulfoxide (DMSO). Subsequently, high-dose chemotherapy (e.g., BEAM or CY+ATG regimen) is administered as a lymphoablative conditioning treatment, followed by reinfusion of the previously collected autologous stem cells[6]. In this study, we present two RRMS patients with refractory disease who underwent AHSCT in our clinic. Case-1: The first case is a 33-year-old female patient diagnosed with MS in 2018. She had been treated with DMT agents including ocrelizumab, without significant clinical response. With an EDSS score of 5, she was classified as RRMS, and AHSCT was planned. Mobilization was achieved with cyclophosphamide (2.4 g/m^2) and G-CSF. Hematopoietic stem cells were collected by apheresis and cryopreserved with DMSO. Following administration of the LEAM conditioning regimen (lomustine, etoposide, cytarabine, melphalan), a total of 4.54×10^6/kg autologous stem cells were reinfused on 05.06.2025. Neutrophil and platelet engraftment occurred on day 11 post-transplant. During the 3-month follow-up, no relapse occurred, and neurological status remained stable. **Case-2:** The second case is a 47-year-old male patient diagnosed with MS in 2014. He had received DMT agents including ocrelizumab and siponimod, without adequate response. With an EDSS score of 7 and progressive walking disability for the last 2 years, the patient was classified as SPMS, and AHSCT was planned. Mobilization was performed with cyclophosphamide (2.4 g/m^2) and G-CSF. Stem cells were collected via apheresis and cryopreserved with DMSO. After the LEAM conditioning regimen, a total of 5.19×10^6/kg autologous stem cells were reinfused on 19.01.2025. Neutrophil and platelet engraftment occurred on day 12 post-transplant. During the 8-month follow-up, no relapse occurred, and neurological status remained stable. **Discussion:** AHSCT has emerged as an effective treatment option for RRMS cases with high inflammatory activity refractory to conventional therapy. Studies have shown that AHSCT reconstitutes the immune system, thereby preventing relapses, avoiding new lesion development, and slowing neurological disability progression[7,8]. Clinical studies indicate that AHSCT can suppress MS disease activity in approximately 70–80% of patients for up to 5 years. This response rate is higher than with any other available MS treatment. While treatment-related mortality was reported as 3.6% in studies before 2005, this rate has decreased to approximately 0.3% in more recent studies[4]. A meta-analysis published in 2017 evaluated 764 MS patients who underwent AHSCT between 1995 and 2016, reporting event-free survival of 67%[9]. Another meta-analysis published in 2022, including 4,831 MS patients, found event-free survival in 68% of cases[10]. According to EBMT guidelines, cyclophosphamide (2–4.5 g/day) combined with G-CSF (5–10 μg/kg) is most commonly recommended for mobilization. Conditioning regimens typically include BEAM+ATG or cyclophosphamide+ATG[11]. In our cases, mobilization was performed with cyclophosphamide (2.2 g/day) followed by G-CSF (10 μg/kg). LEAM was used as the conditioning regimen, while ATG was not administered. It has been reported that AHSCT is more effective than DMTs in stabilizing neurological status, with ongoing trials continuing to evaluate this comparison[12]. Conclusion: AHSCT has shown favorable outcomes, particularly in RRMS patients. Large-scale analyses have demonstrated disease-free survival rates exceeding 60%. With advances in stem cell therapy, transplant-related mortality has significantly decreased. Therefore, AHSCT represents a safe and effective therapeutic option in RRMS.

https://doi.org/10.1016/j.htct.2025.106132

OP 23

VITREORETINAL INVOLVEMENT IN NASAL CAVITY B-CELL LYMPHOMA: A RARE FORM OF RELAPSE

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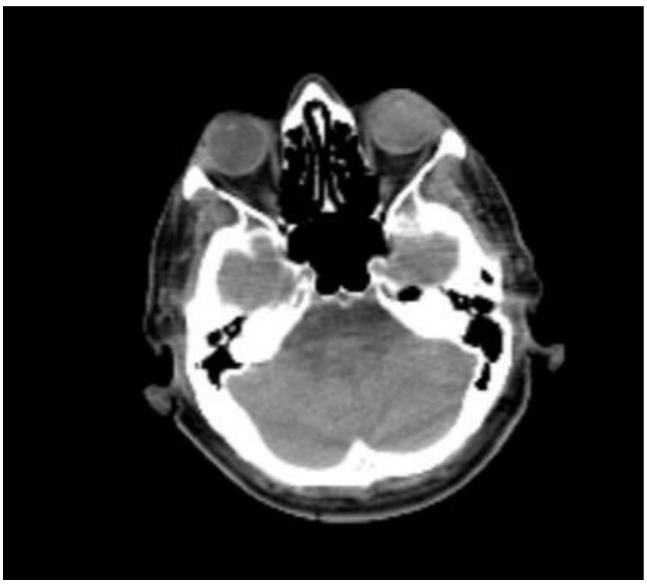
Introduction: Non-Hodgkin lymphomas are malignant neoplasms of lymphoid tissue, and a subset present with extranodal involvement. The head and neck region represents one of the clinically relevant localizations. Sinonasal B-cell lymphomas are a rare subtype, most often manifesting as diffuse large B-cell lymphoma (DLBCL), and typically show aggressive

clinical behavior. Relapses most frequently involve cervical lymph nodes, the orbit, and the central nervous system. Ocular involvement is rare, usually presenting as orbital masses or ocular adnexal lymphoma. Vitreoretinal infiltration is even more unusual and has been described only infrequently. In this case report, we present an elderly male patient with nasal cavity B-cell lymphoma who developed relapse with vitreoretinal involvement, aiming to emphasize the diagnostic and therapeutic aspects of this rare condition. **Case Presentation:** A 71-year-old male was diagnosed three years earlier with nasal cavity B-cell lymphoma. Bone marrow biopsy at diagnosis showed no systemic involvement. He received four cycles of R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) and achieved complete remission. Three years later, he presented with decreased vision in the left eye. Orbital MRI showed tortuosity of the optic nerve and slight widening of the perioptic space (Figure 1). Cranial MRI revealed only age-related changes. Cytology and flow cytometry of vitreous fluid demonstrated CD20 and CD79a positivity with high proliferative activity, consistent with B-cell neoplasia. PET-CT revealed limited FDG uptake (SUVmax 5.02) in the anterior aspect of the left orbit (Figure 2), with no additional systemic involvement. Based on his disease history, systemic high-dose methotrexate combined with cytarabine and intrathecal therapy was initiated. Radiotherapy was also considered. He was referred to another specialized center for possible intravitreal chemotherapy. Despite systemic treatment, follow-up revealed that the patient had died. **Discussion and Conclusion:** Sinonasal B-cell lymphomas are uncommon, most often exhibiting DLBCL histology with aggressive clinical features. Relapses most frequently involve cervical nodes, orbital structures, or the central nervous system. Although orbital disease is recognized, vitreoretinal infiltration is exceedingly rare and has been reported in less than 5% of cases in large series. Diagnosis is challenging, as ocular involvement may present with non-specific symptoms such as visual impairment or vitreous opacities, requiring cytology, immunophenotyping, and immunohistochemistry of vitreous samples for confirmation. Therapeutic options include systemic high-dose methotrexate and cytarabine, with intrathecal therapy commonly added for central nervous system prophylaxis. Radiotherapy may contribute to local control in orbital disease. Intravitreal chemotherapy has also been described, most often with methotrexate, and rituximab has been used in selected cases. The prognosis of ocular involvement is poor, with median survival reported between 12 and 36 months and a high risk of central nervous system relapse. This case illustrates that vitreous infiltration may represent a relapse manifestation of sinonasal B-cell lymphoma and highlights the importance of careful evaluation of ocular symptoms in such patients.



https://doi.org/10.1016/j.htct.2025.106133

HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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Poster Abstracts

PP 01

CD180 EXPRESSİON ON ACUTE MYELOİD LEUKEMİA BLASTS

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Objective: CD180 is a Toll-like receptor expressed primarily in B-cell groups and has been identified as a potential therapeutic target in diseases such as B-cell non-Hodgkin lymphoma. However, the expression profile of CD180 and its clinical significance in patients with Acute Myeloid Leukemia (AML) remain largely uncharacterized. While the only existing study in the literature has reported high CD180 expression in a subset of AML samples, these findings have not been validated by other studies. Therefore, the objective of this study is to determine the presence and level of CD180 expression on leukemic blasts at the time of diagnosis in a cohort of AML patients. **Methodology:** Between November 15, 2024 and December 31, 2024, five patients diagnosed with Acute Myeloid Leukemia at the Ege University Immunology Laboratory were included in this study.Informed consent was obtained from all patients. Peripheral blood or bone marrow samples were collected at the time of diagnosis. Flow cytometry was used to determine the percentage of leukemic blasts and to evaluate the expression of CD180 on these cells. Demographic, clinical, and molecular data obtained from patient records were used for patient follow-up analyses, Türkiye. **Results:** In this study, data from a total of five AML patients, including four newly diagnosed and one with refractory disease, were evaluated. The median age of the cohort was 65 years (range: 20–66), and the patients' blast percentages ranged from 50% to 95%. Initial laboratory findings included a White Blood Cell (WBC) count ranging from 1.45 to 87.92 $\times$ 10^9/L, a platelet count from 25 to 206 $\times$ $10^3/\mu$L, and a hemoglobin (Hb) value from 6.8 to 12.2 g/dL. Flow cytometry analysis revealed that very low-density CD180 expression was present on leukemic blast cells in all five patients examined. According to molecular and cytogenetic data, three patients (ASXL1 mutation and BCR:: ABL1 fusion gene) were included in the ELN Adverse Risk Group, while the remaining two patients were included in the ELN Intermediate Risk Group. Based on clinical follow-up results, one patient in the adverse risk group was deceased after 2 months, and another was deceased after 27 months. All patients in the intermediate risk group were alive at the end of an 8-month follow-up period. **Conclusion:** In conclusion, our findings demonstrate the low-density of CD180 expression on leukemic blasts in all five AML patients examined. This observation contradicts the findings of the only study in the literature. Therefore, further studies involving larger patient groups are needed to accurately determine the presence of CD180 on AML blasts.

https://doi.org/10.1016/j.htct.2025.106135

PP 02

IMPAIRED COAGULATION AT DIAGNOSIS AND INDUCTION PHASE OF ACUTE LYMPHOBLASTIC LEUKEMIA

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Objective: Disseminated intravascular coagulation (DIC) has been reported in 8-25% of acute lymphoblastic leukemia (ALL). Coagulopathy may accompany leukemia at diagnosis and during the induction phase and negatively impact prognosis. However, recognizing coagulopathy during this period can be challenging due to the accompanying bone marrow failure. Furthermore, distinguishing between asparaginase-associated hypofibrinogenemia and disseminated intravascular coagulation is challenging in clinical practice. It is important to determine which patients are at clinical risk and how they should be managed. **Methodology:** Fifty patients with

2531-1379/

ALL followed at our center, diagnosed between 16. August.2019 and 17.June.2025 were retrospectively evaluated. The relationship between the patients' coagulation parameters and clinical data at diagnosis and during the induction period was investigated. **Results:** The median age at diagnosis was 39 (18-79), and the majority of the patients were male (31/19). Nine of the patients had T-ALL, 17 had Ph-positive B-ALL, and 24 had Ph-negative B-ALL. The median follow-up duration was 15.3 (0.2-71.9) months. At the time of diagnosis, mild hypofibrinogenemia (<200 mg/dL) was detected in 8 (17%) and severe hypofibrinogenemia (<100 mg/dL) was detected in 2 (4%) patients. During the induction phase, mild hypofibrinogenemia was detected in 36 (72%) and severe hypofibrinogenemia was detected in 11 (22%) patients. No statistically significant association was found between mild or severe hypofibrinogenemia at diagnosis and induction phase with age, gender, and ALL subtype. Fibrinogen level at diagnosis was lower in patients who developed mild hypofibrinogenemia at induction phase compared to those who did not (median 278 vs. 453) (p=0.004). In patients who received an asparaginase-containing induction regimen, both mild hypofibrinogenemia (92.9% vs. 63.9%) and severe hypofibrinogenemia (42.9% vs. 13.9%) were observed more frequently at induction phase (p=0.039 and p=0.036, respectively). In patients with mild hypofibrinogenemia at induction, the requirement for cryoprecipitate or fresh frozen plasma (FFP) was higher than in patients with normal fibrinogen levels (55.6% vs. 21.4%, p=0.030). D-dimer levels at diagnosis were higher in Ph-positive B-ALL than in Ph-negative B-ALL (median 15 vs. 4.3; p=0.030). D-dimer levels at induction phase were also higher in patients requiring cryoprecipitate or FFP (median 14.6 vs. 7.1; p=0.07). Early mortality (in the first 30 days) was 1 (2%), and was not associated with bleeding or thrombosis. No statistically significant association was found between age, gender, disease subtype, fibrinogen and D-dimer levels at diagnosis and induction phase, asparaginase use, or cryoprecipitate or FFP requirement and overall survival. **Conclusion:** In this study, we demonstrated that hypofibrinogenemia, while observed at diagnosis of ALL, is particularly prevalent during the induction phase. Hypofibrinogenemia at induction phase is determined by the fibrinogen levels at diagnosis and the use of asparaginase-containing regimens. Following, consumption of the blood products containing coagulation factors determined by the hypofibrinogenemia at induction phase. Although coagulopathy increased the frequency of blood product use, it was observed that it did not negatively impact patient survival. Clinical guidelines should be reviewed for newly diagnosed ALL patients with and without asparaginase use and updated based on large-scale studies.

https://doi.org/10.1016/j.htct.2025.106136

PP 03

RAM-like Acute Myeloid Leukemia in an Elderly Patient: A Rare Phenotypic Variant

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Introduction: Acute myeloid leukemia (AML) is a heterogeneous hematologic malignancy with diverse morphologic and immunophenotypic subtypes. The RAM (rapidly maturing) phenotype is a rare and poorly characterized variant, initially described in pediatric acute leukemia, but has also been identified in older adults (Wells et al., 2018). It is typically defined by CD45^dim, CD34−, CD117+, CD33++, and aberrant CD7 expression, with aggressive clinical behavior and poor prognosis (Nguyen et al., 2021). Here, we present a case of elderly-onset AML with RAM-like immunophenotypic features. **Methods:** A 81-year-old female presented with pancytopenia and recurrent subdural hemorrhages. Flow cytometry revealed CD45^dim, CD34−, CD117+, CD33++, and aberrant CD7+ blasts, consistent with RAM-like AML. Cytogenetic analysis showed no recurrent AML-defining translocations by FISH. Comprehensive molecular testing, including FLT3, NPM1, and CEBPA, was negative. Clinical frailty assessment demonstrated a high CIRS score, limiting intensive treatment options. **Results:** Bone marrow examination confirmed AML with RAM-like immunophenotype. Given the patient's age, comorbidities, and recurrent intracranial hemorrhages, intensive induction chemotherapy was contraindicated. Supportive care and hypomethylating agent-based therapy were considered but deferred due to poor functional status and ongoing hemorrhagic risk. The patient remained under best supportive care, including transfusions and infection prophylaxis. Prognosis was explained to the family as extremely poor, consistent with published literature (Al-Kershi et al., 2023). **Discussion:** RAM-like AML represents a high-risk immunophenotypic subset, characterized by treatment resistance and inferior outcomes (Wells et al., 2018). Most reported cases occur in children; however, adult and elderly cases are being increasingly recognized (Nguyen et al., 2021). This case highlights the diagnostic challenge and limited therapeutic options in elderly patients, particularly when performance status and comorbidities preclude intensive therapy. Early recognition through flow cytometry is essential for risk stratification and counseling. **Conclusion:** We report an elderly female with AML exhibiting RAM-like phenotype, an aggressive and rare immunophenotypic variant. Awareness of this entity is important for hematologists, as it informs prognosis and guides therapeutic decision-making, even when curative approaches are not feasible.

https://doi.org/10.1016/j.htct.2025.106137

PP 04

Incidentally Detected Precursor B-Cell Acute Lymphoblastic Leukemia in a Patient Monitored for Myocarditis: A Case Report

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Introduction: Hematologic abnormalities in young adults are frequently attributed to infections or reactive processes, yet concurrent cytopenias and lymphocytosis may herald

malignant conditions. Acute lymphoblastic leukemia (ALL) is uncommon in adults but should be considered in the presence of persistent unexplained hematologic abnormalities (Inaba et al., 2021). Here, we present a 29-year-old male patient initially hospitalized with myocarditis, in whom incidental hematologic findings prompted further investigation and ultimately led to the diagnosis of precursor B-cell acute lymphoblastic leukemia (B-ALL), Türkiye. **Methods:** The patient, with comorbid obesity, hyperlipidemia, prediabetes, and coronary artery disease, was admitted to the coronary intensive care unit due to myocarditis. Laboratory evaluation revealed neutropenia, lymphocytosis, anemia, and severe thrombocytopenia. Hematology consultation was obtained, and systematic infectious and metabolic workup was performed, including TORCH, hepatitis panel, HIV, brucella, and syphilis, all of which were negative. Nutritional deficiencies were excluded. Bone marrow aspiration and biopsy were conducted to clarify the unexplained cytopenias. **Results:** Peripheral smear showed marked lymphocytosis. Bone marrow evaluation demonstrated precursor B-cell blasts consistent with B-ALL. The patient had a prior history of episodic polycythemia treated with phlebotomy at an external center, but no prior evaluation for myeloproliferative neoplasm was documented. Physical examination was remarkable for obesity and cervical lymphadenopathy. Despite the confirmed diagnosis of B-ALL, the patient declined further therapy and left the clinic against medical advice. **Discussion:** This case underscores the diagnostic challenge posed by overlapping cardiac and hematologic findings. While myocarditis can present with systemic manifestations that mimic hematologic disorders, persistent cytopenias with lymphocytosis should prompt early hematology evaluation (Terwilliger & Abdul-Hay, 2017). Adult B-ALL often carries a poor prognosis compared to pediatric cases, and early initiation of therapy is critical to improving outcomes (Kantarjian et al., 2017). Moreover, this case highlights the importance of considering hematologic malignancy in young adults with incidental laboratory abnormalities, even in the context of alternative explanations such as infection or cardiac disease. Systematic diagnostic workup, including bone marrow biopsy, remains the gold standard for definitive diagnosis (Hunger & Mullighan, 2015). **Conclusion:** We report a young adult male followed for myocarditis in whom incidental hematologic abnormalities revealed underlying precursor B-cell ALL. This case emphasizes the necessity of maintaining a broad differential diagnosis in young adults with unexplained cytopenias and lymphocytosis, and of not delaying bone marrow evaluation. Prompt recognition is essential for timely treatment initiation and improved patient outcomes.

https://doi.org/10.1016/j.htct.2025.106138

Adult Hematology Abstract Categories

Chronic Leukemias

PP 05

A CASE OF CHRONIC LYMPHOCYTIC LEUKEMIA WITH CENTRAL NERVOUS SYSTEM INVOLVEMENT

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Although chronic lymphocytic leukemia (CLL) is very common in adults, complications associated with CLL involvement of the nervous system are very rare (1). The case report describes a CLL patient with leptomeningeal and orbital involvement. There is no standard treatment protocol for this pattern of involvement. Our patient received maintenance therapy with ibrutinib after chemoimmunotherapy, and her neurological symptoms completely resolved. CASE: A 48-year-old female housewife was diagnosed with CLL in 2018. The 17p deletion-negative patient is being followed without treatment. She has no known history of the disease. The patient presented with complaints of decreased vision, severe headache, and double vision. Her symptoms had been present for approximately two weeks. Laboratory tests revealed WBC: 156 10e3/uL, HBG: 9.2 g/dL, platelets: 188 10e3/uL, lymphocytes: 128.41 10e3/uL, creatinine: 1.07 mg/dL, urea: 48 mg/dL, LDH: 534 U/L, sodium: 134 mmol/L, potassium: 3.38 mmol/L, and sedimentation rate: 38 mm/h. Imaging revealed a liver of 180 cm and a spleen of 180 cm. Additionally, multiple lymphadenomegaly was detected in the axillary, inguinal and neck regions.An ophthalmology consultation was performed for the patient's complaints of headache, decreased vision, and diplopia. The evaluation revealed bilateral grade 3 papilledema. Detailed cranial imaging revealed no pathology during the neurological evaluation. Cerebrospinal fluid (CSF) sampling was performed. Results for neuromyelitis optica and other neurological disorders were negative. Results for meningitis were also negative. Direct microscopic examination of the CSF revealed widespread lymphocytosis consistent with CLL. The patient's headache and visual symptoms were interpreted as CLL neurological involvement. A course of R-FC was administered. A follow-up fundus examination after the course revealed resolution of the patient's grade 3 bilateral papilledema, and her headache complaints significantly decreased. Ibrutinib was initiated as maintenance therapy and the patient was discharged for routine follow-up visits. Conclusion: DISCUSSIONOur patient

presented with neurological symptoms resulting from intraorbital and leptomeningeal disease. Leptometrial disease as the initial manifestation of CLL is extremely rare (2). A large-scale CLL autopsy study reported brain and leptomeningeal involvement in 20% and 8% of cases, respectively. This study demonstrated that CNS involvement in CLL patients is underdiagnosed. Another study revealed orbital involvement in 14 of 97 autopsies (14%) of CLL patients (3). None of the studies demonstrated a correlation between leptomeningeal spread and CLL stage or duration. Standard risk factors for CNS involvement in CLL have not been systematically investigated (4).Clinical manifestations of CNS involvement in CLL are heterogeneous and include headache, cranial nerve palsies, cerebellar findings, visual problems, and motor or sensory deficits. Imaging studies do not provide sufficient evidence of CNS involvement in CLL. The diagnosis is usually confirmed by lumbar puncture. In the present case, the CSF sample showed widespread lymphocytes. In this case, a CSF sample contaminated with peripheral blood leukocytes as a result of a traumatic lumbar puncture is unlikely, as no erythrocytes and no myeloid cells were observed in the sample. The optimal treatment for CLL patients with CNS involvement is unclear. Most such patients receive treatment that includes intrathecal chemotherapy, either with or without radiotherapy or systemic chemotherapy. The most commonly used intrathecal chemotherapy agents are methotrexate, cytarabine, and corticosteroids, used alone or in combination. Our patient is currently a high-risk patient and responded well and rapidly to chemoimmunotherapy. In general, the prognosis for patients with CLL with neurological involvement is poor. Systemic chemoimmunotherapy is the most effective treatment for rapid symptom resolution in this patient group.

https://doi.org/10.1016/j.htct.2025.106139

PP 06

A CASE OF HAIRY CELL LEUKEMIA ASSOCIATED WITH CD10 EXPRESSION: THE SIGNIFICANCE OF AN ATYPICAL IMMUNOPHENOTYPIC PROFILE

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Case report: Hairy cell leukemia (HCL) represents a distinct subtype of mature B-cell lymphoproliferative disorders, predominantly affecting older individuals, with a median age of onset around 55 years. The disease exhibits a marked male predominance, with a male-to-female ratio of approximately 5:1. The spleen and bone marrow are the primary sites of involvement, and the majority of patients present with splenomegaly and pancytopenia at the time of diagnosis. Flow cytometric immunophenotyping (FCI) is an indispensable tool for the definitive diagnosis of HCL. The disease exhibits a characteristic immunophenotypic profile, defined by the absence of markers such as CD5, CD10, and CD23, and the presence of high-level or aberrantly bright expression of CD20, CD22, CD11c, and CD25. Furthermore, HCL cells are typically positive for CD103 and CD123. The current case report presents an atypical case of HCL with unexpected CD10 expression. A 36-year-old male with no comorbidities presented with a 1.5-month history of fatigue and exertional dyspnea, as well as B-symptoms. Physical examination revealed a palpable spleen in the left upper quadrant, with a dull percussion note over Traube's space, supporting the presence of splenomegaly. Initial complete blood count showed pancytopenia: a white blood cell count of 6210/μL (neutrophils: 190/μL; lymphocytes: 3120/μL; monocytes: 2880/μL), a hemoglobin level of 9.1 g/dL, and a platelet count of 56,000/μL. Further laboratory investigations for the etiology of anemia showed an iron level of 67 μg/dL, a transferrin saturation of 25%, a folate level of 9.4 ng/mL, and a vitamin B12 level of 270 pg/mL. A contrast-enhanced whole-body computed tomography (CT) scan revealed no pathological lymphadenopathy, but the spleen was measured at 140 $\times$ 60 mm. Peripheral blood smear analysis suggested the presence of atypical lymphoid cells with abundant cytoplasm. For a definitive diagnosis, a bone marrow biopsy was performed, and flow cytometry was conducted. Flow cytometry on the bone marrow samples demonstrated an increased percentage of B-lineage lymphocytes. These cells were positive for CD19, lambda light chain, CD20, CD22, FMC7, CD79a, CD27, CD11c, CD25, CD103, and CD10. HCL is a distinct lymphoproliferative disorder with an established immunophenotype essential for diagnosis. Our case, however, demonstrates atypical immunophenotypic features, posing a diagnostic challenge due to unexpected CD10 expression. While this occurrence is rare, a previous study identified aberrant CD10 expression in approximately 10% of HCL cases, suggesting such instances are not isolated. Although CD10 is a hallmark of other B-cell malignancies, such as follicular and Burkitt lymphomas, its presence should not automatically exclude HCL. In our case, the diagnosis was confirmed by the co-expression of the entire classic HCL marker panel. This highlights the crucial role of a comprehensive immunophenotyping panel, rather than reliance on a single marker, especially when faced with suboptimal morphological features or limited cell numbers. This case emphasizes the importance of expanding the differential diagnosis for CD10(+) B-cell lymphomas to include HCL. In conclusion, our case serves as a valuable reminder that the immunophenotypic profile of HCL can be more diverse than typically understood. Further research into the clinical and prognostic implications of this rare CD10 expression is warranted.

https://doi.org/10.1016/j.htct.2025.106140

Adult Hematology Abstract Categories

Chronic Myeloproliferative Diseases

PP 07

BCR-ABL1 MINOR (P190, E1A2) POSITIVE CHRONIC MYELOID LEUKEMIA: A RARE CASE REPORT

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INTRODUCTION: Chronic myeloid leukemia (CML) is a myeloproliferative neoplasm characterized by the BCR-ABL1 fusion gene and accounts for approximately 15–20% of all leukemias. While the majority of cases harbor the p210 (major) transcript, the p190 (minor, e1a2) transcript is exceedingly rare, representing only about 1–2% of CML cases. This subtype may exhibit distinct hematologic features compared to p210-positive cases, particularly peripheral monocytosis and marked splenomegaly. In the literature, responses to tyrosine kinase inhibitor (TKI) therapy in p190-positive CML have been reported to be variable, and long-term outcomes are described only in limited case reports. Therefore, presenting the clinical and laboratory features of this uncommon subtype is of particular importance. **CASE PRESENTATION:** A 23-year-old female patient presented with complaints of fatigue and dyspeptic symptoms. Complete blood count revealed WBC: $70 \times 10^3/\mu$L, neutrophils: $58.5 \times 10^3/\mu$L, monocytes: $7.38 \times 10^3/\mu$L, hemoglobin: 10.4 g/dL, and platelets: $871 \times 10^3/\mu$L. Abdominal ultrasonography demonstrated splenomegaly with a longitudinal diameter of 175 mm. Peripheral blood smear and bone marrow aspiration-biopsy findings were consistent with chronic myeloid leukemia, with blasts reported as <5%, and the overall evaluation was described as a "myeloproliferative neoplasm." Molecular testing showed negative results for the major BCR-ABL1 transcript, whereas the minor BCR-ABL1 (e1a2) transcript was detected at 3.4%. The patient was started on first-line therapy with imatinib. At the third month of treatment, BCR-ABL1 (minor) was 10.51%, although hematologic parameters had improved. With continuation of imatinib, the sixth-month evaluation showed a decrease in BCR-ABL1 (minor) to 1.56%, with a normalized blood count (WBC: $5.31 \times 10^3/\mu$L, Hb: 10.6 g/dL, platelets: $226 \times 10^3/\mu$L). The patient's clinical symptoms had resolved, and she remains on imatinib therapy with ongoing follow-up. **DISCUSSION AND CONCLUSION:** While the p210 (major) transcript is the most frequently detected form in chronic myeloid leukemia (CML), the p190 (minor, e1a2) transcript is exceedingly rare, occurring in only about 1–2% of cases. In the literature, this subtype has been associated with peripheral monocytosis and marked splenomegaly, and responses to tyrosine kinase inhibitors (TKIs) have been reported as variable. In some patients, imatinib therapy may not achieve sufficient molecular response, whereas deeper responses have been described with second-generation TKIs. In our patient, early hematologic response was achieved with imatinib, and by the sixth month a marked molecular reduction was observed. Through this case, we aim to highlight the clinical and laboratory characteristics of p190-positive CML and to emphasize the importance of close molecular monitoring and careful evaluation of treatment response in this rare subtype.

https://doi.org/10.1016/j.htct.2025.106141

Adult Hematology Abstract Categories

Coagulation Disorders

PP 08

AN UNUSUAL DIAGNOSIS IN A TODDLER PRESENTING WITH MASSIVE GASTROINTESTINAL BLEEDING: A CASE OF ANGIODYSPLASIA AND TYPE 3 VON WILLEBRAND DISEASE

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Case report: Von Willebrand disease (VWD), caused by a deficiency or dysfunction of the von Willebrand protein (VWF), presents with a wide range of clinical manifestations. VWF is known to play a role in both platelet adhesion and angiogenesis. Consequently, defective angiogenesis can lead to angiodysplasia, particularly in the gastrointestinal system, occurring in 2-5% of VWD cases, typically in adults. Herein, we present what is, to our knowledge, the youngest reported case of a patient diagnosed with VWD following a presentation of gastrointestinal bleeding secondary to angiodysplasia. A 2-year and 10-month-old female patient was admitted to our hospital for melena and hematemesis. Her medical history was unremarkable, with no reported fever, diarrhea, or use of anti-inflammatory medications. There was no consanguinity between the parents, and no known family history of bleeding diathesis, Türkiye. Upon physical examination, the patient was lethargic, weak, and pale. A cardiac murmur was noted. Several 0.5 cm ecchymoses were present on her legs, though petechiae were absent. Initial laboratory tests revealed severe anemia (hemoglobin 3.5 g/dL). Her platelet count was within the normal range, as was her INR (0.96; normal range: 0.8-1.2). However, a prolonged aPTT (46.4 s; normal range: 20-34 s) and a bleeding time greater than 5 minutes were noted. An erythrocyte transfusion was immediately administered. Treatment with somatostatin and tranexamic acid was initiated. Despite this, the patient experienced three

more episodes of bright red bleeding and required two additional erythrocyte transfusions. An upper endoscopy was performed, revealing no esophageal varices. A 2 × 3 cm angiodysplastic lesion was observed in the gastric corpus and was cauterized with an argon laser. A scintigraphy scan confirmed increased activity in the same area. Following the procedure, a fresh frozen plasma transfusion was administered and propranolol treatment was started. With the bleeding controlled, and given the concurrent angiodysplasia, a detailed work-up for coagulopathy was performed. The patient's von Willebrand factor activity was below 5%, the von Willebrand factor antigen was below 3%, and Factor VIII was less than 3.5%. Platelet aggregation tests were normal. Genetic analysis of the VWF gene identified a novel homozygous mutation, c.7176T>G p.(Tyr2392Ter), and a heterozygous mutation, c.817C>G p.(Ar273Gly). Considering the clinical presentation, laboratory findings, and genetic analysis in a patient with no parental bleeding history, a diagnosis of Type 3 von Willebrand disease was established. Gastrointestinal bleeding due to angiodysplasia in VWD is a well-known complication that typically arises in adults. The only previously reported pediatric case was by Aggoune et al., who described a 14-year-old with Type 3 VWD and duodenal angiodysplasia who required surgical resection for recurrent bleeding. In contrast, our patient's initial bleeding episode was successfully managed with a combination of argon laser cauterization and medical therapy. This case highlights the importance of considering VWD in pediatric patients who present with severe gastrointestinal bleeding, especially when routine coagulation tests show a prolonged aPTT and bleeding time in the absence of risk factors for esophageal varices. It also serves as a crucial reminder that angiodysplasia is a known complication of VWD that can present even in the youngest of patients

https://doi.org/10.1016/j.htct.2025.106142

PP 09

Marrow-Dominant Marginal Zone Lymphoma with Plasmacytic Differentiation in a Frail and old patient: Immunophenotypic Pitfalls and Rituximab-Only Strategy

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Introduction: Marginal zone lymphoma (MZL) with plasmacytic differentiation can mimic other B-cell entities—particularly CLL/SLL and lymphoplasmacytic lymphoma (LPL)—and often presents in the elderly with cytopenias rather than bulky nodal disease. Correct classification is critical, as comorbidity and frailty frequently constrain treatment intensity. We report a bone marrow–dominant, plasmacytoid MZL in an 84-year-old woman successfully managed with rituximab monotherapy. **Methods:** We conducted a single-patient, retrospective case review of prospectively collected clinical, laboratory, pathology, and imaging data. Diagnostic workflow integrated complete blood count, immunoglobulin quantification, bone marrow histology with immunohistochemistry (IHC), multiparameter flow cytometry, and FDG-PET/CT. Treatment selection followed a frailty-adapted decision process. **Results:** An 84-year-old woman presented with progressive fatigue and dyspnea on exertion. Baseline labs showed leukocytosis with marked lymphocytosis and macrocytic pancytopenia (WBC 22.2 × 10^9/L; absolute lymphocytes 18.4 × 10^9/L; Hb 8.1 g/dL; MCV 105 fL; platelets 42 × 10^9/L). Immunoglobulins were not suggestive of LPL/WM (IgM 0.73 g/L; IgG 13.6 g/L; IgA 1.7 g/L). FDG-PET/CT revealed mediastinal/abdominal lymphadenopathy, splenomegaly, and a sternal cortical irregularity suspicious for osseous involvement. Bone marrow biopsy was hypercellular (∼95%) with ∼90% interstitial/patchy small-to-intermediate B-cell infiltration; reticulin fibrosis 0/4; Congo red negative. IHC supported a non-CLL, non-mantle phenotype: CD20 strong positive; CD5, CD23, CD10, cyclin D1, annexin A1, TRAP all negative. Flow cytometry demonstrated a clonal mature B-cell population (CD19+, CD20+, CD38+, cCD79a+) without CLL-type markers (CD5/CD23 negative). Plasmacytic differentiation was present, yet serum IgM remained normal, arguing against LPL/WM. Overall, findings established marginal zone lymphoma with plasmacytic differentiation, stage IV-A (marrow ± splenic/possible bone involvement). Given advanced age, cytopenias, and frailty, cytotoxic chemo-immunotherapy was deferred. The patient received rituximab monotherapy with antiviral prophylaxis and supportive care (transfusion as needed). Treatment was well tolerated; early follow-up showed clinical improvement with rising hemoglobin and platelet counts and reduction in lymphocytosis. **Discussion:** This case highlights three practice points. First, plasmacytic differentiation in MZL can masquerade as CLL or LPL/WM; a disciplined panel—CD5/CD23/cyclin D1 negativity with strong CD20 and compatible flow cytometry—prevents misclassification. Second, serological context matters: normal IgM helped exclude LPL/WM despite plasmacytoid histology. Third, in the very elderly/frail, rituximab monotherapy is a rational, lower-toxicity strategy that can reverse cytopenias and improve function when marrow disease predominates. The possible osseous signal on imaging further underlines the heterogeneity of MZL dissemination. Educationally, the case underscores integrating morphology, IHC, flow, and serology to secure diagnosis and tailor therapy beyond one-size-fits-all chemo-immunotherapy. **Conclusion:** Bone marrow-dominant MZL with plasmacytic differentiation presents diagnostic challenges but can be accurately classified through integrated morphology, IHC, flow cytometry, and serology. In very elderly or frail patients, rituximab monotherapy represents a rational and effective treatment strategy, offering hematologic recovery and functional benefit while minimizing toxicity.

https://doi.org/10.1016/j.htct.2025.106143

PP 10

CD5-positive Grade 3A Follicular Lymphoma Following Resected Cutaneous Squamous Cell Carcinoma: A Case Report

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Introduction: Follicular lymphoma (FL) is a germinal-center B-cell neoplasm that typically expresses CD10/BCL6 and lacks CD5. CD5-positive FL is uncommon and may mimic mantle cell lymphoma (MCL), creating critical diagnostic and therapeutic implications. We report an older male with a history of resected cutaneous squamous cell carcinoma (SCC) who presented with a new inguinal lymphadenopathy ultimately diagnosed as FL grade 3A, despite an atypical CD5-positive flow phenotype. **Methods:** This single-patient case report summarizes clinical data, ^18F-FDG PET/CT findings, flow cytometry, histopathology, and management. PET/CT was performed for staging. Lymph node excision provided tissue for histology and immunohistochemistry (IHC). Peripheral blood flow cytometry used a chronic lymphocytic leukemia (CLL) panel. Bone-marrow aspirate/biopsy were attempted for staging. **Results:** A 70-year-old man with previously excised cutaneous SCC (disease-free) was evaluated for new left inguinal lymphadenopathy. PET/CT demonstrated a metabolically active left inguinal node (~17 × 15 mm, SUVmax 12.18) with no other pathologic uptake in the neck, chest, liver, spleen, or adrenals. A posteromedial femoral hypodense nodule (~20 × 15 mm) and a subcutaneous scapular lesion (~26 × 20 mm) showed no increased FDG uptake. Excisional biopsy of the inguinal node revealed non-Hodgkin lymphoma, classic follicular lymphoma, grade 3A (WHO 2016). IHC showed CD20+, BCL6+, BCL2+, CD10+, CD21 positivity in follicular dendritic cells, CD3−, and Ki-67 ~25%. Peripheral blood flow cytometry demonstrated B-cell markers with CD5 high (~71%), CD23 low/negative (~16%), CD10 low (~4%), CD43 (~78%), and mild kappa predominance; findings raised concern for MCL. However, nodal histomorphology with CD10/BCL6 positivity supported FL. Bone-marrow aspirate was suboptimal (particle-poor), and iron score could not be assessed; marrow staging biopsy was planned. Given grade 3A FL and PET-positive nodal disease, the multidisciplinary tumor board recommended R-CHOP chemoimmunotherapy. Additional work-up (cyclin D1/SOX11 IHC and/or t(11;14) FISH) was advised to definitively exclude MCL due to CD5 expression. **Discussion:** This case highlights two challenges: (1) Dual malignancy in the same patient (prior SCC, now FL) and (2) immunophenotypic discordance between flow cytometry and histology. CD5-positive FL is rare and easily misclassified as MCL; mislabeling could alter therapy (e.g., bendamustine-rituximab vs R-CHOP and consideration of BTK inhibitors in MCL). When flow suggests MCL but node histology/IHC favors FL, tissue-based cyclin D1/SOX11 and t(11;14) are decisive. Suboptimal marrow underscores the need for core biopsy to complete staging. The absence of systemic FDG-avid disease supports localized nodal involvement at presentation. **Conclusion:** An older male with previously cured cutaneous SCC developed CD5-positive FL grade 3A presenting as isolated FDG-avid inguinal lymphadenopathy. Despite CD5 expression on flow cytometry, nodal morphology and germinal-center IHC secured an FL diagnosis, and R-CHOP was initiated. This case emphasizes rigorous correlation of flow cytometry with histopathology and the importance of cyclin D1/SOX11/t(11;14) testing when CD5 positivity creates ambiguity.

https://doi.org/10.1016/j.htct.2025.106144

PP 11

A CASE REPORT OF PRIMER REFRACTORY DIFFUSE LARGE B-CELL LYMPHOMA

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INTRODUCTION: Diffuse large B-cell lymphoma (DLBCL) is the most common histological subtype of non-Hodgkin lymphoma (NHL) and accounts for approximately one-quarter of NHL cases. Patients typically present with enlarged lymph nodes in the neck or abdomen. DLBCL's first-line immunochemotherapy such as R-CHOP (rituximab, cyclophosphamide, doxorubicin, Oncovin and prednisone) curing approximately two-thirds of patients. The prognosis is poor for DLBCL patients who receive first-line chemoimmunotherapy but develop early relapse or refractoriness. Treatment options for refractory patients include salvage chemoimmunotherapy, monoclonal antibodies, CAR-T or autologous stem cell transplantation. We will present a case of primary refractory DLBCL. **CASE:** A 57-year-old male patient with no chronic illness presented to the internal medicine outpatient clinic complaining of abdominal pain and was referred to us due to the detection of conglomerate lymphadenopathy (LAP) in the abdomen on imaging. Positron Emission Tomography (PET-CT) revealed multiple LAP's within the abdomen, the largest measuring 80 mm in diameter and with an SUV(max) value of 21.8. A tru-cut biopsy was performed from the large intra-abdominal LAP. The results were DLBCL with Bcl-2 (+), Bcl-6 (+), and Ki-67 85-90%. Myc could not be tested for technical reasons. No infiltration was detected in the bone marrow biopsy. The patient received 3 cycles of R-CHOP chemotherapy protocol, and a PET-CT scan was performed for interim evaluation. The PET-CT scan showed persistent conglomerate LAP's with an SUV(max) value of 27.02 and a maximum diameter of 58 mm. The patient, considered refractory, received two cycles of R-DHAP (Rituximab-Dexamethasone, Cytarabine Cisplatin) chemotherapy protocol and a PET-CT scan was performed for response evaluation. The PET-CT scan showed multiple LAPs, the largest of which was 83 mm in diameter and had an SUV(max) of 31.45. A tru-cut biopsy was performed again from the largest intra-abdominal lymph node for confirmation of the diagnosis. Pathology was similar to the previous biopsy and c-myc was weak (+) (10-15%). The patient received two cycles of the R-GemOX (rituximab, gemcitabine, oxaliplatin) protocol. Only abdominal CT was

scanned and no reduction in the mass was observed. Glofitamab therapy was initiated with off-label consent. The first and second cycle was completed. The patient did not develop cytokine release syndrome or neuropathy. A PET-CT scan was scheduled for 3 weeks later for response evaluation. The PET-CT scan showed that the intra-abdominal mass had regressed to 8 mm and the SUV(max) value to 3.44. The patient, who responded to glofitamab treatment, was offered autologous stem cell transplantation or CAR-T (Chimeric Antigen Receptor T-cell) therapy options. The patient requested to be referred to a center where CAR-T therapy could be performed. The patient is currently awaiting CAR-T therapy. **CONCLUSION:** In eligible DLBCL patients, salvage chemoimmunotherapy and/or monoclonal antibodies can be used as bridge therapies to OKIT or CAR-T therapies. Glofitamab is a bispecific antibody targeting CD20 and CD3, approved for r/r DLBCL patients after at least two prior lines of therapy. In a study, Glofitamab demonstrated a 46% ORR (27% CR; 19% PR) and manageable safety in heavily pretreated r/r DLBCL patients.

https://doi.org/10.1016/j.htct.2025.106145

PP 12

A CASE OF REFRACTORY MULTIPLE MYELOMA WITH HYPOGLOSSAL NERVE INVOLVEMENT

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Multiple myeloma (MM) is a clonal stem cell disease originating from plasma cells. The development of MM neurological findings is mostly caused by hyperviscosity, hypercalcemia, amyloidosis, vertebral bone involvement and spinal cord compression due to fractures or nerve compression, neuropathy due to paraproteinemia. Brain involvement is very rare. It may present as cerebral lesion, parenchymal disease or leptomeningeal involvement. A case of isolated hypoglossal nerve involvement under MM treatment at the age of 52 will be presented. Cranial nerve involvement in multiple myeloma patients can occur without the development of plasmacytoma at the skull base, but rather through infiltration of the nerve sheath with plasma cells. Combination therapies must be administered to the patient. Isolated cranial nerve involvement is a very rare complication of multiple myeloma. INTRODUCTION: Multiple myelom is clonal stem cell disease originating from plasma cells. These cells produce monoclonal immune globulins, most commonly Immunoglobulin G (IgG) or Immunoglobulin A (IgA). The disease often leads to a variety of symptoms, including anemia, bone pain, increased incidence of fracture, hypercalcemia, renal failure and increased susceptibility to infections(1).Neurological complications in MM most commonly occur due to spinal cord compression from bone lesions, paraprotein associated neuropathy, hypercalcemia, hyperviscosity or amyloidosis(2). Central nervosus system (CNS) involvement may manifest as either a solitary cerebral lesion, intra-parenchymal infiltration, or diffuse leptomeningeal disease such as CNS myelomatosis(3). The average survival after CNS involvement is 3 months (1,3). **Clinical Presentation:**A 46-year-old male patient presented with complaints of pain in the left shoulder and chest that started on January 0, 2019, in addition to weight loss, weakness in the legs, and difficulty in walking. Laboratory Findings:In the examinations performed, wbc: 8.24 10e3/uL hbg: 9.23 gr/dl, plt: 118 10e3/uL, pnl: 5.65 10e3/uL, urea: 117 mg/dl, creatinine: 3.85 mg/dl, albumin: 2.79 gr/dl, globulin: 3.81 gr/dl, corrected calcium: 9.16 mg/dl, beta2 microglobulin: 0.44 mg/dl, serum free lambda light chain: 1190 mg/l increased and serum free kappa light chain: 5.25 mg/l, 24-hour urine immunofixation electrophoresis revealed free lambda light chain: 5.65 mg/l, Chain band was detected. In the MR imaging, there were nodular lesions in the iliac bone and sacrum, immunoglobulin values were IgA: 25 mg/dl, IgG: 293 mg/dl, IgM: 68 mg/dl, 80% plasma cells in the bone marrow. Treatment: The patient was diagnosed with multiple myeloma and started on bortezomib, cyclophosphamide, dexamethasone (VCD) chemotherapy. After 4 cycles of VCD and radiotherapy (RT), an increase in light chains was observed in the control evaluation, and a bortezomib, lenalidomide and dexamethasone (VRD) course was started. The patient, who underwent autologous BMT in December 2019, was followed up under lenalidomide cordexa maintenance treatment, and a relapse was detected in the control evaluations in June 2022. Ixazomib, lenalidomide and dexamethasone (IRD) treatment was started, and daratumumab VCD treatment was switched to due to lack of response. Outcome: The patient, who was followed up under daratumumab VCD treatment, developed complaints of decreased hearing and numbness in the jaw. In addition to the atrophy in the left half of the tongue and the complaint of shifting to the left when the tongue was taken out of the mouth, speech and swallowing were impaired. (Figure 1)Neurology consultation and detailed brain imaging showed increased thickness in the right maxillary sinus. In the PET-CT imaging, although there was no pathological involvement in the head, neck and mediastinal structures, widespread lytic lesions were seen especially in various vertebrae, femur and tibia, and it was evaluated as progressive disease. No plasma cells or other pathology was detected in intrathecal sampling. Peripheral smears were examined daily with suspicion of plasma cell leukemia, but plasma cells were not detected. No signs of neurological diseases such as cranial hemorrhage or embolism were found that would cause this clinic. Conclucion and Results: The patient was evaluated in the council with neurology and it was evaluated that there was isolated myeloma involvement of nervus hypoglossus and the treatment was arranged as dartumumab, pomalidomide and dexamethasone. Brain RT was performed. After 2 cycles of chemotherapy and radiotherapy, the patient's tongue numbness, speech and swallowing disorders improved. The complaint of left shift when the tongue came out of the mouth regressed(Figure 2). The patient's isolated nervus hypoglossus involvement improved with treatment, and his follow-ups are continuing. In conclusion, cranial nerve involvement in multiple myeloma patients can occur without the development of plasmacytoma at the skull base, but rather through infiltration of the nerve sheath with plasma cells. Combination therapies must be administered to the patient. Conclusion: Brain involvement may very rarely develop in 1% of patients with multiple

myeloma (4). Parenchymal involvement may be in the form of mass compression or leptomeningeal involvement due to plasmacytomas (5). The most common cranial nerve involvements in the literature are the oculomotor nerve, abducens nerve and hypoglossal nerve (2). Involvement of these cranial nerves is most commonly due to plasmacytomas originating from the skull base and sinuses (6). When other cases of multiple myeloma with hypoglossal nerve involvement were scanned in the literature, it was seen that there was plasmacytoma or leptomeningeal involvement (7,8). In our case, it is a very rare condition in terms of the absence of a mass lesion, plasmacytoma and leptomeningeal involvement in the brain. When the case was re-examined after the literature scan, it was seen that there was a prominent paranasal sinus wall thickening on the right side that developed during the period when the patient's complaints began, without any mass lesion or leptomeningeal involvement. However, in a case report, a patient with a soft tissue mass in the right paranasal sinus had significant plasmacytomas at the skull base, and clinically, there was oculomotor, facial and hypoglossus nerve involvement (9). This situation suggests that involvement in the paranasal region may require differentiation from classical infection conditions in patients at risk and close monitoring in terms of intracranial events. Plasmacytomas of the skull base occur as an extension of plasmacytoma originating from the clivus, petrous part of the temporal bone or from the submucosa of the sinonasal and nasopharyngeal (extramedullary plasmacytoma) region. Extramedullary plasmacytomas are most commonly seen in the nasal and paranasal sinuses, nasopharynx, tonsils and larynx (10). Due to the rarity of extramedullary plasmacytomas, data on treatment and prognosis are limited. However, studies have shown the effectiveness of radiotherapy. There are publications showing that 30-50 gy radiation most effectively reduces tumor sizes caused by multiple myeloma (11)..In our case, radiotherapy and appropriate chemotherapy were initiated. Cranial nerve involvement is very rare in cases of relapsed refractory disease, and radiotherapy and combined chemotherapy are among the treatment options.

https://doi.org/10.1016/j.htct.2025.106146

Adult Hematology Abstract Categories

Platelet Diseases

PP 13

A RARE DIAGNOSIS IN ADULTS: HEREDITARY THROMBOTIC THROMBOCYTOPENIC PURPURA

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Introduction: Thrombotic thrombocytopenic purpura (TTP) is a thrombotic microangiopathy (TMA) resulting from severely reduced activity of ADAMTS-13 (a disintegrin and metalloproteinase with a thrombospondin type 1 motif, member 13), a metalloproteinase responsible for cleaving von Willebrand factor (vWF). It is characterized by disseminated platelet-rich microvascular thrombi leading to organ ischemia, neurological abnormalities, renal dysfunction, thrombocytopenia, and microangiopathic hemolytic anemia (MAHA). Hereditary TTP (hTTP; also referred to as congenital TTP [cTTP] or Upshaw–Schulman syndrome) arises from pathogenic variants in the *ADAMTS-13* gene and follows an autosomal recessive inheritance pattern. Although extremely rare, it can be life-threatening. Patients with hTTP require special attention during certain life stages such as the neonatal period and pregnancy . In contrast to immune-mediated TTP (iTTP), which typically presents with a dramatic and acute onset, hTTP may manifest with a more insidious clinical picture including lethargy, impaired concentration, abdominal pain, and headache . Severe renal failure, although uncommon in iTTP, may occur in hTTP patients due to lifelong ADAMTS-13 deficiency, which can cause progressive accumulation of thrombi within the renal vasculature Hematologic examination may reveal pallor, purpura, and jaundice as signs of hemolysis, while laboratory findings typically show thrombocytopenia, unconjugated hyperbilirubinemia, elevated LDH levels, and decreased haptoglobin . Peripheral blood smear is often diagnostic, demonstrating schistocytes, nucleated red blood cells, and polychromatic red cells, consistent with intravascular hemolysis . Here, we describe the case of an 18-year-old patient with congenital TTP who was initially misdiagnosed with myelodysplastic syndrome (MDS) at an early age and received intermittent transfusions due to cytopenias. The aim of this case report is to raise clinical awareness regarding this rare and potentially fatal subtype of TTP, which can be rapidly and effectively treated if recognized early. In addition, it underscores the importance of reassessing patients at each presentation, even when a pre-existing diagnosis is available, and highlights the critical diagnostic value of peripheral blood smear, as the presence of schistocytes is pathognomonic for this condition. **Case report:** We present the case of an 18-year-old female patient, with no family history of hematologic disorders, who has been followed since childhood for anemia and thrombocytopenia. At the age of 18, she was diagnosed with congenital thrombotic thrombocytopenic purpura (TTP) and treatment was initiated. Her hematologic evaluation began in 2009, at the age of three, due to anemia and thrombocytopenia, during which she received platelet and red blood cell transfusions. Following a bone marrow examination, she was diagnosed with myelodysplastic syndrome (MDS). In 2018, she was also diagnosed with chronic kidney disease secondary to vesicoureteral reflux by the pediatric nephrology department, Türkiye. In 2024, at the age of 18, she presented to the emergency department with complaints of fatigue and dizziness. Laboratory tests revealed: WBC 5.36×10^9/L, Hgb 8 g/dL, Plt 8×10^9/L, INR 0.98, fibrinogen 211 mg/dL, creatinine 5.8 mg/dL, AST 21 U/L, ALT 15 U/L, uric acid 8.6 mg/dL, LDH 622 U/L, total bilirubin 2.5 mg/dL, direct bilirubin 0.35 mg/dL, and both direct and indirect Coombs tests were negative. The patient was admitted to the hematology clinic for further evaluation, Türkiye. Physical examination was notable only for mild pallor; no lymphadenopathy or organomegaly was detected. Peripheral

blood smear performed in our clinic demonstrated approximately 7–8% schistocytes, polychromatic erythrocytes, and thrombocytopenia, consistent primarily with thrombotic microangiopathy Review of the patient's previous laboratory records revealed episodes of anemia and thrombocytopenia, accompanied by elevated LDH, indirect bilirubin, and reticulocyte counts during these periods. ADAMTS-13 antigen, activity, and inhibitor levels were subsequently evaluated. The patient received red blood cell transfusions and 3 units of fresh frozen plasma. Laboratory results showed ADAMTS-13 activity of 23.61% (reference range: 40–130%), ADAMTS-13 antigen 0.06 IU/mL (reference range: 0.19–0.81), and ADAMTS-13 inhibitor 3.36 U/mL, with the inhibitor interpreted as negative (<12 U/mL), borderline (12–15 U/mL), or positive (>15 U/mL). Given the severely reduced ADAMTS-13 antigen and negative inhibitor, the patient was diagnosed with congenital TTP and initiated on biweekly therapeutic plasma infusion (10 mL/kg). Two weeks later, follow-up blood tests showed a platelet count of 219×10^9/L, and peripheral smear findings had completely normalized (Figure 3). At the subsequent follow-up, ADAMTS-13 tests were repeated, revealing activity <0.20%, antigen <0.01 IU/mL, and inhibitor 2.96 U/mL, consistent once again with congenital TTP. The patient continues to be followed and managed in our clinic. **DISCUSSION:** The aim of this case report is to raise awareness among clinicians about this rare syndrome, which, if accurately diagnosed, can be effectively treated, whereas misdiagnosis may lead to fatal outcomes. In neonates and children, clinicians may suspect congenital TTP in the presence of jaundice, hemolytic anemia, and thrombocytopenia. This rare syndrome was first described in 1960 by Schulman in an eight-year-old girl who experienced recurrent thrombocytopenia episodes responsive to plasma infusions [7]. In 1978, Upshaw reported a similar case in a 29-year-old patient with recurrent thrombocytopenia attacks associated with microangiopathic hemolytic anemia (MAHA), also responsive to plasma infusions, documenting multiple MAHA episodes often triggered by acute infections or stressors such as pregnancy or surgery [8].Classically, TTP is characterized by a pentad of fever, microangiopathic hemolytic anemia, thrombocytopenia, and variable renal and neurological dysfunction (observed in 20–30% of patients).However, this full presentation is often absent inmost patients [9,10].The current standard treatment for congenital TTP involves prophylactic or on-demand infusions of fresh frozen plasma (FFP) or plasma-derived factor VIII–vWF concentrates containing ADAMTS-13 for replacement therapy [11,12]. Until recently, no drug had been specifically approved for routine prophylaxis in patients with congenital TTP. Recombinant ADAMTS-13 received FDA approval in November 2023 for prophylactic or on-demand ADAMTS-13 replacement therapy in both adults and children with congenital TTP [13].Scully et al. [14] recently reported a phase 3 study comparing recombinant ADAMTS-13 with standard therapy for prophylaxis in congenital TTP patients. The study demonstrated that recombinant ADAMTS-13 is an effective prophylactic treatment approach for these patients. No safety concerns were reported, and no neutralizing antibodies against ADAMTS-13 were detected. Our patient had previously been diagnosed with MDS by apediatric hematology clinic and monitored with intermittent blood transfusions.MDS in children (≤18 years) is exceedingly rare, with an incidence of 1–4 cases per million [15].Therefore, we approached the initial diagnosis cautiously. During an MAHA episode, detailed investigations led to the diagnosis of congenital TTP. The patient responded well to fresh frozen plasma therapy. Currently, she continues biweekly FFP infusions at 10 mL/kg in our center, has not experienced further microangiopathic episodes, and remains under close follow-up.

https://doi.org/10.1016/j.htct.2025.106147

PP 14

A CASE OF X-LINKED THROMBOCYTOPENIA CONFUSED WITH IMMUNE THROMBOCYTOPENIA

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Wiskott-Aldrich Syndrome (WAS) is an X-linked disorder characterized by severe thrombocytopenia, eczema, humoral and cellular immunodeficiency, and an increased susceptibility to lymphoid malignancies. The milder form is X-linked thrombocytopenia (XLT), characterized by persistent thrombocytopenia with minimal or no signs of eczema or immunodeficiency. An eight-year-old male patient was admitted to the hospital at six months of age with complaints of coughing and wheezing. Bone marrow aspiration was performed after thrombocytopenia was detected in a complete blood count, and the bone marrow was interpreted as technically hypocellular. Immun thrombocytopenia was suspected, and follow-up was recommended. Since he had no bleeding, he did not return to our clinic. When the patient was scheduled circumcision at the age of seven, his platelet count was 30,000/mm3, so he was referred to our clinic from anesthesia. In his medical history, he had severe eczema as a baby, which later improved, and he has no history of bleeding. In his family history, his uncles also had low platelet counts, and three of his uncles underwent splenectomy for this reason, after which their platelet counts returned to normal. On physical examination, the patient had no signs of dermatitis, petechiae, purpura, or ecchymosis. The liver and spleen were palpable at 2 cm. Laboratory tests: Hgb: 12.9 g/dl, Htc: 36.7%, white blood cells: 12,360/mm3, platelets: 30,000/mm3, MPV: 9.1 fl (normal), and platelet size appeared normal in the peripheral smear. Sedimentation was normal, and immunoglobulin values were normal for age. Based on these findings, a preliminary diagnosis of XLT was considered, and WAS genetics were sent. In the WAS gene, a c.223G>A (p.V75M) hemizygous mutation was detected. The patient was diagnosed with XLT based on clinical findings and this mutation in the WAS gene. Eltrombopag treatment was initiated but was ineffective, so a splenectomy was performed.Subsequently, the platelet count reached 323,000/mm3. No decrease was observed during follow-up. This situation can cause confusion with immune thrombocytopenia (ITP) and delay the diagnosis of XLT. Since XLT patients present with a milder clinical picture than

classic WAS, treatment selection should be based on the patient's clinical presentation. Studies have shown that IVIG or antibiotic prophylaxis has no effect on the frequency or severity of infections in these patients. Since our patient did not have a history of frequent or severe infections, we did not initiate these treatments. Studies have shown that the incidence of bleeding decreases significantly after splenectomy, but the incidence of infection increases. Our patient's platelet counts returned to normal after splenectomy. To reduce the frequency of infections, we administered encapsulated bacterial vaccines and started penicillin prophylaxis for our patient. Due to the permanent morbidity in XLT, hematopoietic stem cell transplantation (HSCT) is the definitive treatment method. However, considering the side effects of HSCT, this decision should be made according to the patient's clinical condition.

https://doi.org/10.1016/j.htct.2025.106148

Adult Hematology Abstract Categories

Stem Cell Transplantation

PP 15

COMPARISON OF FEBRILE NEUTROPENIA IN PATIENTS UNDERGOING AUTOLOGOUS STEM CELL TRANSPLANTATION WITH BEAM AND HIGH-DOSE MELPHALAN CONDITIONING REGIMENS

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Objective: Objective: Conditioning regimens used before autolog stem cell transplantation (ASCT) have a direct impact on post-transplant complications and infectious morbidity. The BEAM regimen (carmustine, etoposide, cytarabine, and melphalan) is frequently preferred for patients with Hodgkin and non-Hodgkin lymphomas, while high-dose melphalan is commonly used in multiple myeloma. This study aims to compare the incidence of febrile neutropenia (FN) in patients undergoing ASCT with either the BEAM or high-dose melphalan conditioning regimen. **Methods:** In this study, febrile neutropenic patients who underwent autologous stem cell transplantation between 2010 and 2023 at the Hematology Department of Bursa Uludağ University Faculty of Medicine were analyzed. We evaluated the patients' demographic and clinicopathological data, duration of FN episodes, depth of neutropenia, and length of hospital stay. Additionally, the causative pathogens of FN and FN-related mortality were also analyzed, Türkiye. **Result:** A total of 164 patients were included in this study. Seventy-three of the patients were female and 91 were male. There were 131 multiple myeloma, 23 Non-Hodgkin lymphoma, and 10 Hodgkin lymphoma. One-hundred thirty one (%80) received high-dose melphalan, 33 (%20) received BEAM. The median dose of CD34+ cells was similar in both groups (p=0,938). The duration of FN episode and length of hospital stay were significantly longer in the BEAM arm (p=0,001 and p=0,001). Invasive pulmonary aspergillosis was significantly more common in the BEAM arm (p=0,013). Of the bacteria isolated in culture, 29% (n=48) were gram-positive and 9% (n=14) were gram-negative. The most frequently isolated gram-positive bacteria were Staphylococcus epidermidis (n=29) and Staphylococcus aureus (n=7), while gram-negative bacteria were Klebsiella pneumoniae (n=5) and Pseudomonas aeruginosa (n=4). CRP and Pitt score were similar in bot groups (p=0,152 vs p=0,247). No significant difference in FN-related mortality was seen between the two arms (p=0,802), Türkiye. **Conclusion:** Conclusion: The BEAM regimen significantly increased the risk of invasive pulmonary aspergillosis, length of hospital stay, and duration of febrile neutropenia. These results suggest that, particularly in lymphoma patients, the risks of FN should be taken into account when selecting the BEAM regimen, Türkiye.

https://doi.org/10.1016/j.htct.2025.106149

PP 16

HEMATOLOGICAL APPROACHES IN AUTOIMMUNE ENCEPHALITIS: OFATUMUMAB EXPERIENCE

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Objective: Autoimmune encephalitis (AE) is a group of encephalitides caused by immune-mediated inflammatory disorders of the brain. While B cell–mediated autoimmunity is observed in many patients, some subtypes also involve T cell–mediated mechanisms. AE-related antibodies are classified into three groups: paraneoplastic antibodies, synaptic antibodies, and antibodies of uncertain significance. Paraneoplastic antibodies are frequently associated with systemic tumors and show poor responsiveness to immunotherapy. Synaptic antibodies, on the other hand, display variable associations with systemic tumors but are generally more responsive to immunotherapy. The diagnosis of AE is based on clinical features, radiological findings (such as abnormalities on T2 and FLAIR brain MRI), slow-wave activity in the temporal lobe, cerebrospinal fluid (CSF) pleocytosis, and the exclusion of alternative causes. Although antibody detection remains one of the best diagnostic tools, many cases may still be seronegative. Common paraneoplastic antibodies include anti-Hu, anti-Yo, anti-CV2, anti-Ma2, anti-Ri, anti-amphiphysin, ZIC4, and GAD65. Major synaptic autoantibodies include anti-NMDA, anti-AMPA, anti-GABA-B receptor, anti-CASPR,

and anti-LG1. Antibody-positive AE represents a distinct subgroup of encephalopathies characterized by autoimmune responses against various antigens in the brain parenchyma[1,2]. Due to clinical, imaging, and laboratory similarities with infectious and other autoimmune encephalitides, AE remains a diagnostic challenge. Patients typically present with subacute memory and cognitive decline over days to weeks. Encephalopathic syndromes may include behavioral changes, psychosis, seizures, and coma, reflecting a broad neuropsychiatric spectrum[3]. In addition to supportive and antiepileptic therapies, early initiation of immunosuppressive treatment is essential. First-line immunosuppressive therapies in AE include corticosteroids, intravenous immunoglobulin, and plasma exchange[4,5]. For patients unresponsive to first-line treatments, second-line therapies include anti-CD20 monoclonal antibodies (rituximab and ofatumumab), mycophenolate mofetil, cyclophosphamide, and azathioprine. In refractory cases, third-line therapies such as daratumumab, bortezomib, obinutuzumab, tocilizumab, anakinra, tofacitinib, and intrathecal methotrexate may be considered[5]. Several studies have demonstrated that the use of ofatumumab, a second-generation CD20 monoclonal antibody, results in reduced antibody titers and significant clinical improvement in AE[6,7]. **Case report:** A 22-year-old female patient was admitted to an ICU in Kosovo in June 2025 with impaired consciousness and was intubated. Her Glasgow Coma Scale (GCS) score was 3. She was transferred to our hospital's intensive care unit on June 19, 2025, with a presumptive diagnosis of autoimmune encephalitis. A brain MRI performed externally on June 16 showed symmetric signal abnormalities in the bilateral basal ganglia. A lumbar puncture was performed upon admission, and CSF was sent for paraneoplastic and autoimmune antibody panels. Immunosuppressive therapy with 1000 mg methylprednisolone was initiated. For focal motor seizure control, levetiracetam (3000 mg/day) and valproic acid (2000 mg/day) were added. Plasma exchange (1/1) was started every other day beginning on June 19. Tracheal aspirate cultures grew carbapenem-resistant Acinetobacter baumannii. The patient was started on colistin, to which the isolate was sensitive. Despite therapy, focal motor seizures persisted. A brain MRI performed on June 26 showed widespread encephalitic signal changes in the left fronto-temporal and parieto-occipital regions, as well as in the right temporal region. CSF analysis revealed negative results for both paraneoplastic and autoimmune antibody panels. Given the lack of response to 1000 mg methylprednisolone and seven sessions of plasma exchange, the patient was considered to have autoimmune encephalitis refractory to first-line therapies. Daily IVIG (20 g/day for 5 days, total 100 g) was initiated, followed by second-line therapy with ofatumumab on June 27, 2025. The treatment regimen consisted of 20 mg subcutaneous injections at weeks 0, 1, and 2, followed by monthly subcutaneous injections starting from week 4. Mycophenolate mofetil (2000 mg/day) was added to the regimen. For refractory seizures, lacosamide (2 × 200 mg) was started. Clobazam was added but proved ineffective. High-dose topiramate (800 mg/day) was initiated, which achieved substantial seizure control. Antiepileptic dosages were subsequently optimized. Weekly brain MRI scans demonstrated partial regression of prior lesions. The patient developed anemia following plasma exchange, for which erythrocyte transfusions were administered. The patient was extubated on July 14, 2025, and was able to follow simple motor commands such as eye opening and closing. On July 18, she was transferred from the ICU to a general ward. Due to weight loss, a high-protein diet was initiated. A follow-up brain MRI after extubation showed partial regression and signal changes in prior lesions. Immunosuppressive therapies (ofatumumab and mycophenolate mofetil 2000 mg/day) were continued. PET-CT revealed no evidence of malignancy. Viral serologies were unremarkable. At follow-up on August 11, 2025, neurological examination revealed normal conjugate gaze, full muscle strength (5/5), normal tandem gait, mild action tremor in both hands, negative parkinsonian signs, normal deep tendon reflexes, and absence of ataxia or pathological reflexes. Speech was mildly dysphonic with occasional brief hesitations during reading. Overall, her condition was stable, and she was discharged, Türkiye. **Conclusion:** DISCUSSIONAutoimmune encephalitis is an inflammatory brain disorder that may mimic infectious and other etiologies in terms of clinical, radiological, and serological findings, making diagnosis challenging. Since diagnosis is based on exclusion, immunosuppressive therapy must be initiated promptly. First-line therapies, including corticosteroids, intravenous immunoglobulin, and plasma exchange, are generally effective. In resistant cases, second-line therapy, especially anti-CD20 monoclonal antibodies such as ofatumumab, should be considered. Studies have demonstrated favorable responses with ofatumumab in patients with AE refractory to first-line therapies[8,9]. In our case, ofatumumab led to significant clinical improvement in a patient with severe, treatment-resistant AE. In conclusion, ofatumumab represents a promising treatment option for AE patients who fail to respond to first-line therapies such as corticosteroids, intravenous immunoglobulin, and plasma exchange.

https://doi.org/10.1016/j.htct.2025.106150

Adult Hematology Abstract Categories

Akut Lösemiler

PP 17

Long-term Success of Prophylactic Intrathecal Therapy in AML Patients with CNS Involvement: Two Cases with Extended Remission Following Stem Cell Transplantation

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Case 1: A 25-year-old female (born 1993) presented in 2018 with fatigue, anemia, and pancytopenia. Bone marrow biopsy revealed high blast count with flow cytometry showing CD33 (94%), CD117 (73%), MPO (98%) positivity, and limited CD34 (3-4%) expression. Cytogenetic analysis was negative for t(8;21), inv(16), t(15;17), and BCR-ABL, classifying the case as cytogenetically normal intermediate-risk AML. Brain MRI revealed

meningeal involvement at diagnosis. The patient received standard 7+3 induction (cytarabine + idarubicin) achieving complete hematologic remission. Due to absence of suitable donor, autologous stem cell transplantation was performed. Despite achieving complete remission and remaining asymptomatic, prophylactic intrathecal methotrexate and cytarabine was initiated every 6 months for CNS protection. Serial CSF examinations from 2019-2024 showed no blast cells. Bone marrow biopsies consistently demonstrated hypocellular marrow without blasts, with negative CD34 and CD117. The patient has maintained complete remission for 7 years without neurological symptoms or complications. Case 2: A 46-year-old male (born 1973) presented in 2019 with anemia, thrombocytopenia, and fatigue. Bone marrow analysis confirmed AML with flow cytometry showing CD33 (99%), MPO (98%), high HLA-DR expression, but negative CD34 and CD117, consistent with aggressive AML phenotype. CSF examination at diagnosis confirmed CNS involvement. After achieving complete remission with standard 7+3 induction (cytarabine + daunorubicin), the patient underwent allogeneic stem cell transplantation. Similar to Case 1, prophylactic intrathecal methotrexate and cytarabine was administered every 6 months despite clinical remission. Follow-up from 2020-2023 showed consistently negative CSF examinations and stable bone marrow remission with <5% blasts. The patient has maintained complete remission for 6 years without transplant complications or neurological sequelae. Discussion: These cases demonstrate several important clinical principles in managing AML with CNS involvement. First, both patients achieved sustained remission despite CNS involvement at diagnosis, traditionally associated with poor prognosis. The combination of intensive systemic therapy, stem cell transplantation, and prolonged prophylactic intrathecal therapy appears crucial for success. The extended prophylactic intrathecal therapy regimen (6-7 years) far exceeds standard recommendations but proved remarkably safe and effective. The 6-monthly interval appears optimal, providing adequate CNS protection while minimizing procedure-related risks and patient burden compared to more frequent administration. The contrasting transplant approaches (autologous vs. allogeneic) achieved similar outcomes, suggesting that the prophylactic intrathecal strategy may be more important than transplant type for CNS disease control. Both patients demonstrated excellent tolerance to repeated lumbar punctures without cumulative neurotoxicity. The absence of CNS relapse in both cases over 6-7 years strongly supports the efficacy of this prophylactic approach. Traditional concerns about prolonged intrathecal therapy causing neurotoxicity were not observed, possibly due to the extended interval between treatments. Conclusion: Extended prophylactic intrathecal therapy administered every 6 months following stem cell transplantation represents a safe and highly effective strategy for preventing CNS relapse in AML patients with initial CNS involvement. These cases challenge conventional limitations on prophylactic therapy duration and support consideration of extended prophylaxis in high-risk patients. The excellent long-term outcomes without significant complications suggest this approach should be considered for similar cases, potentially improving survival in this traditionally poor-prognosis population.

https://doi.org/10.1016/j.htct.2025.106151

PP 18

MYELOID SARCOMA PRESENTING IN THE RETROMOLAR TRIGONE WITHOUT MARROW INVOLVEMENT

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Introduction: Myeloid sarcoma (MS), also known as granulocytic sarcoma or chloroma, is a rare extramedullary tumor composed of myeloblasts. It may occur de novo, concurrently with acute myeloid leukemia (AML), or as a relapse of previously treated AML. Oral cavity involvement is rare, and isolated presentations without bone marrow disease pose significant diagnostic challenges . MS is biologically considered equivalent to AML and should be treated accordingly, even in the absence of systemic disease . **Case Presentation:** A 51-year-old woman presented with left facial swelling and dysphagia. MRI revealed a large mass in the left retromolar trigone extending to the skull base and infratemporal region with associated mandibular bone destruction. Incisional biopsy showed sheets of immature myeloid cells. Immunohistochemistry was positive for CD117, CD34, myeloperoxidase (MPO), and CD99, with a Ki-67 proliferation index of ~40%, confirming myeloid sarcoma. PET-CT revealed a hypermetabolic mass (SUVmax 7.27) and ipsilateral cervical lymphadenopathy but no systemic FDG-avid disease. Bone marrow biopsy showed no leukemic infiltration The patient was treated for acute myeloid leukemia and was started on a 7+3 chemotherapy protocol. The patient is being monitored during the post-treatment cytopenic period. **Conclusion:** ConclusionThis case highlights the diagnostic complexity of isolated myeloid sarcoma in an unusual location. Comprehensive immunophenotypic analysis is essential for diagnosis. Although marrow was uninvolved, the patient was initiated on AML-type induction chemotherapy due to the high risk of progression . Early systemic treatment, rather than localized therapy alone, is critical to avoid transformation into overt leukemia . Systemic chemotherapy using AML-like regimens should be commenced early, even in nonleukemic disease. Surgery and/or radiotherapy may be indicated for symptomatic lesions or tumors causing local organ dysfunction or obstruction. Allogeneic hematopoietic stem cell transplantation has demonstrated promising results, particularly in patients who achieved complete remission with AML-induction protocols, and recent advances in genetic profiling may enable the development of novel targeted therapies . Clinicians should maintain a high index of suspicion for MS in atypical head and neck masses.

https://doi.org/10.1016/j.htct.2025.106152

PP 19

Oral and Maxillary Mucormycosis in a Patient with Acute Myeloid Leukemia: A Rare Case Report

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Introduction: Mucormycosis is an opportunistic fungal infection with rapid progression and high mortality, typically occurring in patients with hematologic malignancies, diabetes mellitus, organ transplantation, or prolonged immunosuppression. Clinically, the most common forms are rhinocerebral, pulmonary, cutaneous, and gastrointestinal involvement. Rhino-cerebral mucormycosis often originates in the paranasal sinuses and may extend to the orbit and brain. Oral mucormycosis is less common and usually presents with maxillary bone necrosis and palatal perforation. Early diagnosis and appropriate antifungal therapy are critical for improving prognosis. In this report, we present a case of newly diagnosed acute myeloid leukemia (AML) who developed rhino-orbito-cerebral mucormycosis involving the maxilla following chemotherapy. **Case Report:** A 52-year-old male patient was admitted to the hematology outpatient clinic with complaints of epistaxis and fatigue. Laboratory evaluation revealed pancytopenia, and peripheral smear, bone marrow aspiration, and flow cytometry confirmed the diagnosis of acute myeloid leukemia (AML). The patient received induction chemotherapy with daunorubicin (60 mg/m^2 for 3 days) and cytarabine (100 mg/m^2 for 7 days). In the second week of treatment, the patient developed pain in the left maxillary region and was referred to the Faculty of Dentistry, Inönü University. Oral and radiological examination (Figure 1)revealed a fixed dental bridge with good marginal adaptation.The prosthetic device was removed, and no pathology was observed in the teeth or surrounding mucosa, Türkiye.

https://doi.org/10.1016/j.htct.2025.106153

PP 20

A CASE OF COVID-19 PNEUMONIA DEVELOPING DURING ALLOGENEIC STEM CELL TRANSPLANTATION IN A PATIENT WITH ACUTE MYELOID LEUKEMIA

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Objective: Allogeneic hematopoietic stem cell transplantation (HSCT) is a curative therapeutic modality for patients with acute myeloid leukemia (AML)[1]. Patients undergoing HSCT are highly susceptible to SARS-CoV-2 infection due to profound immunosuppression, delayed immune reconstitution, and graft-versus-host disease (GVHD) prophylaxis[2],[4]. Covid-19 infection in HSCT recipients, particularly during the early post-transplant period, has been associated with high morbidity and mortality[5]. Studies have demonstrated increased mortality in patients diagnosed with Covid-19 during HSCT, especially in the early phase[6]. Herein, we present a case of Covid-19 pneumonia that developed during allogeneic HSCT with myeloablative conditioning in a patient with high-risk AML. **Case report:** Our patient was a 33-year-old female diagnosed with AML in March 2025. Following diagnosis, she received induction therapy with the 3+7 regimen (Idarubicin + Cytarabine). As remission was not achieved, she was administered FLAG-Mito as reinduction therapy. Despite two cycles of induction, no response was obtained, and the patient was considered refractory AML; thus, allogeneic transplantation was planned. During the pre-transplant period, she received two cycles of azacitidine + venetoclax. On July 21, 2025, myeloablative conditioning (Fludarabine + Treosulfan) was initiated. During conditioning, her caregiver developed upper respiratory tract infection symptoms and tested positive for Covid-19. Since the patient was asymptomatic, the transplantation procedure was continued. On July 28, 2025, she underwent allogeneic transplantation from her HLA-matched sibling donor. GVHD prophylaxis consisted of CsA + MTX, and voriconazole was given for antifungal prophylaxis. On day +3 post-transplant, the patient developed fever (38°C) and was treated as febrile neutropenia with broad-spectrum antibiotics (Meropenem). SARS-CoV-2 PCR testing was positive. Initially, she presented with mild symptoms, but one week after positivity, chest imaging revealed diffuse pulmonary infiltrates consistent with Covid-19 pneumonia (Figure-1). Despite broad-spectrum antibiotics, she required high-dose corticosteroids and a single dose of tocilizumab (400 mg) for cytokine release syndrome. Oxygen support was initiated. Ten days after pneumonia diagnosis, respiratory distress worsened, and she was admitted to the intensive care unit. On day +18, CPAP was initiated. Neutrophil engraftment was achieved on day +19. However, despite non-invasive respiratory support, progressive respiratory failure necessitated intubation. Shortly after intubation, the patient developed cardiac arrest and, despite CPR, she passed away. **DISCUSSION:** Patients undergoing allogeneic HSCT develop profound immunosuppression, predisposing them to opportunistic infections with high mortality. COVİD-19, which caused a global pandemic in 2020, has also emerged as a life-threatening infection in HSCT recipients[5]. Even after neutrophil engraftment, severe viral pneumonia-related mortality has been reported in transplant patients diagnosed with Covid-19[7]. When SARS-CoV-2 infection occurs in the very early post-transplant period, such as the first week, rapid clinical deterioration may occur due to insufficient immune response and cytokine dysregulation[8]. Multicenter studies have demonstrated that early post-HSCT Covid-19 infection is associated with high non-relapse mortality (NRM)[5],[9]. In our case, Covid-19 symptoms began in the early post-transplant phase and rapidly progressed to pneumonia. Despite neutrophil engraftment, the pulmonary disease worsened. This

finding is consistent with results reported during the pandemic period. Although immunosuppressive and cytokine-blocking therapies (steroids, tocilizumab) were administered, they failed to prevent mortality. **Conclusion:** Patients undergoing allogeneic HSCT and their caregivers should undergo comprehensive pre-transplant infectious disease screening. In addition, early initiation of cytokine-targeted therapies may play a role in reducing mortality in this high-risk patient population.

https://doi.org/10.1016/j.htct.2025.106154

PP 21

Autologous Transplant Alone Achieving Decade-Long Remission in AML: A Single-Center Two-Patient Case Report

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Introduction: Allogeneic HSCT is the conventional curative strategy in fit AML patients lacking favorable biology. Autologous HSCT (auto-HSCT) is rarely curative and is typically considered consolidation in selected complete remissions (CR). We report two adults with de novo AML who achieved and maintained extraordinarily long complete remissions after auto-HSCT as the sole transplant approach—highlighting potential patient-selection signals and the under-recognized curative potential of auto-HSCT in carefully chosen cases. **Methods:** This single-center, retrospective two-patient case report summarizes baseline features, induction/consolidation regimens, transplant details, and long-term outcomes from clinic records. Both patients received standard 7+3 induction, high-dose cytarabine (HiDAC) consolidation, and auto-HSCT due to the absence of suitable allogeneic donors. Follow-up included serial clinical assessment, complete blood counts, and routine biochemistry. **Results:** Case A (FM, male): Diagnosed 2017–2018 with AML; marrow blasts >20%. Immunophenotype at diagnosis included MPO positivity with CD34 −/CD117− profile. He achieved CR after 7+3 and completed four cycles of HiDAC. In 2008, he underwent auto-HSCT (G-CSF–mobilized peripheral blood). Engraftment was uneventful. Over serial evaluations he has remained in continuous first remission without relapse, secondary malignancy, or organ dysfunction. Current remission duration: 7+ years (2018→2025). Case B (MA,male): Diagnosed in 2010 with AML (marrow blasts ∼40%). After CR with 7+3 and HiDAC consolidation, lack of a matched donor prompted auto-HSCT the same year using mobilized peripheral blood stem cells. Early and late post-transplant courses were uncomplicated. He remains in continuous first remission with stable counts and no major late toxicities. Current remission duration: ∼15 years (2010→2025). **Discussion:** These two cases share three notable features. First, both achieved rapid CR to anthracycline–cytarabine induction and completed HiDAC—conditions associated with deeper molecular remissions and lower relapse risk. Second, in the absence of a donor, auto-HSCT alone consolidated remission and, in these patients, appears functionally curative across one and a half decades. Third, neither patient developed clinically significant late toxicities or second cancers during long follow-up. Although contemporary risk genomics were unavailable, the CD34-negative/MPO-positive phenotype in Case A and the brisk chemo-sensitivity in both suggest favorable disease biology. These observations reinforce that, for rigorously selected AML patients in high-quality CR—particularly when allografting is not feasible—auto-HSCT may deliver durable disease control approaching cure. The report is limited by the small sample size and absence of uniform molecular profiling; nonetheless, the remission lengths (≥15 and ≥17 years) are exceptional and educational. **Conclusion:** Two adults with AML achieved very long, ongoing first remissions (≈15 and >17 years) after autologous HSCT following 7+3 and HiDAC, without allogeneic rescue. In carefully selected CR patients lacking donors, auto-HSCT can be a valid, potentially curative strategy that merits consideration within individualized treatment algorithms.

https://doi.org/10.1016/j.htct.2025.106155

Adult Hematology Abstract Categories

Chronic Leukemias

PP 22

Richter Transformation with Spontaneous Splenic Hematoma: A Life-threatening Complication in Chronic Lymphocytic Leukemia

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Introduction: Richter transformation occurs when chronic lymphocytic leukemia transforms into aggressive lymphoma, most commonly diffuse large B-cell lymphoma (DLBCL), in approximately 5-10% of CLL patients. While typically presenting as rapidly enlarging lymph nodes, extranodal involvement can occur. Splenic transformation is uncommon, and spontaneous splenic hemorrhage represents an extremely rare, life-threatening complication requiring immediate recognition and intervention. **Case Report:** A 71-year-old female with established CLL presented with progressive abdominal pain, fatigue, and anorexia. She had previously received CLL-directed therapy with initial lymph node regression during follow-up. Physical examination revealed poor general condition, left upper quadrant tenderness with fullness, and minimal peripheral edema. No palpable lymphadenopathy was detected. Laboratory evaluation demonstrated cytopenias: hemoglobin 9.1 g/dL, leukocytosis $13.6 \times 10^3/\mu$L (lymphocyte-predominant), and thrombocytopenia $83 \times 10^3/\mu$L.

Coagulopathy was evident with prolonged PT (17.2 seconds) and elevated INR (1.46). Additional findings included suppressed TSH (0.07 mIU/L) suggesting hyperthyroidism and elevated ferritin (402 ng/mL). PET-CT performed on May 22, 2025, showed regression of previously enlarged cervical, axillary, iliac, and inguinal lymph nodes, indicating prior treatment response. However, a large hypermetabolic splenic lesion measuring 103 × 60 × 61 mm with SUVmax 32.82 was identified, with evidence of lateral capsular invasion. No bone marrow or hepatic FDG uptake was observed. Subsequent CT imaging on July 24, 2025, revealed alarming findings: intraparenchymal and subcapsular splenic hematoma with perihepatic, perisplenic, and pelvic free fluid consistent with hemoperitoneum. Additional incidental findings included a 17 mm right thyroid nodule and minimal left pleural effusion. Splenic tru-cut biopsy performed on July 17, 2025, confirmed diffuse large B-cell lymphoma with germinal center phenotype. Immunohistochemistry showed CD20(+), Bcl-2(+), Bcl-6 (+), MUM-1(+) with high proliferation index (Ki-67: 80%) and elevated c-Myc expression (60%). CD10 and CD5 were negative. The clinical constellation of findings confirmed Richter transformation with splenic DLBCL complicated by spontaneous splenic hemorrhage and hemoperitoneum, representing a medical emergency. **Discussion:** This case demonstrates an exceptionally rare presentation of Richter transformation. While most Richter transformations present with rapidly enlarging lymph nodes, isolated splenic involvement is uncommon. The extremely high SUVmax (32.82) indicated aggressive disease with high metabolic activity, consistent with high-grade DLBCL. The development of spontaneous splenic hematoma likely resulted from tumor infiltration weakening the splenic capsule and parenchyma, combined with underlying thrombocytopenia and coagulopathy. The resulting hemoperitoneum represents a life-threatening complication requiring urgent intervention. The coagulopathy and cytopenias observed may reflect both disease progression and splenic sequestration. The concurrent thyroid abnormalities warrant investigation for secondary malignancies or treatment-related complications. Management challenges include balancing the need for immediate treatment of aggressive lymphoma against the risk of exacerbating bleeding complications. Careful coordination between hematology, surgery, and radiology teams is essential for optimal outcomes. **Conclusion:** Richter transformation can present with rare but life-threatening complications including spontaneous splenic hemorrhage. High clinical suspicion, urgent imaging, and multidisciplinary management are crucial for patients with CLL developing new abdominal symptoms. This case underscores the importance of recognizing atypical presentations of Richter transformation to ensure prompt diagnosis and appropriate intervention.

https://doi.org/10.1016/j.htct.2025.106156

Adult Hematology Abstract Categories

Chronic Myeloproliferative Diseases

PP 23

CD56-Negative Conjunctival Solitary Extramedullary Plasmacytoma with Bence–Jones Lambda: Organ-Sparing Therapy and Durable Remission in a Young Adult

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Introduction: Solitary extramedullary plasmacytoma (EMP) accounts for a small fraction of plasma-cell neoplasms and rarely involves the conjunctiva. Distinguishing localized EMP from ocular adnexal lymphomas and reactive plasmacytosis is crucial, as management and prognosis differ substantially. We report a CD56-negative, lambda-restricted conjunctival EMP in a 27-year-old male with baseline Bence–Jones proteinuria, successfully treated with organ-sparing surgery plus orbital radiotherapy (RT) and maintained in remission at one year. **Methods:** This single-patient case review used prospectively recorded clinical data. Diagnostic workflow comprised ophthalmologic examination, complete blood count and chemistry, serum protein electrophoresis (SPEP) with immunofixation, 24-hour urine immunofixation, bone marrow aspirate/biopsy with immunohistochemistry (IHC), whole-body PET/CT, and brain/orbital MRI as indicated. Response was assessed clinically, biochemically (paraprotein clearance), and radiologically. **Results:** A painless, 1.5-cm vascular conjunctival mass was excised. Histology showed dense plasmacytic infiltration. IHC: CD38+, CD138+, lambda light-chain restriction, CD56−; B- and T-cell markers were non-diagnostic for lymphoma. SPEP showed no serum M-spike, while urine immunofixation revealed monoclonal lambda (Bence–Jones) positivity. Bone marrow morphology and flow cytometry demonstrated normal hematopoiesis without clonal plasma cells. PET/CT showed avid uptake confined to the conjunctival lesion; minor uptakes in stomach/sacrum lacked structural correlates. CRAB criteria were absent. Definitive local therapy consisted of adjuvant orbital RT (40 Gy in 20 fractions) after complete excision. Treatment was well tolerated. At 3 months, urine monoclonal lambda resolved; at 12 months, there was no local recurrence or new systemic disease clinically or on surveillance imaging/labs. **Discussion:** Key learning points include: (i) Localization and phenotype—conjunctival EMP is exceptional; CD56 negativity, while not universal, may be more frequent in extramedullary disease and can correlate with reduced bone tropism, supporting a truly localized process. (ii) Diagnostic clarity—lambda

restriction with CD38/CD138 positivity and absent marrow disease distinguishes EMP from ocular adnexal MALT lymphoma and IgG4-related disease. (iii) Therapeutic strategy—organ-sparing RT at 40–45 Gy achieves excellent control in EMP; here, 40 Gy sterilized the lesion and eliminated Bence–Jones proteinuria, implying the conjunctival clone was the source of the paraprotein. (iv) Surveillance—despite remission, EMP carries a risk of progression to multiple myeloma; our young patient remains on structured follow-up (periodic CBC, renal function, calcium, SPEP/IFE, serum free light chains, and symptom-directed imaging). **Conclusion:** This CD56-negative conjunctival EMP in a young adult underscores that meticulous staging can confirm true localization, enabling conservative surgery plus moderate-dose orbital RT to deliver durable biochemical and clinical remission. The rapid clearance of Bence–Jones lambda after RT highlights the curative potential of localized therapy while reinforcing the need for vigilant long-term monitoring.

https://doi.org/10.1016/j.htct.2025.106157

PP 24

TRANSFORMATION OF CHRONIC MYELOMONOCYTIC LEUKEMIA (CMML) INTO MYELOID SARCOMA: A RARE CASE WITH CERVICAL LYMPH NODE INVOLVEMENT

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Objective: Introduction: Chronic myelomonocytic leukemia (CMML) is a clonal hematologic malignancy with features of both myelodysplastic and myeloproliferative neoplasms [1]. Transformation into acute myeloid leukemia (AML) occurs in 15–20% of cases, while extramedullary presentation as myeloid sarcoma is exceedingly rare and associated with aggressive disease and poor prognosis [2,7]. **Case report: Case Presentation** A 64-year-old male diagnosed with CMML in 2024 was treated with azacitidine, achieving hematologic response after four cycles. Following the tenth cycle, he developed a cervical mass with compressive symptoms. Excisional biopsy confirmed myeloid sarcoma involving the cervical lymph node. Concurrent bone marrow analysis revealed 100% cellularity with grade 2/4 reticulin fibrosis, monocytic proliferation, and 15–16% blasts, consistent with CMML-2. Immunohistochemistry showed CD33+ and MPO+ staining, negative for CD34, CD117, and TdT. Systemic chemotherapy was planned, but the patient deteriorated rapidly with pneumosepsis and died. **Conclusion:** DiscussionExtramedullary transformation of CMML into myeloid sarcoma is a rare clinical event, with limited cases reported [3]. Diagnosis can be challenging due to morphologic overlap with lymphoma, underscoring the necessity of immunophenotypic confirmation [6]. Therapeutic options remain limited, ranging from AML-type induction regimens to hypomethylating agents combined with venetoclax, and allogeneic stem cell transplantation for eligible patients [4,5,8]. However, outcomes remain poor, with median survival after extramedullary progression of ~6 months [1,7].ConclusionThis case illustrates the rare transformation of CMML-2 into myeloid sarcoma with cervical lymph node involvement, highlighting diagnostic complexity, limited treatment options, and rapid disease progression. Early biopsy of new masses and bone marrow reassessment are crucial for timely diagnosis, while novel therapeutic strategies are urgently needed to improve outcomes.

https://doi.org/10.1016/j.htct.2025.106158

PP 25

Familial HFE Hemochromatosis in Two Siblings: Clinical Course and Response to Deferasirox

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Introduction: Hereditary hemochromatosis (HH) is an autosomal recessive disorder characterized by excessive intestinal absorption of iron and progressive iron overload. Clinical features may include hepatomegaly, cirrhosis, diabetes, cardiomyopathy, hypogonadism, and arthropathy. Diagnosis is based on transferrin saturation, serum ferritin, and confirmation by genetic testing. We present two siblings with homozygous HFE gene mutation who showed marked hyperferritinemia and a favorable response to oral deferasirox therapy. **Methods (Case Presentation):** A 40-year-old male presented to the hematology outpatient clinic on January 17, 2025, with elevated ferritin levels. His 48-year-old brother had been diagnosed with primary hereditary hemochromatosis in 2011. The elder sibling was treated with oral desferrioxamine (1 × 3 tablets daily) for several years but discontinued therapy in 2020 and remained untreated thereafter. Genetic analysis demonstrated that both siblings carried the HFE c.187C>G (p.His63Asp) homozygous mutation. At presentation, the proband's serum ferritin level was 1845 ng/mL, while his brother's level exceeded 1600 ng/mL. Both patients were started on oral deferasirox at a dose of 20 mg/kg/day (1 × 6 tablets). Regular laboratory follow-up was conducted every 4–6 weeks. **Results:** After initiation of deferasirox, both siblings demonstrated significant biochemical improvement. • The proband's ferritin decreased from 1845 ng/mL to 1090 ng/mL within three months. • The elder sibling's ferritin declined from >1600 ng/mL to 945 ng/mL in the same period. Both patients tolerated the medication well, without major adverse events. No hepatic decompensation, cardiac dysfunction, or endocrine complications were observed during follow-up. **Discussion:** This familial case illustrates several important points. First, family history and genetic testing remain critical tools in early recognition of hereditary hemochromatosis. The diagnosis in the younger sibling was established promptly because of the known history in his elder brother. Second, although phlebotomy remains the standard of care in HH, oral iron chelators such as deferasirox may be

effective alternatives, particularly in patients where phlebotomy is less feasible. In both siblings, ferritin levels declined substantially with deferasirox monotherapy. Third, interruption of treatment, as seen in the elder sibling, allows ferritin to rise again, underlining the importance of sustained long-term management. **Conclusion:** We report two siblings with homozygous HFE-related hereditary hemochromatosis and significant hyperferritinemia. Both responded favorably to deferasirox therapy with substantial reductions in ferritin levels. These findings emphasize the value of family screening, genetic testing, and consistent treatment in the management of hereditary hemochromatosis.

https://doi.org/10.1016/j.htct.2025.106159

Adult Hematology Abstract Categories

Lymphoma

PP 26

From CD5-Negative Indolent B-Cell LPD to Therapy-Related CLL/SLL with Unmutated IGHV After Breast Cancer: Rationale for BTK-Inhibitor–Based First-Line Therapy

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Introduction: Therapy-related chronic lymphocytic leukemia/small lymphocytic lymphoma (t-CLL/SLL) is uncommon compared with therapy-related AML/MDS. We report a breast-cancer survivor who evolved from a CD5-negative low-grade B-cell lymphoproliferative disorder (LPD) to classical CLL/SLL with **unmutated IGHV**, underscoring why targeted BTK inhibition may supersede chemo-immunotherapy in this setting. **Methods:** Single-patient case review of prospectively collected data. We extracted longitudinal clinical, imaging (PET-CT), bone-marrow histology, multiparameter flow cytometry, and cytogenetics (FISH, IGHV mutation testing). Treatment decisions were individualized by a multidisciplinary team. **Results:** A 1959-born woman had invasive ductal breast carcinoma (2009) treated with adriamycin–cyclophosphamide, weekly paclitaxel, and radiotherapy, achieving long-term remission. In 2018 bone marrow was normal; in 2019 splenectomy for progressive splenomegaly revealed florid follicular hyperplasia. Between 2020–2022, bone-marrow biopsies showed a **low-grade B-cell LPD** ($CD20^+$, **CD5–/CD23–/CD10–**), managed with **rituximab–bendamustine (8 cycles)**, yielding metabolic complete remission. In 2025 she re-presented with profound fatigue and anemia. Labs showed marked lymphocytosis (WBC 46×10^9/L), hemoglobin severely reduced, and PET-CT consistent with medullary disease. Bone marrow showed **40–50%** intertrabecular lymphoid infiltration. **Flow cytometry now demonstrated classical CLL/SLL** ($CD19^+$, $CD20^+$, **$CD5^+$, $CD23^+$**, κ-restriction). Molecular work-up: **IGHV unmutated**; FISH: **monoallelic del(13q)**; **del(17p)/del(11q) negative**. Given prior anthracycline exposure/radiation and the high-risk biology conferred by unmutated IGHV despite isolated 13q deletion, the tumor board selected **acalabrutinib plus rituximab** rather than re-exposure to chemo-immunotherapy. Transfusion support and infection prophylaxis accompanied therapy planning. **Discussion:** This case is notable for: (i) **Therapy-related CLL/SLL** emerging years after breast-cancer treatment—an under-recognized survivorship risk; (ii) **Phenotypic evolution** from an initially **CD5-negative** indolent B-cell LPD to **typical $CD5^+$/$CD23^+$ CLL/SLL**, highlighting clonal drift and the need for repeat immunophenotyping at relapse; (iii) **Risk adjudication** where **unmutated IGHV** outweighs the generally favorable isolated **13q deletion**, steering first-line choice away from bendamustine-rituximab toward **BTK-inhibitor–based therapy**; and (iv) pragmatic considerations in a previously anthracycline-exposed patient, favoring targeted agents for efficacy and tolerability. Educationally, the case adds to scarce real-world documentation of t-CLL, illustrates immunophenotypic switch over time, and provides a clear management rationale aligned with modern risk biology. **Conclusion:** In this therapy-related CLL/SLL with **unmutated IGHV** and prior breast-cancer treatment, **acalabrutinib + rituximab** was selected as the preferred front-line strategy over chemo-immunotherapy. The case emphasizes the importance of serial phenotyping and genomics to detect evolution and to personalize therapy in cancer survivorship.

https://doi.org/10.1016/j.htct.2025.106160

PP 27

ISOLATED SPLENIC RELAPSE IN CLASSICAL HODGKIN LYMPHOMA: A CHALLENGING CASE REQUIRING NOVEL THERAPEUTIC APPROACHES

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Case Report: A 63-year-old male initially presented in 2024 with splenomegaly and was diagnosed with classical Hodgkin lymphoma following tru-cut biopsy. Immunohistochemistry confirmed CD30+, PAX5+, and MUM1+ Reed-Sternberg cells with negative CD3, CD20, and LCA expression. Initial staging revealed isolated splenic involvement without mediastinal or peripheral lymph node involvement. The patient received standard ABVD chemotherapy (adriamycin, bleomycin, vinblastine, dacarbazine) with concurrent rituximab therapy. Treatment resulted in partial response with persistent residual splenic lesions despite completing the planned regimen. In June 2025, surveillance PET-CT demonstrated disease progression with a 5-cm splenic mass showing intense metabolic activity (SUVmax: 17.2) without involvement of other anatomical sites. Bone marrow biopsy revealed 50% cellularity with normal hematopoiesis, reticulin score 0/4, negative CD30, and sparse PAX5 positivity, confirming absence of bone marrow involvement. Repeat splenic tru-cut biopsy confirmed relapsed classical Hodgkin lymphoma with characteristic immunophenotype: CD30+, PAX5+, MUM1+, GATA3+ with negative CD3, CD20, and LCA, consistent with the

original diagnosis. Cardiac evaluation revealed preserved ejection fraction (65%) with mild left ventricular diastolic relaxation abnormality, indicating reasonable cardiac reserve but potential limitations for intensive chemotherapy regimens. Given the patient's age (63 years), cardiac status, and previous treatment exposure, he was deemed unsuitable for conventional high-dose salvage chemotherapy followed by ASCT. The isolated nature of splenic relapse and excellent performance status made him an ideal candidate for novel targeted approaches. Treatment planning focused on brentuximab vedotin-based combination therapy, specifically BV plus bendamustine, given the CD30+ phenotype and the patient's clinical profile. Alternative regimens including BV plus ICE or BV plus nivolumab were considered as backup options. The treatment strategy included 2-4 cycles of BV-based therapy with interim PET-CT response assessment. Achievement of PET-negative status would prompt consideration of ASCT consolidation if the patient's performance status improved, or continuation with BV maintenance or immunotherapy with nivolumab if transplant remained contraindicated. **Discussion:** This case illustrates several important aspects of relapsed Hodgkin lymphoma management. Isolated splenic relapse represents an uncommon pattern that may result from inadequate initial therapy or inherent disease biology. The patient's age and cardiac comorbidities precluded standard intensive salvage approaches, highlighting the need for effective, well-tolerated alternatives. Brentuximab vedotin, an anti-CD30 antibody-drug conjugate, has demonstrated significant efficacy in relapsed/refractory Hodgkin lymphoma, with response rates exceeding 70% in various combination regimens. The choice of BV plus bendamustine reflects a balance between efficacy and tolerability, particularly suitable for older patients. The isolated splenic presentation also raises consideration of surgical management. Splenectomy could be considered if systemic therapy fails, though the preference remains for systemic approaches given potential for occult disease. **Conclusion:** Isolated splenic relapse in classical Hodgkin lymphoma requires individualized treatment approaches, particularly in elderly patients. Brentuximab vedotin-based combinations offer effective alternatives to intensive chemotherapy, demonstrating the evolving landscape of lymphoma therapy toward more targeted, personalized treatment strategies.

https://doi.org/10.1016/j.htct.2025.106161

PP 28

SEQUENTIAL DEVELOPMENT OF DIFFUSE LARGE B-CELL LYMPHOMA FOLLOWING SUCCESSFUL HAIRY CELL LEUKEMIA TREATMENT: A CASE REPORT WITH COMPLETE REMISSION

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Case Report: A 53-year-old male from Samandağ presented in early 2024 with progressive anemia, fatigue, and splenomegaly. Laboratory evaluation revealed pancytopenia with atypical lymphoid cells on peripheral smear and mildly elevated LDH. Physical examination confirmed palpable splenomegaly without lymphadenopathy. Bone marrow biopsy performed on August 5, 2024, demonstrated classic hairy cell leukemia with characteristic immunophenotype: CD20+, CD103+, CD25+, Annexin A1+, TRAP+ with negative CD3, CD5, CD23, and CD34. Flow cytometry confirmed 8-10% clonal B-cell population with CD103+, CD25+, CD11c+ expression and aberrant kappa/lambda ratio, establishing HCL diagnosis. Treatment was initiated with rituximab plus cladribine combination therapy along with G-CSF support and prophylactic antifungal therapy. Post-treatment evaluation on September 17, 2024, demonstrated exceptional response with complete disappearance of all HCL-specific phenotypic markers (0% residual disease) and minimal CD20+ cells (1.8%) reflecting rituximab effect. Bone marrow biopsy confirmed morphologic remission. Imaging showed dramatic spleen size reduction from 22 cm to 14 cm with regression of retroperitoneal lymphadenopathy. Eight months later, in April-May 2025, the patient developed B-symptoms including persistent fever, weight loss, and dyspnea. HRCT and PET-CT revealed concerning new findings: left lower lobe pulmonary lesion with intense metabolic activity (SUVmax: 34.07), mediastinal involvement (SUVmax: 16.13), and new abdominal lymphadenopathy (SUVmax: 7-10). Lung biopsy performed on June 16, 2025, revealed diffuse large B-cell lymphoma with non-germinal center phenotype: CD20+, PAX5+, Bcl-6+, MUM1+ with extensive Bcl-2 expression (95%) and low c-Myc expression (10%), confirming systemic DLBCL diagnosis. Standard R-CHOP chemotherapy (six cycles) was administered from July through November 2025. The patient tolerated treatment well with only mild neutropenia as significant toxicity. Post-treatment PET-CT demonstrated complete metabolic remission with disappearance of all metabolically active lesions, achieving Deauville score ≤ 2. At current follow-up, the patient remains in complete remission from both malignancies with excellent performance status and no evidence of disease recurrence. **Discussion:** This case represents a rare scenario of sequential B-cell malignancies with successful treatment outcomes for both conditions. The eight-month interval between HCL remission and DLBCL development, combined with distinct immunophenotypes, suggests either treatment-related secondary malignancy or activation of a dormant malignant clone rather than clonal evolution. The non-germinal center DLBCL phenotype with high Bcl-2 expression indicates aggressive biology requiring prompt intervention. The excellent response to standard R-CHOP therapy demonstrates that DLBCL following HCL treatment responds comparably to de novo DLBCL, supporting conventional treatment approaches. This case emphasizes the critical importance of long-term surveillance in HCL patients, as secondary malignancies can develop despite achieving complete remission. The development of new constitutional symptoms or imaging abnormalities warrants thorough evaluation for secondary malignancies. **Conclusion:** Sequential development of DLBCL following successful HCL treatment represents a rare but treatable clinical scenario. Standard DLBCL therapy remains highly effective in this setting, achieving complete remission comparable to de novo cases. This case underscores the

importance of continued surveillance in HCL survivors and demonstrates excellent outcomes with appropriate treatment of secondary lymphomas.

https://doi.org/10.1016/j.htct.2025.106162

PP 29

High FDG Uptake in Low-Grade Follicular Lymphoma: A Clinico-Radiologic Discordance Case

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Case Report: A 53-year-old female presented with a 2-month history of progressive, painless left axillary mass without B-symptoms (fever, night sweats, weight loss). Medical history was unremarkable without chronic diseases, previous malignancy, or family history of cancer. Physical examination revealed good general condition with stable vital signs. A 3-cm, rubbery, mobile lymph node was palpated in the left axilla without other palpable lymphadenopathy. Abdominal examination demonstrated mild hepatomegaly (2 cm below costal margin) without splenomegaly. Laboratory evaluation showed normal complete blood count (Hb: 12.5 g/dL, WBC: 6.3×10^9/L, PLT: 220×10^9/L) with mildly elevated LDH (270 U/L). Renal and hepatic function tests were normal, and viral serologies were negative. PET-CT imaging revealed significant findings: left axillary lymphadenopathy (30×22 mm) with SUVmax 9.12, mediastinal involvement in para-aortic and aortopulmonary regions (SUVmax: 5.89), bilateral apical pulmonary nodules (7.5 mm) with low FDG uptake, and a hypodense hepatic lesion (15×12 mm) with mild FDG uptake. No splenic involvement or bone metastases were detected. Excisional biopsy of the left axillary lymph node confirmed follicular lymphoma, grade 1-2 according to WHO 2016 criteria. Immunohistochemistry demonstrated CD20(+), CD23(+), with negative CD5 and cyclin D1, consistent with follicular lymphoma. Critically, Ki-67 proliferation index was only 10%, indicating low proliferative activity. Bone marrow examination showed normal hematopoiesis with reticulin grade 0/4, negative amyloid staining, and no evidence of lymphomatous infiltration. Based on Lugano criteria, the patient was staged as advanced disease (stage IIIA-IIIB) due to mediastinal involvement and hepatomegaly. Discussion: This case presents a striking clinico-radiologic discordance between low-grade histological features and high metabolic activity. The SUVmax of 9.12 is unusually high for grade 1-2 follicular lymphoma, typically associated with more aggressive histologies or transformed lymphomas. Several mechanisms may explain this phenomenon. First, inflammatory microenvironment within lymph nodes can increase FDG uptake independent of tumor grade. Second, early transformation to diffuse large B-cell lymphoma may be focal and missed on single biopsy sampling. Third, some low-grade lymphomas may exhibit metabolically active behavior without histological transformation. The management approach requires careful consideration. While current guidelines recommend "watch and wait" for asymptomatic, low tumor burden indolent FL, the high metabolic activity and advanced stage disease create uncertainty. Options include close surveillance with repeat biopsy if progression occurs, rituximab monotherapy, or combination therapy with R-CHOP or R-bendamustine for bulky/symptomatic disease. The hepatomegaly and mediastinal involvement, combined with high SUVmax, may favor earlier intervention despite the indolent histology and absence of B-symptoms. Conclusion: High FDG uptake in low-grade follicular lymphoma represents a rare clinico-radiologic discordance that challenges standard management algorithms. This case emphasizes the importance of integrating clinical, histological, and radiological findings in lymphoma management and suggests the need for individualized treatment approaches when conventional parameters conflict. Close monitoring with consideration for earlier intervention may be warranted in such cases.

https://doi.org/10.1016/j.htct.2025.106163

PP 30

Indolent Follicular Lymphoma with "Hot" PET: A Clinic–Radiologic Mismatch That Challenges Early Treatment vs Watchful Waiting

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Introduction: Follicular lymphoma (FL) grade 1–2 typically behaves indolently and is often managed with watchful waiting when tumor burden is low. However, moderately high FDG uptake on PET-CT may suggest biological heterogeneity or incipient transformation despite low-grade histology, creating a management dilemma. We report a patient with biopsy-proven FL grade 1–2 and unexpectedly "hot" PET signals, illustrating decision points between immediate therapy and surveillance. **Methods:** Single-patient case report. We reviewed clinical data, laboratory tests, excisional lymph-node histology with immunohistochemistry (IHC), bone marrow (BM) evaluation, and whole-body PET-CT at diagnosis. Management decisions were based on symptoms, tumor burden, and longitudinal imaging. **Results:** A 53-year-old woman presented with a painless, mobile left axillary mass detected 2 months earlier. She denied fever, drenching night sweats, or weight loss. Physical exam revealed a ~3 cm left axillary node; no hepatosplenomegaly or other palpable lymphadenopathy. PET-CT demonstrated a **30 × 22 mm** left axillary node with **SUVmax 9.12**, additional mediastinal paraaortic/aortopulmonary nodes (**SUVmax 5.89**), and tiny bilateral apical lung nodules with low uptake. The liver contained a **15 × 12 mm** hypodense lesion with faint FDG avidity and mild hepatomegaly; spleen and adrenals were normal; bone involvement was absent. Excisional node biopsy showed **classical FL, grade 1–2**. IHC: **CD20+**, **CD23+**, **CD5–**, **Cyclin D1–**; **Ki-67 ≈10%**. BM aspirate/biopsy exhibited normal hematopoiesis with **no lymphoma infiltration** (reticulin 0/4; amyloid negative). Baseline blood counts and biochemistry were within

reference limits except for a mildly elevated LDH. Composite staging favored **advanced-stage (IIIA–IIIB) FL** owing to mediastinal involvement and hepatomegaly, yet **clinical tumor burden was low**: solitary bulky node absent, no B symptoms, preserved counts, and no organ compromise. Given the discrepancy—**indolent histology with relatively high axillary SUV**—management options were discussed. Because transformation was not proven (low Ki-67, no high-grade features on biopsy, and no PET focus >10 with structural suspicion elsewhere), we selected **watchful waiting** with close clinical and PET/CT surveillance, reserving therapy for symptomatic progression, GELF high-tumor-burden criteria, rising SUVs or node growth, or any histologic evidence of transformation (repeat biopsy triggered by interval changes). Single-agent rituximab or R-based chemoimmunotherapy would be considered if progression occurs. **Discussion:** This case highlights a **clinic–radiologic mismatch**: low-grade FL with **SUVmax ~9** in the index node. While high SUVs in FL can raise concern for transformation, histology and low proliferation argued against immediate cytotoxic therapy. In asymptomatic, low-burden FL, **watch-and-wait remains appropriate**, provided that surveillance is disciplined and **re-biopsy is performed for PET-dominant changes** or clinical progression. Educationally, the case underscores the limits of relying on SUV alone, the centrality of tissue confirmation, and the value of individualized triggers for treatment versus observation. **Conclusion:** In FL grade 1–2 with "hot" PET but low clinical burden, **structured watchful waiting with planned re-biopsy on interval change** can safely balance overtreatment risks against the need to detect transformation early.

https://doi.org/10.1016/j.htct.2025.106164

PP 31

Mantle Cell Lymphoma Presenting with Gastrointestinal Bleeding in an Elderly Patient: A Case of Stage IV Disease Treated with Rituximab Monotherapy

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Case Report: An 85-year-old male presented with progressive fatigue and melena over several weeks. His medical history was notable for advanced age with overall frailty but no significant comorbidities. Physical examination revealed poor general condition with pallor and mild dehydration. No palpable lymphadenopathy, hepatomegaly, or splenomegaly was detected on initial examination. Laboratory evaluation demonstrated severe anemia (hemoglobin 8.1 g/dL, hematocrit 27%) with significant leukocytosis (20.9×10^9/L) and marked monocytosis (46%). Platelet count remained normal (181×10^9/L). Additional findings included hypoalbuminemia (28.5 g/L), elevated LDH (218 U/L), and moderate renal impairment (creatinine 1.23 mg/dL, eGFR 53 mL/min). Endoscopic evaluation revealed erosive pangastritis with antral and duodenal ulcers. Colonoscopy identified a 3.5-4 cm ulcerative, polypoid mass in the cecum with additional rectal involvement prompting biopsy. Histopathological examination of gastrointestinal biopsies confirmed mantle cell lymphoma with characteristic immunophenotype: CD20(+), Cyclin D1(+), SOX11(+), BCL2(+), and CD43(+) with negative CD3, CD5, and CD23. The Ki-67 proliferation index was 20%, indicating moderate proliferative activity. PET-CT staging revealed extensive disease with widespread lymphadenopathy involving cervical, axillary, mediastinal, retroperitoneal, and pelvic regions. Gastrointestinal involvement showed intense FDG uptake (SUVmax 12.1) in cecum and rectum. Diffuse hepatic and splenic involvement was present along with diffuse bone marrow uptake, establishing stage IV disease. Given the patient's advanced age (85 years), frailty, history of gastrointestinal ulceration, and moderate renal impairment, intensive chemotherapy regimens were deemed inappropriate. Treatment was initiated with rituximab monotherapy (626 mg every 28 days) with antiemetic prophylaxis. BTK inhibitor therapy was considered but deferred due to high bleeding risk given active gastrointestinal ulceration. Supportive care included proton pump inhibitor therapy and red blood cell transfusions as needed. The patient demonstrated good tolerance to rituximab therapy with early symptomatic improvement and stabilization of hematological parameters. **Discussion:** This case illustrates several important aspects of MCL management in elderly patients. The presentation with gastrointestinal bleeding and extensive disease is typical for MCL, which frequently involves the GI tract at diagnosis. The moderate Ki-67 proliferation index (20%) suggested less aggressive biology, supporting a less intensive treatment approach. The decision to use rituximab monotherapy reflects the growing recognition that treatment intensity must be individualized based on patient fitness and comorbidities. While intensive regimens like hyperCVAD or Nordic protocols achieve superior outcomes in younger patients, they carry prohibitive toxicity in frail elderly populations. Rituximab monotherapy has shown activity in MCL with response rates of 40-60% and manageable toxicity profiles, making it suitable for elderly, frail patients. The early tolerance and symptomatic improvement observed support this approach. **Conclusion:** MCL management in elderly, frail patients requires individualized treatment decisions balancing disease control with quality of life. Rituximab monotherapy represents a reasonable option for patients unsuitable for intensive chemotherapy, providing disease control with acceptable toxicity. This case demonstrates the feasibility of this approach in carefully selected patients.

https://doi.org/10.1016/j.htct.2025.106165

Adult Hematology Abstract Categories

Myeloma

PP 32

Secondary Primary Malignancy in Multiple Myeloma: Prostate Adenocarcinoma Following Long-term Lenalidomide Maintenance Therapy

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Introduction: Multiple myeloma patients have an increased risk of developing secondary primary malignancies, with reported incidence ranging from 3-20% depending on treatment regimens and follow-up duration. Lenalidomide maintenance therapy following autologous stem cell transplantation significantly improves progression-free survival but carries potential long-term risks including secondary malignancies. While hematologic secondary malignancies are well-documented, solid tumor development during lenalidomide maintenance is less frequently reported but increasingly recognized. Case Report: A 73-year-old male initially presented in 2016 with fatigue, bone pain, and normocytic anemia. Laboratory evaluation revealed IgG-kappa multiple myeloma with positive serum M-protein, elevated free light chain kappa/lambda ratio, and 40% plasma cell infiltration on bone marrow biopsy. Imaging demonstrated extensive osteolytic lesions without renal involvement. Family history was negative for malignancy, and the patient had no smoking history or significant comorbidities. Initial treatment consisted of bortezomib, lenalidomide, and dexamethasone (VRD) induction therapy from 2016-2017. Following excellent response, the patient underwent high-dose melphalan conditioning and autologous stem cell transplantation in 2017 without complications. Lenalidomide maintenance therapy (10 mg daily) was initiated in 2018, with regular hematology follow-up demonstrating sustained remission through 2023. During routine surveillance in 2024, elevated PSA (8.4 ng/mL) was detected, prompting urological evaluation. Prostate biopsy performed on August 20, 2024, revealed adenocarcinoma in two locations: right apex showing Gleason 6 (3+3), Grade Group 1 with 20% tumor involvement, and right basal region with Gleason 6 (3+3), Grade Group 1 with 5% tumor involvement. Remaining biopsy cores showed benign prostate tissue. Immunohistochemistry with high molecular weight keratin confirmed the diagnosis. Computed tomography on January 27, 2025, demonstrated prostatomegaly (64×51 mm), right renal pelvic dilatation ($\sim$3 cm) with 4 mm right ureteral stone, 4 mm left renal cyst, and multiple enlarged periaortic and peripancreatic lymph nodes, raising concern for advanced prostate cancer or possible myeloma progression. The patient continued to show no evidence of myeloma progression with maintained remission status throughout this period. However, the constellation of prostatic enlargement and lymphadenopathy suggested either advanced prostate cancer or concurrent disease processes requiring careful differentiation. Discussion: This case illustrates several important clinical considerations in long-term multiple myeloma survivorship. The development of prostate adenocarcinoma following 6 years of lenalidomide maintenance raises questions about treatment-related secondary malignancy risk. While lenalidomide-associated secondary malignancies typically manifest as hematologic disorders, solid tumors including prostate cancer have been reported with increasing recognition. The clinical challenge lies in distinguishing between prostate cancer progression and myeloma relapse, particularly given the lymphadenopathy observed on imaging. The patient's sustained myeloma remission suggests the lymph node enlargement may represent prostate cancer dissemination rather than plasma cell dyscrasia. The low-grade nature of the prostate adenocarcinoma (Gleason 6) typically indicates indolent disease, but the substantial prostatic enlargement and lymphadenopathy suggest more advanced local disease requiring comprehensive staging and multidisciplinary treatment planning. Conclusion: This case demonstrates the importance of comprehensive long-term surveillance for secondary primary malignancies in multiple myeloma patients receiving lenalidomide maintenance therapy. The development of solid tumors, particularly prostate cancer, warrants systematic screening and multidisciplinary management to optimize outcomes while maintaining myeloma disease control.

https://doi.org/10.1016/j.htct.2025.106166

PP 33

AL Amyloidosis Presenting with Cardiac Involvement in a 43-Year-Old Woman with Oligosecretory Multiple Myeloma

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Objective: Introduction: AL amyloidosis results from deposition of misfolded immunoglobulin light chains in various organs, with cardiac involvement occurring in approximately 60-70% of cases. Cardiac amyloidosis typically presents with heart failure symptoms and distinctive echocardiographic features including increased wall thickness, "sparkling" myocardium appearance, and restrictive physiology. While commonly associated with multiple myeloma, oligosecretory variants can pose diagnostic challenges due to minimal or absent monoclonal protein secretion in serum. **Case Report:** A 43-year-old female presented with progressive palpitations, dyspnea, fatigue, and peripheral edema. Initial evaluation by cardiology revealed significant cardiac abnormalities prompting comprehensive investigation. Echocardiography demonstrated characteristic findings highly suggestive of cardiac amyloidosis: concentric left ventricular hypertrophy with "sparkling" myocardium appearance, restrictive diastolic

pattern, biatrial enlargement, moderate tricuspid regurgitation, and mild pulmonary hypertension. The constellation of findings was inconsistent with hypertensive heart disease, raising suspicion for infiltrative cardiomyopathy. Given the typical echocardiographic appearance, the patient was referred to hematology for amyloidosis evaluation. Laboratory assessment revealed elevated inflammatory markers (CRP: 59-74 mg/L) but notably, serum protein electrophoresis showed no distinct M-band. However, serum immunofixation was positive only for lambda light chains with negative IgA, IgG, and IgM, suggesting an oligosecretory plasma cell disorder. Bone marrow biopsy revealed 40% plasma cell infiltration with immunophenotype showing CD38(+), CD56(+), and CD19 (-) with lambda light chain restriction. Critically, Congo red staining was positive, confirming amyloid deposition and establishing the diagnosis of AL amyloidosis. Cytogenetic analysis by FISH was negative for high-risk abnormalities including p53 deletion, RB1 deletion, t(11;14), and t(4;14). Additional imaging revealed multisystem involvement: chest CT showed ground-glass opacities in lower lobes with reactive mediastinal lymphadenopathy, while abdominal ultrasound demonstrated grade 1 hepatosteatosis, minimal splenomegaly, and mild ascites, consistent with systemic amyloid deposition. The patient's medical history was notable for appendiceal mucinous neoplasm in 2022, raising questions about potential relationships between these conditions. Clinical presentation included progressive heart failure symptoms with peripheral edema, confirming cardiac involvement as the primary manifestation. **Discussion:** This case illustrates several important clinical aspects of AL amyloidosis. The presentation in a 43-year-old patient is relatively uncommon, as AL amyloidosis typically affects older adults with median age around 65 years. The cardiac-predominant presentation with characteristic echocardiographic findings enabled early recognition and appropriate referral. The oligosecretory nature of the underlying plasma cell dyscrasia initially complicated diagnosis, as conventional serum protein studies were unrevealing. This emphasizes the importance of comprehensive light chain analysis in suspected cases, as oligosecretory variants can account for up to 15% of cases. The "sparkling" myocardium appearance on echocardiography, while not pathognomonic, represents a classic finding in cardiac amyloidosis resulting from increased acoustic reflectance of amyloid-infiltrated myocardium. Combined with restrictive physiology and biatrial enlargement, these findings strongly suggest amyloid cardiomyopathy. The multisystem involvement demonstrated by imaging studies indicates advanced disease requiring prompt treatment initiation. Cardiac amyloidosis carries poor prognosis without treatment, with median survival often less than one year in symptomatic patients.

https://doi.org/10.1016/j.htct.2025.106167

PP 34

High-Risk IgA-κ Myeloma with Sacral Mass in a 31-Year-Old: Deep Response to Daratumumab −Lenalidomide−Dexamethasone plus Local RT without ASCT

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Introduction: Multiple myeloma (MM) in young adults is uncommon, and high-risk cytogenetics complicate standard pathways. We report a 31-year-old woman with IgA-κ MM, large sacral involvement, and adverse genetics, achieving a deep remission with daratumumab−lenalidomide−dexamethasone (DRd) plus focal radiotherapy (RT), electing to defer autologous transplant. **Methods:** Single-patient case review from prospectively maintained records. Data included presenting features, MRI/PET-CT, serum/urine monoclonal studies, bone-marrow histology/flow, and plasma-cell FISH. Treatment, response, and tolerability were documented. **Results:** A previously healthy 31-year-old presented with severe nocturnal lumbosacral pain and right-sciatic radiation. MRI revealed a left-lateral sacral mass (77 × 56 mm) with contrast enhancement; PET-CT demonstrated focal hypermetabolic lytic lesions in sacrum, L1, pubis, and scapula (SUVmax 5.4−5.9), with no visceral/extramedullary organ disease. Serum studies showed an IgA-κ M-component with elevated free light-chain ratio; β2-microglobulin was 4.2 mg/L (ISS stage II). Bone-marrow biopsy displayed intertrabecular plasma-cell infiltration; immunophenotype CD38+, CD56+, κ-restricted, CD19−; reticulin 0−1/4; amyloid negative. Plasma-cell FISH identified t(14;20)(IGH−MAFB) in ∼35% of cells, indicating high-risk disease. She commenced DRd and received concurrent local RT to the sacrum (fractionated) for rapid pain control. Treatment was well tolerated, without renal or calcium derangements. Clinically, pain resolved; biochemically, the M-component cleared; radiologically, bone foci regressed with disappearance of pathologic uptake on interval imaging. Bone-marrow reassessment showed marked reduction of clonal plasma cells, consistent with deep response. Given age, recovery, and patient preference, autologous transplant was performed; she continued maintenance (daratumumab ± lenalidomide) with sustained remission on follow-up. **Discussion:** This case underscores four practice points. (1) Aggressive osseous disease at young age can herald high-risk biology; early, integrated MRI/PET staging captures true burden and guides focal RT for symptom control while systemic therapy acts on disseminated marrow disease. (2) Immunophenotype and marrow context (CD38 +/CD56+, κ-restriction; low reticulin) affirmed clonal

plasmacytosis consistent with MM rather than solitary plasmacytoma or IgG4-related processes. (3) Cytogenetic risk—notably t(14;20)—supports intensified monoclonal-antibody –based induction (DRd) and vigilant surveillance, as this lesion associates with inferior outcomes on IMiD/PI-only backbones. (4) In select young patients achieving deep remission, deferring ASCT after robust daratumumab-based induction and consolidative RT can be reasonable when aligned with patient values and close monitoring—especially if toxicity, fertility considerations, or personal preference weigh heavily. **Conclusion:** Young-onset, high-risk IgA-κ MM with a large sacral mass achieved a durable, deep remission on DRd plus focal RT, permitting ASCT deferral with maintenance therapy and sustained disease control. Pairing comprehensive imaging with cytogenetic risk and early antibody-based induction may optimize outcomes in comparable high-risk, bone-predominant presentations.

https://doi.org/10.1016/j.htct.2025.106168

PP 35

FAMILIAL MULTIPLE MYELOMA: SIBLING CASES WITH DISTINCT CLINICAL MANIFESTATIONS

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Introduction: Multiple myeloma (MM) is a malignant plasma cell disorder that typically occurs sporadically. Familial clustering is rare, with only a limited number of cases reported worldwide. Such familial presentations suggest a possible hereditary predisposition or shared environmental risk factors contributing to disease development [1,2]. Here, we present two siblings with distinct plasma cell neoplasms: one with recurrent extramedullary plasmacytoma and the other with multiple myeloma. **Case Presentation:** The first case was a 69-year-old woman who underwent surgery in 2017 for a proximal femoral mass, diagnosed as plasmacytoma. In 2024, she presented with a cervical swelling; excisional biopsy of a right level-5 lymph node again revealed plasmacytoma. Bone marrow biopsies performed at that time did not show features of multiple myeloma. Her brother, one year older, was diagnosed with multiple myeloma in June 2025. PET-CT revealed lytic lesions in the axial skeleton, and systemic therapy was initiated. **Discussion:** Familial occurrence of plasma cell neoplasms is exceedingly uncommon. Reported cases often involve either multiple relatives with MM or, less frequently, different manifestations of plasma cell disorders within the same family [3,4]. The present siblings illustrate divergent clinical phenotypes: persistent extramedullary plasmacytoma without myeloma progression in the sister, versus classical MM with lytic bone disease in the brother. This highlights the potential role of shared genetic background with variable penetrance and expression. Genetic susceptibility loci, immune dysregulation, and epigenetic mechanisms have all been proposed as contributors to familial myeloma [5]. Recognizing such familial patterns may have implications for surveillance strategies in high-risk relatives. **Conclusion:** We report a rare familial clustering of plasma cell neoplasms in siblings, underlining the importance of considering hereditary predisposition in plasma cell disorders. Further genetic and epidemiological studies are warranted to elucidate the underlying mechanisms.

https://doi.org/10.1016/j.htct.2025.106169

PP 36

ACQUIRED PYRUVATE KINASE DEFICIENCY FOLLOWED BY MYELODYSPLASTIC SYNDROME: A CASE REPORT

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Introduction: Pyruvate kinase (PK) deficiency is an autosomal recessive red blood cell (RBC) enzymopathy leading to chronic hemolysis. It is the second most common RBC enzymopathy and the most frequent cause of chronic hemolytic anemia due to an enzyme defect. PK enzymes consist of various isoforms encoded by PKLR and PKM genes, which catalyze the conversion of phosphoenolpyruvate (PEP) to pyruvate and ATP in the final step of glycolysis. Clinically significant PK deficiency is associated with PKLR mutations. Acquired PK deficiency is extremely rare, and its molecular basis remains unclear. Some cases have been associated with AML. Here we present a rare case of acquired PK deficiency followed by myelodysplastic syndrome (MDS). **Case Presentation:** A 70-year-old male presented with fatigue, weakness, and jaundice. Laboratory findings were as follows: WBC: 7.0×10^9/L, Hemoglobin: 7.9 g/dL, MCV: 101 fL, Platelets: 601×10^9/L, Total bilirubin: 1.6 mg/dL (indirect: 1.0 mg/dL), LDH: 280 U/L. Other biochemical parameters were within normal limits. Hemoglobin electrophoresis was normal. Direct and indirect Coombs tests were negative. Haptoglobin was 14 mg/dL (low). Erythrocyte PK activity was reduced at 3.16 U/g Hb (reference: 4.4–5.9). G6PD activity and osmotic fragility were normal. The patient had no prior anemia history. Genetic analysis for PKLR mutations was negative, supporting an acquired form. During follow-up, bilirubin increased to 8.6 mg/dL, LDH rose to 800 U/L, and hemoglobin decreased to 6.0 g/dL. The patient was taking gliclazide for diabetes mellitus, which was discontinued due to suspicion of hemolysis induction. Bilirubin subsequently decreased. Bone marrow biopsy showed dysplastic erythroid changes without blast increase, consistent with MDS. The patient initially required two RBC transfusions weekly, but after gliclazide withdrawal, the requirement decreased to one unit every two weeks. Genetic testing for MDS is ongoing. **Discussion & Conclusion:** Acquired PK deficiency is extremely rare. In this case, a 70-year-old patient developed PK deficiency followed by a diagnosis of MDS. While congenital hemolytic anemias usually present in younger patients, clinicians should be aware that acquired cases may appear later in life. Careful evaluation of medications and bone marrow disorders is essential in elderly patients with unexplained hemolysis.

https://doi.org/10.1016/j.htct.2025.106170

PP 37

A CASE OF THALASSEMIA DIAGNOSED WITH AUTOIMMUNE HEMOLYTIC ANEMIA

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A 37-year-old female patient with a diagnosis of thalassemia major was admitted to the emergency department with complaints of fatigue, nausea, vomiting, and abdominal pain. Laboratory tests revealed elevated liver enzymes and pancytopenia, prompting her hospitalization. It was noted that the patient had not received chelation therapy for the past three months and had a history of irregular use of chelating agents. Her laboratory values were as follows: WBC: 2,460/mm^3, Neutrophils: 700/mm^3, Hemoglobin: 5.2 g/dL, MCV: 62.8 fL, Platelets: 15,000/mm^3. Due to her symptomatic presentation, the patient received cross-matched erythrocyte and platelet suspensions for transfusion. CRP was 0.8 mg/dL; coagulation and renal function tests were within normal limits. The patient had indirect hyperbilirubinemia, LDH: 984 U/L, vitamin B12: 467 pg/mL, folate: 9.53 pg/mL, and ferritin: 956 ng/mL. Both direct and indirect Coombs tests were initially negative. Tests for hepatitis markers, EBV, TORCH, and HIV were also negative. Parvovirus evaluation could not be performed. Peripheral blood smear revealed schistocytes, fragmented erythrocytes, and target cells, thrombocytopenia but no atypical cells. The patient underwent abdominal ultrasonography, which showed hepatosplenomegaly, with the spleen measuring 19 cm. Chest X-ray revealed pleural effusion, and thoracic and abdominal CT scans were planned. Thoracic CT revealed mass-like lesions in the vertebral area with unclear distinction, areas of pneumonic consolidation, and pleural effusion. Intravenous cephalosporin therapy was initiated for presumed pneumonia. ANA and anti-dsDNA tests were sent and returned negative. A PET-CT scan was planned. As the patient's cytopenias persisted despite ongoing transfusion needs, a bone marrow biopsy was performed. Bone marrow aspiration revealed increased cellularity and erythropoiesis without any abnormal findings. PET-CT demonstrated vertebral involvement attributed to extramedullary hematopoiesis; no malignant uptake was detected. Methylprednisolone was initiated at 1 mg/kg. Although platelet levels increased, anemia persisted. Repeated Coombs tests later returned strongly positive (+3) for both direct and indirect Coombs. Direct Coombs was positive for both IgG and C3. The patient had an elevated LDH (1200 U/L) and decreased haptoglobin levels. Due to steroid-refractory autoimmune hemolytic anemia, Rituximab 375 mg/week was administered for four doses, and the steroid dosage was tapered off. After two months, lab results showed WBC: 5,150/mm^3, Hemoglobin: 9.2 g/dL, Platelets: 168,000/mm^3. With a now negative direct Coombs test and a post-transfusion ferritin level of 2,322 ng/mL, chelation therapy was reinitiated. The patient, diagnosed with infection-related autoimmune hemolytic anemia, continues to receive monthly transfusions of cross-matched erythrocyte suspensions, Türkiye. In this patient with thalassemia major who developed infection-associated autoimmune hemolytic anemia, rituximab was initiated due to steroid resistance and a favorable response was achieved. Conclusion: This patient, who developed infection-associated autoimmune hemolytic anemia and was reinitiated chelation therapy, continues to receive monthly transfusions of cross-matched erythrocyte suspensions

https://doi.org/10.1016/j.htct.2025.106171

PP 38

COLD AGGLUTININ DISEASE ASSOCIATED WITH COVID-19 INFECTION IN A PEDIATRIC PATIENT: A RARE CASE PRESENTING WITH SEVERE HEMOLYTIC ANEMIA AND LOBAR PNEUMONIA

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Objective: Cold agglutinin disease (CAD) is a form of autoimmune hemolytic anemia caused by antibodies—typically immunoglobulin M (IgM), and less frequently IgA or IgG—that target antigens on the surface of erythrocytes. Although the etiology may involve infections or immunologic disorders, most cases are idiopathic. The clinical picture results from hemolysis triggered by antibodies that become active at cold temperatures, leading to degenerative changes in the erythrocyte membrane and autoagglutination. This causes a drop in erythrocyte count and hematocrit, while MCV, MCH, and MCHC values appear markedly elevated. Peripheral blood smears often reveal erythrocyte agglutination. Here in, we present a case of cold agglutinin disease secondary to COVID-19 infection. **Case Presentation:** A 14-year-old previously healthy girl was initially treated with amoxicillin-clavulanate for upper respiratory tract infection symptoms, including fever and cough. Her symptoms worsened, and she tested positive for COVID-19 at an outside hospital. She was diagnosed with lobar pneumonia, and significant anemia noted during follow-up prompted her referral to our institution, Türkiye. Upon admission to our pediatric intensive care unit, three consecutive hemogram samples were clotted and could not be analyzed. Venous blood gas revealed hemoglobin (Hb) of 4.2 g/dL. Biochemical analyses showed LDH: 724 U/L (range 110-295 U/L), total bilirubin: 1.85 mg/dL (range 0.3-1.2 mg/dL), direct bilirubin: 0.29 mg/dL (range 0-0.2 mg/dL), and haptoglobin: 0.38 g/L (range 0.35-2.5 g/L). Direct Coombs test was negative. Peripheral smear demonstrated erythrocyte agglutination clusters. Blood samples were delivered to the laboratory in warm water immediately after collection to prevent in vitro agglutination. Repeat tests showed Hb: 8.2 g/dL, MCV: 100 fL, and a markedly elevated MCHC of 683 g/dL. Quantitative cold agglutinin testing could not be performed due to technical limitations at our center. In addition to pneumonia treatment, the patient was started on methylprednisolone at 2 mg/kg/day for presumed cold agglutinin disease. She

was discharged on day 10 of treatment and her steroid therapy was tapered and discontinued by day 21. At follow-up on day 21, the patient's hemoglobin had increased to 13.9 g/dL, and no erythrocyte agglutination was observed on peripheral smear. **Conclusion:** This case highlights a rare pediatric presentation of cold agglutinin disease associated with COVID-19 infection, complicated by severe hemolysis and lobar pneumonia. Early recognition and a multidisciplinary approach including corticosteroids and supportive care played a critical role in the patient's favorable outcome.

https://doi.org/10.1016/j.htct.2025.106172

PP 39

CASE REPORT: WIDESPREAD BONE INVOLVEMENT AFTER ALLOGENEIC TRANSPLANTATION IN A PATIENT WITH BIPHENOTYPIC ACUTE LEUKEMIA

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Objective: Biphenotypic acute leukemia (BAL) is a rare hematologic malignancy characterized by blasts expressing both myeloid and lymphoid markers, and is generally associated with poor prognosis. The advancement of cytochemical and immunophenotypic diagnostic techniques has improved recognition of such rare leukemias, which account for approximately 5% of adult acute leukemias. Despite recent developments, challenges remain in the diagnosis and treatment of BAL. The European Group for the Immunological Characterization of Leukemias (EGIL) and the World Health Organization (WHO) scoring systems, primarily based on flow cytometry, are widely used for diagnosis. Due to disease heterogeneity, there is no standardized chemotherapy for BAL; however, because of the high relapse risk, allo-HSCT is recommended as soon as remission is achieved. Following allo-HSCT, extramedullary relapse occurs in 3–12% of acute leukemia patients. In this study, we present a case of BAL with isolated widespread bone involvement occurring after allo-HSCT. **Case report:** A 33-year-old male patient was diagnosed with B/Myeloid biphenotypic acute leukemia in January 2024. Flow cytometric evaluation showed aberrant myeloid markers, while cytogenetic analysis did not reveal FLT3-ITD, t(8;21), t(9;22), or inv(16) mutations. He received induction therapy with 3+7 Idarubicin & Cytarabine, which failed to achieve remission. FLAG-Mito reinduction therapy was administered, but bone marrow evaluation still showed 8% blasts, and the patient was considered refractory. On March 24, 2024, he underwent allo-HSCT from an HLA-matched sibling donor after a myeloablative conditioning regimen with Fludarabine and Treosulfan. Post-transplant chimerism was 96%, and remission was achieved. In December 2024, the patient presented with left knee pain. Imaging revealed a bone lesion in the proximal left tibia, and biopsy confirmed BAL relapse. Bone marrow biopsy was normal. PET-CT revealed widespread skeletal involvement, including bilateral humeri, right clavicle, right scapula, sternum, L2 vertebra, left sixth rib, sacrum, pelvic bones, right femur, and proximal bilateral tibiae. Due to severe pain, palliative radiotherapy (2000 cGy to the left tibia and 800 cGy to the left sixth rib) was administered. As there was no bone marrow involvement, the patient was started on Decitabine (20 mg/m^2/day for 5 days) combined with Venetoclax (200 mg for 14 days per cycle, reduced due to concomitant posaconazole use). After four cycles, PET-CT demonstrated complete remission. Donor lymphocyte infusions (DLI) were administered in four doses (2.42×10^7/kg total). The patient remains in remission with mild chronic GVHD (grade 1–2). **Discussion:** Biphenotypic acute leukemia is a rare subtype of acute leukemia, most commonly presenting with a B/Myeloid phenotype. High-dose chemotherapy protocols derived from ALL or AML regimens are generally used, and allo-HSCT is recommended for patients achieving remission. Extramedullary relapse after allo-HSCT has been reported with variable incidence, most often accompanied by bone marrow relapse. Isolated extramedullary relapse without marrow involvement is rare. A European multicenter study reported isolated extramedullary relapse in 0.65% of cases after allo-HSCT, while another study of 287 patients identified such relapse in approximately 4%, most frequently in the CNS, skin, bone, pelvis, and breast. In our case, the patient relapsed nine months after allo-HSCT with widespread isolated bone involvement. Treatment with hypomethylating agent Decitabine combined with Venetoclax achieved remission, and subsequent DLI helped maintain disease control. There is limited literature regarding isolated bone relapse in BAL after allo-HSCT, highlighting the uniqueness of this case. **Conclusion:** Biphenotypic acute leukemia is a rare disease with poor prognosis and no standardized therapy. Treatment approaches usually involve high-dose chemotherapy regimens for ALL or AML followed by allo-HSCT. Although extramedullary relapse after allo-HSCT is known, isolated widespread bone involvement is extremely rare. Our case demonstrates successful treatment with Decitabine and Venetoclax, followed by donor lymphocyte infusions.

https://doi.org/10.1016/j.htct.2025.106173

PP 40

"Kappa Light-Chain Multiple Myeloma Without Serum M-Spike: A Diagnostic and Therapeutic Challenge in an Elderly Patient"

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Introduction: Light-chain multiple myeloma (LCMM) accounts for a subset of myeloma cases characterized by the absence of an M-protein spike on serum protein electrophoresis. This diagnostic challenge often delays recognition and treatment. We present the case of a 75-year-old woman with kappa-dominant LCMM, where conventional marrow and serum

studies were inconclusive, yet clinical and imaging findings confirmed active disease. **Methods:** A comprehensive diagnostic evaluation was performed, including hematology and biochemistry profiles, serum protein electrophoresis, serum and urine immunofixation, serum free light chain (sFLC) quantification, bone marrow aspiration and biopsy with immunohistochemistry, and 18F-FDG PET-CT imaging. **Results:** Gülüşen Kellesibüyük, a 75-year-old female, presented with fatigue, anemia, and back pain. Laboratory evaluation revealed hemoglobin of 9.7 g/dL, elevated inflammatory markers, and preserved renal and calcium levels. Serum protein electrophoresis demonstrated no monoclonal spike. Immunofixation of urine identified monoclonal kappa light chains. sFLC testing showed markedly increased kappa levels (121–270 mg/L) with a pathological κ/λ ratio between 3.9 and 4.2. Bone marrow aspirates revealed only 2–3% plasma cells with polytypic staining, and biopsies were normocellular without evidence of clonal infiltration. Despite these inconclusive marrow results, PET-CT demonstrated a metabolically active lytic lesion in the L4 vertebra (SUVmax 11.4) and multiple punctate cranial lytic lesions. The combination of anemia, abnormal light chain ratio, and PET-CT–confirmed bone lesions established the diagnosis of active LCMM. **Discussion:** This case emphasizes the diagnostic complexity of LCMM, where reliance solely on serum electrophoresis or marrow histology may be misleading. The absence of an M spike, coupled with non-diagnostic marrow sampling, initially obscured the diagnosis. However, integration of sFLC analysis, urine immunofixation, and advanced imaging confirmed the presence of active myeloma. Elderly, transplant-ineligible patients such as this one benefit from modern therapeutic approaches that combine efficacy with tolerability. Triplet regimens including daratumumab with lenalidomide and dexamethasone or reduced-intensity bortezomib-based protocols are recommended as first-line options. For patients with limited access to hospital care, oral regimens may be considered, though efficacy is comparatively lower, Türkiye. **Conclusion:** The case of demonstrates that light-chain multiple myeloma can be present despite normal serum electrophoresis and non-clonal marrow findings. Comprehensive evaluation with free light chain assays, urine studies, and PET-CT is essential to avoid underdiagnosis. This case highlights the importance of applying full diagnostic criteria to detect atypical myeloma presentations early, ensuring timely initiation of therapy and improved patient outcomes.

https://doi.org/10.1016/j.htct.2025.106174

PP 41

Early-Stage Nodular Lymphocyte-Predominant Hodgkin Lymphoma (NLPHL) in a Young Woman: A Rare Subtype Managed Without Chemotherapy

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Introduction: Nodular lymphocyte-predominant Hodgkin lymphoma (NLPHL) is a rare subtype of Hodgkin lymphoma, comprising approximately 5–7% of cases. Unlike classical HL, NLPHL is characterized by CD20-positive “popcorn” cells (LP cells), lacks Epstein-Barr virus association, and tends to follow an indolent course. Accurate diagnosis is critical, as the therapeutic approach differs substantially. We report an early-stage NLPHL case in a young woman managed successfully without chemotherapy, emphasizing the value of histopathological precision and risk-adapted therapy. **Methods:** A 33-year-old woman presented with a painless cervical swelling. Physical examination revealed enlarged left cervical and supraclavicular lymph nodes. She had no B symptoms such as fever, night sweats, or weight loss. Blood counts and biochemistry were within normal limits. An excisional biopsy of a lymph node was performed, followed by immunohistochemistry and whole-body 18F-FDG PET-CT for staging. Bone marrow aspiration and biopsy were also conducted to rule out marrow involvement. **Results:** Histopathological examination demonstrated nodular architecture containing scattered lymphocyte-predominant (LP) cells. Immunophenotyping revealed strong CD20 and Pax5 expression, with negativity for CD3 and CD15. CD21 staining highlighted an expanded follicular dendritic cell meshwork, confirming the diagnosis of NLPHL. PET-CT showed FDG-avid lymph nodes localized to the left cervical and supraclavicular regions, with a maximum SUV of 27.9. No pathological uptake was seen in the mediastinum, abdomen, bones, or spleen. Bone marrow biopsy was normocellular without evidence of infiltration. The disease was staged as Stage IA (non-bulky), CD20-positive NLPHL. The patient was treated with rituximab monotherapy (375 mg/m^2 weekly for 4 doses), followed by involved-field radiotherapy (30 Gy) to the involved nodal regions. Given her age and reproductive status, fertility preservation was discussed before initiating treatment. The plan aimed to minimize long-term toxicity while maintaining curative potential. **Discussion:** This case illustrates several important themes. First, accurate histological subtyping allowed for a deviation from standard chemotherapy-based HL protocols. Second, the use of rituximab and radiotherapy alone is an emerging and evidence-supported strategy for early-stage NLPHL, particularly in CD20-positive, non-bulky cases. Third, the patient’s demographic—young and female—makes chemotherapy-free management especially attractive given concerns about fertility and late effects. Finally, the case has strong educational value, highlighting the need to distinguish NLPHL from classical HL and indolent B-cell lymphomas, both histologically and metabolically. **Conclusion:** This case demonstrates how a rare Hodgkin lymphoma subtype can be successfully managed with a chemotherapy-free, targeted approach. It reinforces the importance of accurate subtyping and risk-adapted treatment in delivering personalized care, especially in young patients where fertility and quality of life are key considerations

https://doi.org/10.1016/j.htct.2025.106175

PP 42

GLYCEMIC CONTROL, RENAL FUNCTION, AND HEMATOLOGICAL PARAMETERS: A RETROSPECTIVE REAL-WORLD ANALYSIS

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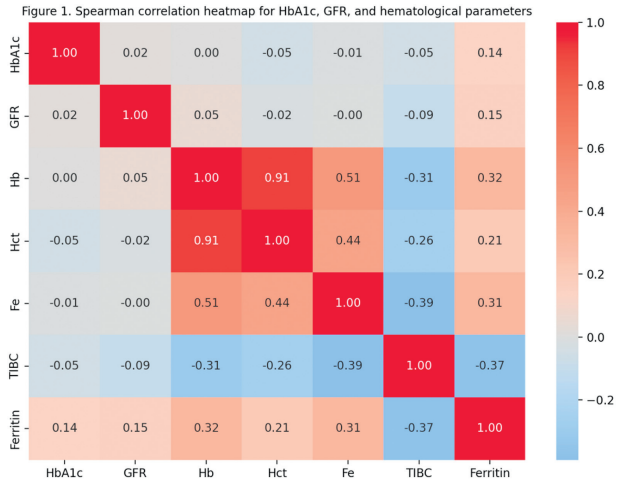
Introduction: Diabetes mellitus exerts detrimental effects that extend beyond glycemic imbalance, frequently involving hematological and renal systems. The coexistence of anemia and declining renal function in diabetes substantially increases cardiovascular risk [1]. HbA1c, as a marker of long-term glycemic control, may have significant implications for hematological indices and iron metabolism. Recent evidence suggests that alterations in iron handling and ferritin levels may be linked to both glycemic status and renal function [2,3]. The present retrospective study investigated the associations between HbA1c, estimated glomerular filtration rate (GFR), and hematological parameters in a real-world patient cohort. **Methods:** Data from 205 adult patients were retrospectively retrieved from the Internal Medicine Clinic of Düziçi State Hospital. The collected variables included hemoglobin (Hb), hematocrit (Hct), serum iron (Fe), total iron-binding capacity (TIBC), ferritin, HbA1c, and estimated GFR. Patients were categorized into two groups according to glycemic status: HbA1c <7% and HbA1c ≥7%. Spearman's correlation analysis was applied to determine associations among variables. Group comparisons were performed between the two HbA1c subgroups using appropriate statistical tests depending on data distribution. Ethical approval was obtained from the Adana City Training and Research Hospital Scientific Research Ethics Committee (Decision No: 508, Date: 08.05.2025). **Results:** No significant association was observed between HbA1c and hemoglobin or hematocrit. A borderline positive correlation was identified between HbA1c and ferritin (r=0.14, p≈0.05). GFR demonstrated a weak but significant correlation with ferritin (r=0.15, p<0.05). Hemoglobin and hematocrit showed strong positive associations with serum iron, whereas TIBC was inversely correlated with ferritin. When comparing patients by glycemic status, those with HbA1c ≥7% exhibited slightly lower hemoglobin, hematocrit, and GFR values, alongside modestly higher ferritin levels compared with patients with HbA1c <7%. These findings are summarized in Table 1. A correlation heatmap integrating all variables is presented in Figure 1, where strong positive associations are observed between Hb, Hct, and serum iron, while TIBC and ferritin demonstrate an inverse relationship. Borderline positive associations of ferritin with both HbA1c and GFR are also highlighted. **Discussion and Conclusion:** This retrospective analysis of 205 patients demonstrated that glycemic control, as assessed by HbA1c, does not directly predict hemoglobin or hematocrit levels. However, a borderline positive correlation with ferritin was observed, suggesting a potential link between glycemic status and iron metabolism. GFR also exhibited a weak positive correlation with ferritin, consistent with previous reports that renal dysfunction alters iron homeostasis and contributes to anemia in diabetes [4,5]. Expected associations among hematological indices were confirmed, such as strong correlations of hemoglobin and hematocrit with serum iron, and the inverse relationship between TIBC and ferritin. These findings reinforce the integrated role of iron regulation in the pathophysiology of diabetes. Overall, the results suggest that while HbA1c may not serve as a strong predictor of anemia itself, it may indirectly influence iron metabolism, potentially through inflammatory or renal mechanisms. Clinical management of diabetes should therefore extend beyond strict glycemic control, incorporating comprehensive evaluation of renal function and iron status.

Keywords: Diabetes mellitus, HbA1c, Anemia, Ferritin, Iron metabolism, Glomerular filtration rate, Hematological parameters.

Table 1. Comparison of hematologic and renal indices between glycemic control groups (HbA1c <7 vs ≥7).

Parameter	HbA1c <7 (mean ± SD, median)	HbA1c ≥7 (mean ± SD, median)
Hemoglobin (g/dL)	14.4 ± 1.4 (14.7)	14.2 ± 1.5 (14.0)
Hematocrit (%)	43.5 ± 3.7 (43.0)	42.6 ± 4.3 (42.1)
Serum Iron (μg/dL)	79.8 ± 37.6 (71.0)	77.5 ± 29.1 (74.0)
TIBC (μg/dL)	286 ± 74 (297.0)	279 ± 51 (280.5)
Ferritin (ng/mL)	59.0 ± 56.8 (42.6)	66.1 ± 51.0 (46.0)
GFR (mL/min/1.73m^2)	99.5 ± 13.0 (101.0)	97.2 ± 13.6 (99.0)

Figure 1. Spearman correlation heatmap for HbA1c, GFR, and hematological parameters (Hb, Hct, Fe, TIBC, Ferritin).



https://doi.org/10.1016/j.htct.2025.106176

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Speech Abstracts

Abstract 001

POEMS SYNDROME: CLINICAL FEATURES, DIAGNOSIS, AND TREATMENT APPROACHES

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POEMS syndrome (Polyneuropathy, Organomegaly, Endocrinopathy, Monoclonal gammopathy, Skin changes) is a rare paraneoplastic syndrome with multisystem involvement [1]. It typically arises from monoclonal plasma cell proliferation and is considered an atypical variant of multiple myeloma [2]. In the pathogenesis of the disease, markedly elevated levels of vascular endothelial growth factor (VEGF) play a crucial role, and most of the symptoms are associated with this mechanism [3]. The clinical presentation of POEMS syndrome is quite heterogeneous. In most patients, the polyneuropathy is a subacute, distal, sensorimotor and progressive demyelinating neuropathy; motor involvement is often prominent and significantly impairs patients' quality of life [4]. Organomegaly particularly hepatomegaly, splenomegaly, and lymphadenopathy is commonly observed. Endocrinopathy may present with a wide spectrum of disorders, including diabetes mellitus, hypothyroidism, and hypogonadism. Monoclonal gammopathy frequently of the λ (lambda) light chain type is a critical diagnostic finding. Cutaneous manifestations may include hyperpigmentation, hemangiomas, excessive hair growth (hypertrichosis), and skin thickening. Additional features can include papilledema, edema, ascites, pulmonary hypertension, and thromboembolic events [5,6]. The diagnostic criteria were first defined by Dispenzieri and colleagues and are currently based on a system of 'major and minor criteria.' For diagnosis, in addition to the two mandatory major criteria (polyneuropathy and monoclonal plasma cell proliferation), at least one additional major criterion and one minor criterion must be present. Measurement of VEGF levels is an important biomarker both for diagnosis and for monitoring treatment response [5]. Treatment is aimed at eliminating the underlying clonal plasma cell population. In patients with localized bone lesions, radiotherapy may be effective particularly in cases of limited disease. For widespread disease, systemic therapies are preferred. Immunomodulatory agents such as lenalidomide and thalidomide, as well as bortezomib based regimens, have been found effective. Autologous hematopoietic stem cell transplantation (HSCT) can provide long-term remission in suitable patients. Monitoring treatment response via VEGF levels shows that reductions in VEGF parallel clinical improvement [7,8]. Prognosis has markedly improved with treatment. Contemporary approaches have increased the 5-year survival rate to approximately 60–70%. However, delayed diagnosis—due to frequent misattribution of symptoms to other neurological or endocrine disorders—is a significant issue at presentation. Therefore, multidisciplinary collaboration among hematologists, neurologists, and endocrinologists is critical for timely diagnosis and effective treatment [9]. In conclusion, POEMS syndrome is a rare but clinically highly complex disorder. Early diagnosis and appropriate treatment improve both survival and quality of life. Given the syndrome's clinical heterogeneity, increasing awareness especially within hematology practice is of great value [10].

https://doi.org/10.1016/j.htct.2025.106178

Abstract 002

UPDATES ON TARGETED THERAPIES IN ACUTE MYELOID LEUKEMIA

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Acute myeloid leukemia (AML) is a malignant disease of bone marrow stem cells that can be fatal with current treatment methods. The median age of patients is 68, and a substantial proportion of cases are attributable to geriatric patients.

Following the administration of induction chemotherapy, complete remission (CR) is observed in approximately 73% - 45% of patients in the ELN-2022 favorable-adverse risk groups, respectively. However, overall survival (OS) and progression-free survival (PFS) are not satisfactory despite current treatments. The five-year PFS was estimated at 52% - 16%, and the five-year OS was 55% - 15%, respectively. As the pathogenesis of AML becomes clearer, clinical trials on current targeted therapies are increasing, and being developed to accompany or replace standard AML treatments that have been similar for nearly 50 years. It is now evident that epigenetic-based treatments can lead to significant changes in the fundamental model that underpins therapeutic interventions. The combination of BCL2 inhibitor venetoclax with hypomethylating agents has significantly improved survival, particularly in elderly and unfit patients. Studies are ongoing to combine intensive therapies with induction and consolidation therapy. Three FLT3 inhibitors (midostaurin, gilteritinib, and quizartinib) have shown promising results in induction and consolidation therapies, salvage therapies, and follow-up therapies after allogeneic transplantation. A phase Ib-II trial of crenolinib, a potent type I second-generation FLT3 inhibitor, demonstrates that its use with intensive therapy in newly diagnosed AML patients under 60 years of age improves survival and results in higher rates of MRD negativity. In addition, ongoing trials are also evaluating the 7 + 3 + midostaurin versus 7 + 3 with gilteritinib (NCT04027309). Other targeted studies are ongoing with IDH inhibitors (ivosidenib and olutasidenib targeting IDH1 mutations; enasidenib targeting IDH2 mutations). Olutasidenib has been shown to provide better response rates and survival compared to ivosidenib in elderly, unfit patients, and combination with azacitidine also increases OS. Other promising studies for AML appear to be focused on menin inhibitors. The phase 1 trial of Revumenib (AUGMENT-101 trial) and Ziftomenib (KOMET-001 trial) (both studies in patients with KMT2A rearranged and NPM1m R/R AML) have yielded positive results, and phase 2 trials are eagerly awaited. A phase 1 trial evaluating a third oral Menin inhibitor, JNJ-75276617, results rates were similar to the other 2 inhibitors. Clinical trials are now ongoing these drugs in combination with additional low dose and high dose chemotherapy regimens (NCT05735184, NCT05886049). Another area is immunotherapy in AML. The success of allogeneic stem cell transplantation has demonstrated the potential for immunotherapy. Talacotuzumab and Pivekimab, targeted to CD123, appear to be particularly effective in relapsed-refractory (R/R) patients, and combination studies with FLAG-IDA are ongoing. Additionally, Tagraxofusp, a drug containing IL-3 ligand conjugated to the first 388 amino acids of diphtheria toxin, has been studied combination with Azacitidine/Venetoclax in newly diagnosed AML patients. MRD negativity was found in 71% of patients. Magrolimab, which acts on CD47, has promising results in patients with R/R AML. The potential of ongoing targeted therapies to provide new insights into the treatment of AML.

https://doi.org/10.1016/j.htct.2025.106179

Abstract 003

OLD TRADITIONS IN A NEW VILLAGE*... WHY ARE FACTORS STILL NECESSARY? CONTEMPORARY PARADİGMS İN HEMOPHILIA MANAGEMENT AND THE IRREPLACEABLE ROLE OF FACTOR REPLACEMENT

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Hemophilia is an X-linked recessive hereditary coagulation disorder characterized by a deficiency of factor VIII (hemophilia A) or factor IX (hemophilia B). Beginning in childhood, it constitutes a lifelong global health problem, associated with substantial morbidity, mortality, and treatment costs. While novel approaches—including gene therapies and non-factor-based biologic agents—are reshaping therapeutic strategies, factor replacement therapies remain the indispensable cornerstone of hemophilia management due to persistent clinical, biological, and economic limitations. **Gene Therapy:** Gene transfer techniques utilizing adeno-associated virus (AAV) vectors (e.g., valoctocogene roxaparvovec, etranacogene dezaparvovec) have shown promise in maintaining sustained factor levels in adults. However, in pediatric populations, hepatocyte proliferation inevitably leads to loss of transgene expression. In addition, immune responses, hepatotoxicity, and the inability to administer repeat dosing represent major barriers to safety and efficacy in children. Ethical concerns further complicate implementation. For these reasons, gene therapy does not appear to be a feasible treatment option for pediatric hemophilia in the near future. **Non–Factor-Based Agents:** Emicizumab, a bispecific antibody that mimics the bridging function of factor VIII, has significantly reduced bleeding frequency and revolutionized care, particularly in hemophilia A patients with inhibitors. Its subcutaneous administration enhances treatment adherence. Nevertheless, its inability to rapidly increase factor levels in emergencies such as major surgery or trauma is a critical limitation. Likewise, RNA interference (RNAi) therapies such as fitusiran and tissue factor pathway inhibitor (TFPI) inhibitors (concizumab, marstacimab) have shown encouraging results in clinical trials. However, thrombotic risks and uncertainties surrounding long-term safety restrict their use in pediatric populations. **Factor Replacement Therapy:** Standard and extended half-life (EHL) FVIII/FIX concentrates, supported by more than four decades of safety data, continue to form the foundation of prophylaxis in childhood. EHL products have reduced treatment burden with once- or twice-weekly dosing, while playing a vital role in maintaining joint health and preventing trauma-related bleeding episodes. Factor replacement therapy remains the gold standard for the management of acute bleeding. **Global Access and Health Economics:** Gene therapies and biologic agents are accessible almost exclusively in high-income countries due to their prohibitive costs (USD 2–3 million per treatment; emicizumab approximately USD 400,000 annually). In contrast, in low- and middle-

income countries, factor replacement remains the only feasible option, in line with World Federation of Hemophilia (WFH) recommendations. **Conclusion:** Despite recent paradigm shifts in the treatment of pediatric hemophilia, factor replacement remains indispensable. Gene therapies hold promise for the future, but biological and ethical constraints currently prevent their application in children. Non–factor-based agents have facilitated prophylaxis but are insufficient in emergencies and lack long-term safety data, particularly in major surgical procedures and severe acute bleeding episodes. Factor replacement therapies, with their proven efficacy, predictable pharmacokinetics, established safety, and global accessibility, continue to stand as the gold standard treatment option for both today and the foreseeable future. *"A reference to a Turkish idiomatic saying, originally 'Introducing a new custom to an old village' (bringing new ways to an old place), which means introducing a revolutionary, unusual, or unexpected innovation or behavior into a traditional, clichéd order or way of doing things."

https://doi.org/10.1016/j.htct.2025.106180

Abstract 004

IRON CHELATİON İN MYELODYSPLASTİC SYNDROMES: WHO AND WHEN?

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Red blood cell (RBC) transfusions are the cornerstone of supportive care in patients with myelodysplastic syndromes (MDS). While transfusions alleviate symptomatic anemia, they inevitably lead to progressive iron accumulation in patients. This transfusional iron overload may exert toxic effects on the heart, liver, endocrine system, ultimately contributing to increased morbidity and mortality. Timely initiation of iron chelation therapy has become an important consideration in the comprehensive management of MDS. Chelation is primarily indicated for patients with lower-risk MDS (IPSS low or Int-1) who are expected to have longer survival, who remain transfusion-dependent. In such patients, iron overload not only threatens organ function also worsens prognosis. Multiple studies have shown that transfusion dependence is a negative prognostic factor, and retrospective analyses suggest that iron chelation may improve overall survival. Chelation is also particularly important in patients who are candidates for allogeneic stem cell transplantation, since excess iron has been associated with inferior transplant outcomes. By reducing systemic iron burden, chelation help optimize organ function and improve transplant eligibility. The decision is usually guided by transfusion history and serum ferritin levels. Most guidelines recommend considering chelation after approximately 20–30 units of RBC transfusions or when serum ferritin persistently exceeds 2500 ng/mL. The therapeutic goal is to maintain ferritin below 1000 ng/mL, minimizing iron-mediated oxidative stress and tissue damage. While serum ferritin is an imperfect surrogate, it remains a practical marker. More advanced techniques such as MRI T2* or SQUID can provide direct estimates of hepatic iron, but their availability is limited. Three chelators are currently in clinical use. Deferoxamine, administered subcutaneously or intramuscularly, is effective but limited by its parenteral route. Deferasirox, an oral once-daily agent, has become the preferred choice in many cases and is FDA-approved for transfusion-related iron overload. Randomized trials in lower-risk MDS demonstrated that deferasirox reduced ferritin, improved event-free survival, and even enhanced hematologic response in some patients. However, renal, hepatic toxicity require careful monitoring. Deferiprone, another oral agent, is mainly approved for thalassemia, can be considered when other chelators fail, though its use in MDS remains limited due to risk of agranulocytosis. Chelation has been associated with improved overall survival in observational studies, prospective trials provide encouraging evidence. Beyond survival, reversal of some iron-related cardiac, hepatic damage has been documented, underscoring its importance. Monitoring should include serial ferritin, renal, liver function, vigilance for adverse events. Individualization is critical: patients with advanced or high-risk MDS, limited life expectancy are less likely to benefit, and chelation is generally not recommended in such settings. Iron chelation therapy plays a vital role in selected MDS patients. It should be considered in lower-risk individuals with substantial transfusion requirements and elevated ferritin, especially in those with preserved organ function or who are candidates for transplantation. As evidence grows, iron chelation continues to evolve from a supportive measure into a prognostically meaningful intervention in the management of MDS.

https://doi.org/10.1016/j.htct.2025.106181

Abstract 005

THROMBOTIC THROMBOCYTOPENIC PURPURA (TTP)

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Thrombotic thrombocytopenic purpura (TTP) is a rare but life-threatening thrombotic microangiopathy caused by severe ADAMTS-13 deficiency due to either autoantibodies (immune TTP, iTTP) or biallelic mutations (congenital TTP, cTTP). The first International Society on Thrombosis and Haemostasis (ISTH) guidelines were issued in 2020. Since then, substantial advances in therapeutic strategies and real-world evidence have prompted an ISTH 2025 focused update. The most significant change relates to cTTP prophylaxis. A new strong recommendation was issued in favor of recombinant ADAMTS-13 (rADAMTS-13) over fresh frozen plasma (FFP) in patients in remission. This decision, supported by a phase 3 randomized crossover trial, demonstrated that rADAMTS-13 provides higher and sustained ADAMTS-13 activity and fewer TTP-related manifestations, with a favorable safety profile [1]. Where rADAMTS-13 is unavailable, the panel conditionally recommends FFP over a watch-and-wait strategy, shifting from the neutral stance in 2020 [1,2]. Pregnancy-related cTTP remains a high-risk setting, and prophylactic therapy—preferably rADAMTS-13, or intensified FFP when rADAMTS-13 is

not accessible—is emphasized due to high maternal and fetal morbidity and mortality [1]. For iTTP, no major directional changes were made. Therapeutic plasma exchange (TPE) with corticosteroids remains standard of care. The addition of rituximab is conditionally suggested for both initial and relapsed events. Caplacizumab continues to be conditionally recommended, supported by real-world registry and cohort data showing faster platelet recovery, fewer exacerbations, reduced TPE sessions, shorter hospitalization, and mortality consistently below 5% [3,4]. Evidence highlights that early initiation, ideally within three days of diagnosis, maximizes benefit [4]. The update also provides revised good practice statements on antithrombotic therapy. Prophylactic anticoagulation (most often low-molecular-weight heparin) may be considered once platelet counts recover above 50×10^9/L in patients at elevated thromboembolic risk, while antiplatelet agents remain discouraged during the acute phase [1]. Importantly, registry data highlight the long-term morbidity of cTTP, including ischemic stroke, end-stage renal disease, and cardiac dysfunction, as well as pregnancy complications. These findings strengthen the rationale for early and consistent prophylaxis. Regulatory approval of rADAMTS-13 in the United States, Europe, and Japan for both prophylaxis and acute treatment represents a transformative milestone in cTTP management [5]. Conclusion: The ISTH 2025 focused update establishes rADAMTS-13 as the new standard for prophylaxis in cTTP and reaffirms the existing evidence-based triple therapy (TPE, corticosteroids, and caplacizumab ± rituximab) in iTTP. These recommendations, integrating randomized trial results, real-world data, and international consensus, provide globally harmonized, evidence-based guidance to improve outcomes and quality of life for patients with TTP.

https://doi.org/10.1016/j.htct.2025.106182

Abstract 006

THE TREATMENT ALGORITHM FOR SICKLE CELL DISEASE

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Sickle cell disease (SCD) is an autosomal recessive hemoglobinopathy characterized by the polymerization of Hemoglobin S (HbS), which results from a point mutation in the β-globin gene. The clinical heterogeneity of the disease is dictated by a complex interplay of three core pathophysiological mechanisms: vaso-occlusion (VOC), driven by erythrocyte rigidity secondary to deoxy-HbS polymerization; chronic hemolytic anemia, resulting from a shortened erythrocyte lifespan; and a state of chronic sterile inflammation and ischemia-reperfusion injury, triggered by the scavenging of nitric oxide (NO) by cell-free hemoglobin. While HbSS and HbS/β^0-thalassemia genotypes constitute the most severe phenotypes, therapeutic algorithms are designed to target these fundamental molecular underpinnings. **Foundational Management and Prevention in SCD:** The cornerstone of modern SCD management is rooted in proactive and preventive medicine. Early diagnosis through newborn screening programs facilitates the immediate initiation of penicillin prophylaxis (from 2 months to 5 years of age) and comprehensive vaccinations (against *Pneumococcus*, *Meningococcus*, and *H. influenzae*), which dramatically reduce the risk of invasive pneumococcal disease secondary to functional asplenia. Primary stroke prevention in the pediatric population (ages 2-16) relies on annual Transcranial Doppler (TCD) screening. A time-averaged mean of maximum velocity exceeding 200 cm/sec is an absolute indication for initiating a chronic transfusion program, a measure proven to reduce stroke risk by over 90%. Hydroxyurea remains the cornerstone of this foundational care, recommended for all patients with severe genotypes over the age of 9 months. When titrated to the maximum tolerated dose (MTD), its pleiotropic effects—including the induction of fetal hemoglobin (HbF) and its anti-inflammatory and anti-adhesive properties—significantly modify the disease course. **Management of Acute Complications:** Acute complications warrant standardized and aggressive intervention. The management of vaso-occlusive crises (VOCs) necessitates rapid, multimodal analgesia, featuring the administration of parenteral opioids and non-steroidal anti-inflammatory drugs (NSAIDs) within 30 to 60 minutes of presentation. Acute Chest Syndrome (ACS), a leading cause of mortality, is managed with broad-spectrum antibiotics, supplemental oxygen, and transfusion support. In cases of severe ACS, the 2020 American Society of Hematology (ASH) guidelines recommend exchange transfusion over simple transfusion to rapidly decrease the HbS fraction to less than 30%. Similarly, acute ischemic stroke constitutes a hematologic emergency that mandates immediate exchange transfusion to reduce the HbS level to below 30%. **Chronic Complications and Disease-Modifying Therapies:** For patients with a suboptimal response to or intolerance of hydroxyurea, therapy is personalized with phenotype-specific agents. In the vaso-occlusive-dominant phenotype, options include the P-selectin inhibitor crizanlizumab and the oxidative stress-targeting agent L-glutamine. However, the role of crizanlizumab in the treatment algorithm has become contentious following the failure of its post-approval STAND study to meet its primary endpoint. For the hemolysis-dominant phenotype, voxelotor, a direct inhibitor of HbS polymerization, is effective in increasing hemoglobin levels. Nevertheless, its use has become debatable following the non-renewal of its marketing authorization by the European Medicines Agency (EMA) due to insufficient evidence of clinical benefit and the company's subsequent global withdrawal decision. **Transfusion Support and Associated Management:** Chronic transfusion therapy is a life-saving intervention, particularly for stroke prophylaxis, but inevitably leads to iron overload. Iron chelation therapy should be initiated when serum ferritin levels exceed 1000-1500 ng/mL. The gold standard for monitoring chelation efficacy is the quantitative assessment of hepatic and cardiac iron burden via T2* MRI. To minimize iron accumulation and more precisely achieve target HbS levels, the 2020 ASH guidelines advocate for automated red cell exchange (RCE) over simple transfusions for patients on chronic transfusion regimens. **Conclusion:** The management paradigm for SCD has evolved from reactive care to a multifaceted approach encompassing proactive foundational

therapies, phenotype-specific treatments, and curative strategies. Allogeneic hematopoietic stem cell transplantation and the recently approved gene therapies based on CRISPR-Cas9 (Exa-cel) and lentiviral vectors (Lovo-cel) have ushered in a new era, offering curative potential for eligible patients. The future therapeutic algorithm is anticipated to become even more personalized through the integration of these revolutionary treatments.

https://doi.org/10.1016/j.htct.2025.106183

Abstract 007

WALDENSTRÖM MACROGLOBULINEMIA

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Waldenström Macroglobulinemia (WM) is a rare disease. The median age at diagnosis is 70 years and approximately 60 percent of patients are male. The etiology of WM is not fully understood. Approximately 90-95% of WM patients have mutations in the MYD88 L265P gene and 40% have recurrent mutations in the CXCR4 gene. The clonal B cell population leads to abnormal monoclonal IgM production. The pentameric configuration of IgM molecules increases serum viscosity, slowing blood flow through capillaries. In patients with WM, clonal B cells can directly infiltrate hematopoietic tissues, causing cytopenias (e.g., anemia, thrombocytopenia, neutropenia), lymphadenopathy, hepatomegaly, and/or splenomegaly. Rarely, plasmacytoid lymphocytes may infiltrate the central nervous system or meninges. Most patients with WM present with nonspecific constitutional symptoms but up to a quarter of patients may be asymptomatic at diagnosis. Common symptoms include weakness, fatigue, weight loss, and nose and gum bleeding. Bone marrow aspiration and biopsy demonstrating lymphoplasmacytic lymphoma is an important component of the diagnosis of WM. The biopsy specimen is usually hypercellular and densely infiltrated with lymphoid and plasmacytoid cells. Intranuclear vacuoles containing IgM monoclonal protein (Dutcher bodies) are common in the malignant cells of WM. The following criteria must be met for a diagnosis of WM: • IgM monoclonal gammopathy (any level) must be present in the serum. • ≥10% of the bone marrow biopsy specimen must show infiltration by small lymphocytes with plasmacytoid or plasma cell differentiation (lymphoplasmacytic features or lymphoplasmacytic lymphoma) and an intertrabecular pattern. • The infiltrate should express a typical immunophenotype (e.g., surface IgM +, CD5-/+, CD10-, CD11c-, CD19+, CD20+, CD22+, CD23-, CD25 +, FMC7+, CD103-, CD138-). The plasmacytic component will be CD138+, CD38+, and CD45- or less prominent. The differential diagnosis includes chronic lymphocytic leukemia, marginal zone and mantle cell lymphoma. Not every VM patient requires treatment. For asymptomatic patients, follow-up without treatment every 3-6 months is recommended. Treatment is indicated for patients with symptomatic WM if any of the following are attributable to WM: • Systemic symptoms: B symptoms such as recurrent fever, severe night sweats, fatigue and/or unintentional weight loss • Cytopenias: Hemoglobin ≤10 g/dL or platelet count <100,000/microL; cold agglutinin anemia, immune hemolytic anemia, and/or thrombocytopenia • Symptomatic or large (≥5 cm) lymphadenopathy, symptomatic splenomegaly and/or tissue infiltration • End-organ damage: Hyperviscosity, peripheral neuropathy, immunoglobulin light chain (AL) amyloidosis with organ dysfunction, symptomatic cryoglobulinemia, pleural effusions or nephropathy due to WM Symptomatic hyperviscosity in a patient with an indication for treatment requires urgent plasmapheresis. Signs and symptoms associated with hyperviscosity include oronasal hemorrhage, blurred vision, headache, dizziness, paresthesia, retinal vein occlusion, papilledema, stupor, and coma. In patients with treatment indications but without symptoms of hyperviscosity, options include rituximab plus bendamustine or Bruton's tyrosine kinase inhibitors (such as ibrutinib, zanubrutinib, or acalabrutinib). Treatment of relapsed or refractory disease may include Bruton's tyrosine kinase inhibitors, bendamustine plus rituximab, nucleosome analog-based regimens, and venetoclax, if not previously used. High-dose chemotherapy and autologous or allogeneic hematopoietic cell transplantation (HCT) are rarely used in the treatment of WM.

https://doi.org/10.1016/j.htct.2025.106184

Abstract 008

REFRACTORY CHRONIC MYELOID LEUKEMIA: A REVIEW OF CURRENT THERAPEUTIC LANDSCAPE AND EMERGING CHALLENGES

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Chronic myeloid leukemia (CML) has become a paradigm of targeted therapy success; however, a proportion of patients develop refractory disease, marked by failure or intolerance to multiple TKIs. Optimal management requires integrating molecular, clinical, and patient-related factors into therapeutic decision-making [1,2]. **Mechanisms of Resistance and Genetic Complexity:** Resistance is commonly mediated by BCR::ABL1 kinase domain mutations. While second-generation TKIs (dasatinib, nilotinib, bosutinib) address many resistant clones, the T315I substitution remains uniquely sensitive to ponatinib [3,4]. Beyond kinase domain changes, clonal evolution with mutations in ASXL1, RUNX1, IKZF1, TP53, and DNMT3A has been increasingly recognized. These lesions, frequently encountered in advanced phases, are associated with poor response to TKIs, higher risk of progression, and inferior survival [5,6]. **Current Therapeutic Approaches:** Ponatinib remains the agent of choice for patients harboring T315I or compound mutations, with careful risk management to mitigate vascular events [4]. Asciminib, a first-in-class STAMP inhibitor targeting the myristoyl pocket of BCR::ABL1, has emerged as a major advance. By restoring kinase autoinhibition, asciminib demonstrated superior efficacy and tolerability over bosutinib in the ASCEMBL trial [3] and has shown promising results in real-world refractory populations. **TKI Selection Considerations:** In clinical practice, TKI selection is

guided by a combination of mutational status and comorbidities. Specific mutations confer resistance to certain TKIs, making mutation-directed sequencing essential. At the same time, patient comorbidities such as cardiovascular, pulmonary, or metabolic disease influence drug tolerability and safety, thereby shaping the optimal therapeutic choice [1,7]. **Beyond TKIs:** For patients failing multiple TKIs, allogeneic hematopoietic stem cell transplantation (allo-HSCT) remains the only potentially curative approach, particularly in younger and high-risk patients [1,2]. Novel strategies under investigation include rational TKI combinations (e.g., asciminib plus ponatinib), immunotherapeutic approaches, and targeted inhibition of epigenetic regulators [8]. **Conclusion:** Refractory CML reflects the biological and clinical complexity of disease progression beyond BCR::ABL1 dependence. While ponatinib and asciminib have redefined therapeutic opportunities, additional high-risk mutations highlight the need for precision medicine strategies. Tailored TKI sequencing, integration of comorbidity profiles, and timely transplantation remain central pillars, while ongoing translational research promises to expand future options [7,8].

https://doi.org/10.1016/j.htct.2025.106185

Abstract 009

HYPERCOAGULABILITY: ETIOLOGY, DIAGNOSIS AND TREATMENT PRINCIPLES

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Thrombosis occurs when the delicate balance between prothrombotic and anticoagulant forces is impaired. It usually develops due to multiple factors. When multiple risk factors come together, the anticoagulant systems cannot resist procoagulant forces and thrombosis may develop as a result. Thrombosis due to hypercoagulability is usually seen clinically as venous thromboembolism (VTE) and rarely as arterial thrombosis. VTE can be seen as deep vein thrombosis (DVT) or pulmonary embolism. DVT most often manifests itself in the legs and rarely in the abdominal or intra-pelvic veins. The hereditary or acquired factors are involved in the etiology of venous thromboembolism. Clinically, VTE is observed in those who are due to hereditary factors, while venous or arterial thromboses may be observed in those who are due to acquired causes. Hypercoagulability due to acquired causes is observed more often (70%) and they have a greater risk of thrombosis. Venous thromboembolism is reported to occur in 1/10,000 people per year under the age of 40 and 1/1000 people per year over the age of 75. Hereditary thrombophilia causes are rare in the population. Although different rates are reported according to the world geography, The R506Q mutation in coagulation factor V, also known as the Factor V Leiden (FVL) mutation is the most common among them (3-8%). It is rare in far east countries. FVL mutation is the most common cause among hereditary hypercoagulabilities (50%). Clinically, young age, idiopathic thrombosis, thrombosis in an unusual place (upper extremity, mesenteric vein, portal vein, renal vein, cerebral vein) are noteworthy. Recurrence of thrombosis and a family history of venous thromboembolism are common. Since the findings are not specific in the diagnosis of venous thromboembolism, the patient's medical history, family history and examination findings should be evaluated together. Determination of thrombosis risk scores, D-Dimer test, blood chemistry, lung X-ray and ECG are included as the first examinations in the patient. In patients with a negative D-Dimer test, a further examination is usually not needed. The subject of which tests to perform and when to perform in VTE cases requires expertise. In cases of idiopathic thrombosis, occurring at a young age, or recurrent, genetic or coagulation tests may be planned. Since test results may be misleading during the acute thrombosis period, it is more appropriate to schedule the tests a few weeks later or after the end of treatment. In patients with a high thrombosis risk score and elevated D-dimer levels, extremity vein Doppler ultrasonography and computed pulmonary angiography are used as imaging studies. Oral or parenteral anticoagulants are used in the treatment of venous thromboembolism. These include low molecular weight heparin, FXa inhibitors (apixaban, rivaroxaban), and vitamin K antagonist (warfarin). The most commonly used are low-molecular-weight heparin, FXa inhibitors (apixaban, rivaroxaban), and vitamin K antagonists (warfarin). Anticoagulant therapy should last at least 3 months, after which patients should be evaluated based on their risk status. Anticoagulant therapy should be longer-term in patients with ongoing diseases or conditions that trigger thrombosis (such as antiphospholipid syndrome, active autoimmune disease, cancer). Patients should be carefully monitored for bleeding during anticoagulant therapy. Thrombolytic or interventional treatments may be administered to patients presenting with acute heart failure and hypotension. Patients should continue to be monitored after anticoagulant therapy, and physical therapy should be provided for patients with postthrombotic syndrome.

Key words: Hypecoagulability, venous tromboembolism, anticoagulant therapy.

https://doi.org/10.1016/j.htct.2025.106186

Abstract 010

THE PLACE OF IMMUNOTHERAPY IN ALL

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In patients with acute lymphoblastic leukemia (ALL), although 80-90% of adult patients achieve a complete response (CR), cure rates are only 40% with initial treatment and 10%-20% with subsequent salvage treatments. Ten percent of patients are refractory to initial treatment, and 40%-70% relapse. Allo-HCT is the standard of care for a fit and eligible group. Immunotherapies are an important choice in improving treatment success and reducing side effects. The primary immunotherapies include bispecific antibodies (BsAbs), antibody-drug conjugates, CAR T-cell, and CAR NK-cell therapies. Blinatumomab activates T cells by binding to

CD19 on B-ALL cells and CD3 on T cells, leading to polyclonal expansion of cytotoxic T cells, T-cell activation, and the release of cytokines and cytotoxic granules. thus causing lysis of CD19+ lymphoblasts. It is approved for the treatment of Ph (-) Relapsed/Refractory (R/R) B-ALL and has received FDA approval for consolidation therapy in patients with MRD-positive disease and for MRD-independent consolidation therapy. The Alcantara study demonstrated sustained responses in patients with Ph(+) R/R ALL. Inotuzumab is an antibody-drug conjugate containing calicheamicin, an anti-CD22-targeted, DNA-binding cytotoxic antibiotic. It received FDA approval after inotuzumab monotherapy demonstrated superiority over standard chemotherapy for relapsed/refractory CD22(+) B-ALL. The most common Grade ≥3 adverse events were hematologic and liver-related and included an 11% VOD, mostly seen after sequential allo-HSCT. Inotuzumab monotherapy has shown high CR and MRD negativity rates when used in combination with reduced-intensity chemotherapy in the first-line setting in elderly patients. Cell-based therapies have demonstrated efficacy in R/RB-ALL with CD19-targeted therapies such as tisagen-lecleucel (tisa-cel) for patients aged ≤25 years and brexucabtagene autoleucel for adults, despite the side effects that limit CAR T cells. Side effects include cytokine release syndrome, immune effector cell-associated neurotoxicity syndrome (ICANS), and B-cell aplasia. Studies of CD5-CART, CD7-CART, and NS7CAR are ongoing for relapsed/refractory T-cell leukemia. Although experimental, CAR-NK therapies, which use NK cells isolated from peripheral blood and do not pose a risk of GVHD, show promise with fewer side effects, fewer relapses, and longer survival. Studies of immune checkpoint inhibitors combined with other immunotherapies may be important for B-ALL, while combinations of BCL-2 and BCL-XL inhibitors with chemotherapy may be important for T-ALL, for which no antibody therapy is currently available. Difficulties continue to arise in the treatment of T-ALL and Ph-like ALL. Immunotherapy and cellular therapies are being studied in optimal combinations.

https://doi.org/10.1016/j.htct.2025.106187

Abstract 011

DIAGNOSIS AND MANAGEMENT OF EOSINOPHILIA

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Eosinophilia is defined as an absolute eosinophil count greater than 500/μL in peripheral blood and is characterized by a broad clinical spectrum, ranging from transient, benign processes to severe, life-threatening hematologic malignancies. The severity of eosinophilia has been classified into three categories: mild (500–1,500/μL), moderate (1,500–5,000/μL), and severe (>5,000/μL). Persistent elevations above 1,500/μL, particularly when accompanied by tissue infiltration, are defined as hypereosinophilia. This condition can progress to hypereosinophilic syndromes (HES), with multisystem organ damage. The most frequently involved are the skin, lungs, gastrointestinal tract, cardiovascular system, and central nervous system. A stepwise and comprehensive diagnostic approach is essential for the evaluation of eosinophilia. A comprehensive medical history and physical examination should address the following: allergic and atopic disorders, travel to endemic regions for parasitic diseases, drug exposures, and family history suggestive of hereditary conditions. Initial laboratory evaluation includes complete blood count and peripheral smear to verify eosinophilia and identify dysplastic features. The diagnostic evaluation should begin with the exclusion of secondary causes, which comprise parasitic and fungal infections, allergic or atopic conditions (e.g., asthma, atopic dermatitis), drug hypersensitivity, autoimmune/connective tissue diseases, and certain solid tumors. When secondary causes are excluded, primary or clonal eosinophilia must be considered. Bone marrow aspiration/biopsy, cytogenetic analyses, flow cytometry, and molecular assays (e.g., FIP1L1–PDGFRA, PDGFRB, FGFR1, JAK2, BCR-ABL mutations) are essential for differentiating neoplastic eosinophilia. When organ involvement is clinically suspected, assessment often includes imaging modalities (CT, MRI), echocardiography, pulmonary function testing, and endoscopic procedures. The approach to treatment depends on the underlying pathology, disease severity, and the presence or absence of organ involvement. In secondary eosinophilia, management includes targeted therapy such as anti-parasitic agents, discontinuation of causative drugs, or treatment of underlying autoimmune or malignant disorders. Systemic corticosteroids remain the first-line intervention for many patients, particularly those with symptomatic hypereosinophilia or organ-threatening disease, due to their rapid effect in lowering eosinophil counts and mitigating tissue injury. In primary or clonal eosinophilia, treatment varies with molecular findings. Patients with FIP1L1–PDGFRA–positive myeloproliferative variants typically respond dramatically to tyrosine kinase inhibitors such as imatinib. Other cytoreductive agents, including hydroxyurea and interferon-α, may be used in refractory or steroid-intolerant cases. In acute eosinophilic leukemia, intensive chemotherapy or hematopoietic stem cell transplantation may be indicated. Monoclonal antibodies directed against interleukin-5 (mepolizumab, reslizumab) or its receptor (benralizumab) have demonstrated significant efficacy in reducing blood and tissue eosinophil counts, improving clinical outcomes in HES, eosinophilic asthma, and other eosinophil-mediated disorders. These agents provide a more targeted approach with fewer systemic toxicities compared to traditional immunosuppressants, representing a paradigm shift in long-term disease management. In conclusion, eosinophilia is not a diagnosis in itself but a clinical finding requiring careful evaluation to distinguish reactive from clonal causes. Early recognition of hypereosinophilia and prompt assessment of target organ involvement are vital to prevent irreversible complications. Advances in molecular diagnostics and targeted biologic therapies have markedly improved the ability to personalize treatment and enhance prognosis. Future research will likely further explain the causes of the disease and expand the available treatments, which will in turn improve long-term results for patients with eosinophilia.

https://doi.org/10.1016/j.htct.2025.106188

Abstract 012

TREATMENT-FREE REMISSION IN CHRONIC MYELOID LEUKEMIA: CURRENT EVIDENCE, PREDICTORS, AND FUTURE DIRECTIONS

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Background: The advent of tyrosine kinase inhibitors (TKIs) has revolutionized the management of chronic myeloid leukemia (CML), transforming it into a chronic condition with near-normal life expectancy. In this context, treatment-free remission (TFR)—defined as the maintenance of deep molecular response after discontinuation of TKIs—has emerged as a new therapeutic milestone beyond survival and disease control. While multiple clinical trials and real-world cohorts have demonstrated the feasibility and safety of TFR, several biological, molecular, and clinical factors continue to shape patient selection and long-term outcomes. **Content:** This presentation synthesizes evidence from pivotal discontinuation trials (STIM, EURO-SKI, ENESTfreedom, ENESTop, DASFREE, DESTINY) as well as real-world studies from Europe, Asia, and North America. Updated recommendations from international guidelines (ELN 2020/2025, NCCN 2025) are reviewed alongside emerging biological insights, including immune surveillance, transcript types, and microenvironmental regulation of leukemia stem cells. Novel approaches such as dose de-escalation, immunotherapy combinations, and predictive modeling are critically examined to delineate future directions in TFR research. **Results:** Clinical evidence consistently shows that sustained TFR is achievable in approximately **40–60%** of patients after ≥3 years of TKI therapy and ≥2 years of stable deep molecular response (DMR). Higher success rates have been reported in Japanese cohorts (up to 63%), underscoring the influence of patient selection and monitoring intensity. 1. **Relapse dynamics:** Most relapses occur within the first 6–12 months, with >95% of patients regaining major molecular response (MMR) after restarting TKIs. Late relapses are rare but underscore the necessity of lifelong molecular monitoring. 2. **Predictors of success:** Longer TKI duration (≥5 years), sustained MR4.5, and the e14a2 transcript type are consistently associated with improved outcomes. Immunological parameters, particularly increased NK cell activity and reduced regulatory T-cell frequencies, also correlate with durable remission. 3. **Therapeutic strategies:** Dose de-escalation (e.g., DESTINY trial) has been shown to reduce relapse risk and mitigate withdrawal symptoms. Second TFR attempts, as demonstrated in DAstop2, are feasible and safe for selected patients. 4. **Adverse effects:** Approximately 30–40% of patients experience musculoskeletal discomfort—termed "TKI withdrawal syndrome"—which is typically mild and self-limiting. **Discussion:** TFR represents a paradigm shift in CML care, reflecting both biological disease control and patient-centered goals such as quality of life and long-term safety. While most relapses are molecular and rapidly reversible, careful patient selection and standardized monitoring remain essential to ensure safety. Regional differences highlight the importance of infrastructure: countries with frequent PCR monitoring and strong patient compliance report superior outcomes. Immunological studies suggest that durable TFR depends on effective immune surveillance, with NK cells and T-cell subsets emerging as potential biomarkers. Moreover, mathematical modeling of leukemia stem cell–microenvironment interactions provides new insights into relapse biology. Future research will likely integrate these biomarkers into predictive algorithms to personalize TFR eligibility. Importantly, novel combinations—such as TKI with interferon-α or immune checkpoint blockade—are under active investigation and may enhance remission durability. **Conclusion:** TFR is now established as a safe and realistic treatment goal in selected CML patients, particularly those with prolonged TKI exposure and stable deep molecular responses. Success rates of 40–60% can be expected, with >95% of relapsed patients regaining response upon retreatment. Ongoing efforts should focus on refining patient selection through biomarkers, enhancing durability with immunotherapy-based combinations, and harmonizing monitoring practices globally.

Keywords: CML, TFR, Tyrosine Kinase Inhibitors, Deep Molecular Response, Immunotherapy.

https://doi.org/10.1016/j.htct.2025.106189

Abstract 013

THE PAST, PRESENT, AND FUTURE OF TRANSFUSION

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Blood has attracted human interest since the dawn of history. The human spirit, strength, and character have been identified with blood. The first known human-to-human blood transfusion (1492) was performed on Pope Innocent VIII with the aim of rejuvenating him, using blood from three young men. This procedure ended with the death of the Pope and the young donors. Initially, blood transfusions were attempted from animal to animal, followed by attempts at blood transfusions from animal to human. A blood transfusion from a lamb to a human was performed to calm a person with mental disorders, followed by attempts at blood transfusions from various animals to humans. Following acute hemolysis cases that ended in death, the Paris Medical Association declared this practice illegal and banned it. The first human-to-human transfusion was performed by American Dr. Philip Syng Physick. Another significant example in the field of transfusion is James Blundell's blood transfusions from husbands to women with postpartum hemorrhage. Five of the ten transfusions performed by Blundell were successful. The discovery of blood groups by Karl Landsteiner (1901) marks a turning point in the history of transfusion. The A, B, and O blood groups were discovered first, followed by the AB blood group a year later, and the Rh blood group in 1939. The subantigens of the Rh blood group were discovered in 1944. In 1942, Bernstein discovered that blood groups are inherited in humans according to Mendel's laws. In 1946, the Kell, Duffy,

and Kidd blood group systems were discovered. Today, there are over 360 different blood group antigens within 48 blood group system. Landsteiner won the Nobel Prize in 1930 for his discovery of blood groups. In 1907, it was recognized that blood group compatibility between donor and patient was necessary, and the first cross-matching tests were performed by Ruben Ottenberg. With these studies, Ottenberg demonstrated that the O blood group is a universal donor. A milestone in blood banking was the use of sodium citrate, an anticoagulant, in blood transfusions (1914-1915) (Hustin, Agote, Levishon). Prior to this discovery, transfusions were performed by transferring blood from the donor to the patient using syringes or vascular anastomoses. However, with the ability to store blood without clotting, transfusions began to be performed by transferring blood from the donor into a glass bottle containing citrate and then to the patient. The world's first blood bank was established in England in 1921 by Oliver Percy. Later, with the addition of dextrose, phosphate, adenine, and mannitol mixtures, blood could be stored for up to 42 days in four-degree blood refrigerators. In 1930, Russian Shamov performed the first transfusion of cadaver blood to a living person. In the following years, transfusions were performed on 2,500 people using this method. In 1935, the International Society of Blood Transfusion (ISBT) was founded. At its 1937 congress, the ISBT adopted the ABO terminology for blood grouping. In 1950, plastic blood bags were developed. In 1953, blood components were obtained using a refrigerated centrifuge method. In 1968, the first apheresis devices were developed. In Turkey, the first human-to-human transfusion was performed at Haydarpaşa Numune Hospital in 1932. Starting in 1945, small blood units were established in some hospitals. In 1957, Red Crescent blood banks were established first in Ankara and then in Istanbul. In 1983, Law No. 2857 on Blood and Blood Products was enacted in Turkey. In ……, a new blood law and related regulations were enacted in light of scientific developments. Accordingly, Red Crescent Regional Blood Centers and Hospital Transfusion Centers were established. Guidelines were developed. Mandatory screening tests were initiated for diseases transmitted through transfusion, including HBV, syphilis, malaria, HIV, and most recently HCV. In 1996, the Blood Centers and Transfusion Association (KMTD) was established. In 1997, a donor screening form was created and its use was made mandatory throughout Turkey. When KMTD was established, whole blood usage in Turkey was over 95%. KMTD, in collaboration with the Ministry of Health, held 118 educational meetings in 74 provinces, explaining blood components, transfusion indications and complications, and blood bank-clinic relationships. As a result, component usage was adopted throughout the country. Annual courses and conferences were held to keep pace with developments worldwide and in Turkey. Recently, training has focused particularly on Hemovigilance (blood monitoring system) and Patient Blood Management. Currently, components are used not only for component requirements but also for various treatment options. For this purpose, platelets, mesenchymal stem cells, and plasma are used in regenerative medicine and wound healing. In light of scientific and technological developments, the following developments are expected in the field of transfusion in the future: Artificial blood (oxygen-carrying hemoglobin derivatives and engineered products), Universal blood production and conversion of erythrocytes from various blood groups to O-type erythrocytes (cell tissue engineering), digital and automation systems, and artificial intelligence will enable fast and accurate data analysis, reduction of human error, reduction of infection risk, and the use of advanced bioprinters.

https://doi.org/10.1016/j.htct.2025.106190

Abstract 014

PLATELET FUNCTION DISORDERS: CONTEMPORARY INSIGHTS AND FUTURE DIRECTIONS

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Platelet function disorders (PFDs) represent a diverse group of qualitative platelet defects that often remain underdiagnosed despite normal platelet counts. Their clinical relevance extends beyond hematology, as undetected PFDs contribute to perioperative bleeding, complications in oncology, and challenges in balancing hemostasis with cardiovascular protection during antiplatelet therapy. For hematologists, timely recognition of these disorders is critical for optimal patient care. Inherited PFDs (IPFDs) include Glanzmann thrombasthenia, Bernard–Soulier syndrome, and RUNX1-associated familial platelet disorder, each characterized by distinct receptor or signaling abnormalities. These range from impaired fibrinogen binding (αIIbβ3 defects) to defective adhesion (GPIb–IX–V complex deficiencies). Syndromic forms such as Wiskott–Aldrich syndrome illustrate the intersection of platelet dysfunction, immune dysregulation, and malignancy predisposition. The spectrum of bleeding can vary considerably. Acquired PFDs are more frequent and clinically impactful. Drugs such as aspirin and P2Y12 inhibitors, uremia, advanced liver disease, myeloproliferative neoplasms, and xtracorporeal circulation all compromise platelet activation or secretion. Given their prevalence, distinguishing pharmacologic platelet inhibition from true dysfunction is a practical challenge in routine hematology. Diagnosis requires a structured, tiered approach. Clinical history and bleeding scores remain the foundation, but must be complemented by laboratory assays. Initial testing should exclude von Willebrand disease, while light transmission aggregometry, flow cytometry, and secretion assays provide functional insights. Next-generation sequencing now allows precise molecular classification of many IPFDs, though accessibility remains uneven. Novel technologies, including microfluidics and whole-blood shear assays, … Therapeutic strategies depend on etiology and severity. Antifibrinolytics and desmopressin are often sufficient for mild bleeding; platelet transfusions and recombinant factor VIIa are mainstays for severe inherited forms, particularly Glanzmann thrombasthenia complicated by alloimmunization. Hematopoietic stem cell transplantation offers curative potential in selected syndromic disorders. In acquired dysfunction, correcting underlying disease or adjusting medications is essential. Personalized perioperative

pla... Future challenges include diagnostic delays, variability in laboratory availability, and unequal global access to advanced therapies. However, rapid integration of genomics, standardized testing protocols, and emerging hemostatic agents promise to redefine clinical management. Collaborative registries and international networks will be essential to accelerate discovery and translate innovation into equitable care. In conclusion, PFDs embody a nuanced and evolving frontier in hematology. By integrating advanced diagnostics with personalized management strategies, hematologists can reduce morbidity, anticipate complications, and contribute to reshaping the future of bleeding disorder care., Türkiye

https://doi.org/10.1016/j.htct.2025.106191

Abstract 015

CNS INVOLVEMENT IN PRIMARY AND SECONDARY ALL AND TREATMENT STRATEGIES

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Abstract Central nervous system (CNS) involvement is an important prognostic factor in acute lymphoblastic leukemia (ALL). Both primary and secondary CNS disease are associated with increased relapse risk and inferior survival. In adults, CNS involvement at diagnosis occurs in 5–10% of cases, with relapse rates of 4–15%. Before the introduction of prophylaxis in the 1980s, CNS relapse rates were as high as 30–40%. The pathophysiology of CNS involvement in ALL is complex, involving early migration of leukemic blasts across the blood –brain barrier, facilitated by adhesion molecules, integrins, and vascular endothelial growth factor (VEGF). VEGF-mediated endothelial disruption increases vascular permeability and plays a pivotal role in the development of posterior reversible encephalopathy syndrome (PRES). Targeting VEGF with monoclonal antibodies has been shown to reduce CNS leukemic burden, suggesting a promising future strategy in both pediatric and adult ALL. The immune-privileged microenvironment of the CNS provides a sanctuary for leukemic cells, supporting their persistence and relapse risk. Traditionally, cerebrospinal fluid (CSF) cytomorphology has been considered the gold standard for assessing CNS involvement. However, this method has low sensitivity and specificity, particularly in samples with low cell counts or technical artifacts. In recent years, flow cytometric immunophenotyping of CSF has demonstrated superior sensitivity, identifying CNS disease more frequently and serving as a strong biomarker for relapse prediction. Minimal CNS involvement not only increases the risk of relapse but is also associated with treatment-related neurotoxicities. Data from the NOPHO group indicate that minimal CNS involvement in pediatric ALL is linked to higher rates of seizures and PRES. Standard treatment approaches continue to rely on intrathecal chemotherapy (methotrexate, cytarabine, corticosteroids) and high-dose systemic agents. However, repeated intrathecal administration and cranial irradiation carry substantial risks of long-term neurotoxicity, highlighting the need for more selective and less toxic strategies. Radiation therapy may still be considered in selected cases, particularly in the context of hematopoietic stem cell transplantation (HSCT). HSCT remains a potentially curative option, especially when preceded by effective cytoreduction with immunotherapy. In conclusion, CNS involvement in ALL represents a biologically and clinically distinct entity requiring tailored management. Primary involvement demands sensitive diagnostics and a careful balance between efficacy and neurotoxicity, while secondary CNS relapse necessitates aggressive multimodal therapy, often incorporating novel immunotherapies and HSCT. Advances in CNS-directed diagnostics and therapeutics are expected to further individualize treatment, aiming to reduce relapse risk while minimizing late toxicities.

https://doi.org/10.1016/j.htct.2025.106192

Abstract 016

GAUCHER DISEASE

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Gaucher disease is an autosomal recessive lysosomal storage disorder caused by pathogenic variants in the GBA1 gene on chromosome 1q21, resulting in reduced or absent activity of the enzyme glucocerebrosidase. Consequently, glucosylceramide accumulates primarily in macrophages, leading to the formation of Gaucher cells. The disease most commonly presents with anemia, thrombocytopenia, bleeding tendency, hepatosplenomegaly, fatigue, and skeletal involvement. Bone pathology includes decreased mineral density, bone marrow infiltration, infarction, and fibrosis, all of which contribute to impaired hematopoiesis and cytopenias. From a hematological standpoint, bone marrow aspiration may reveal Gaucher cells with the typical “wrinkled tissue paper” cytoplasm; however, this finding is not pathognomonic and may be seen in other lysosomal storage disorders. Definitive diagnosis therefore requires demonstration of deficient glucocerebrosidase activity or identification of pathogenic GBA1 variants through molecular analysis. In clinical practice, hematological parameters remain essential both for diagnosis and longitudinal monitoring. Complete blood counts provide information on cytopenias and treatment response, while coagulation studies and platelet function tests assist in evaluating bleeding risk. Biomarkers such as chitotriosidase and glucosylsphingosine, together with organomegaly assessment, are increasingly employed in follow-up. Historically, hematopoietic stem cell transplantation was considered a potential curative approach but was limited by high morbidity, mortality, and donor-related challenges. With the advent and efficacy of enzyme replacement therapy and substrate reduction therapy, hematopoietic stem cell transplantation is now reserved only for rare, severe cases without access to standard treatment. In summary, Gaucher disease is a multisystemic disorder with prominent hematological manifestations. Early recognition, accurate diagnosis, and systematic monitoring

underscore the central role of hematology in the comprehensive management of this condition.

https://doi.org/10.1016/j.htct.2025.106193

Abstract 017

OPTIMIZATION OF TYROSINE KINASE INHIBITORS IN CHRONIC MYELOID LEUKEMIA

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In the treatment of chronic myeloid leukemia (CML), first-line tyrosine kinase inhibitor (TKI) choice should be individualized. According to current guidelines, not only risk scores (Sokal, Hasford, ELTS) but also patient-specific factors must be considered. In young patients with high-risk disease, second-generation TKIs (dasatinib, nilotinib, bosutinib) are recommended to achieve deeper and faster responses, thereby increasing the likelihood of future treatment-free remission (TFR). For elderly or low-risk patients, first-generation imatinib remains a safe and effective option.Comorbidities significantly influence drug choice The type of BCR-ABL1 transcript should also be considered; while common variants do not consistently affect outcomes, rare atypical transcripts may influence monitoring and drug selection.Molecular response must be closely monitored with RT-qPCR (international scale, %IS) every three months. Achieving BCR-ABL1 targets of ≤10% at 3 months, ≤1% at 6 months, and ≤0.1% at 12 months (major molecular response, MMR) strongly predicts better long-term outcomes and TFR achievement.BCR-ABL1 >10% at 3 months is considered a warning, while failure to achieve MMR by 12 months is an adverse prognostic sign. Once stable MMR is achieved, monitoring can be extended to every 3–6 months, but in potential TFR candidates or in cases of suspected relapse, more frequent testing is recommended.For patients with primary or secondary resistance, mutation analysis of the BCR-ABL1 kinase domain is strongly recommended. Mutations determine TKI sensitivity and guide therapeutic choices. The T315I “gatekeeper” mutation confers resistance to all first- and second-generation TKIs; in such cases, ponatinib or the novel allosteric inhibitor asciminib is preferred. Other mutations, such as P-loop (Y253H, E255K/V, F359), reduce nilotinib sensitivity but may still respond to dasatinib, bosutinib, or ponatinib. Conversely, mutations like F317L reduce dasatinib efficacy. Thus, therapy must be tailored to the patient’s mutational profile.In cases of intolerance, dose reduction is the first strategy rather than immediate drug substitution.Persistent grade 3–4 toxicities, however, necessitate switching to another TKI. Ponatinib should be initiated at the lowest effective dose, with further reductions once major molecular response is achieved, in order to mitigate cardiovascular risks. The favorable safety profile of asciminib makes it an important option for patients intolerant to multiple TKIs. TFR is feasible in patients with durable deep molecular responses (MR^4 or MR^4.5) after at least 4–5 years of TKI therapy. Eligibility criteria include:chronic-phase disease only, no history of accelerated/blast phase, no prior resistance, and reliable PCR monitoring. Following TKI discontinuation, BCR-ABL1 should be monitored monthly for the first 6–12 months and every 2–3 months thereafter. Loss of MMR (≥0.1%) requires immediate TKI reinitiation, and responses are typically regained quickly. Longer duration of TKI therapy and prolonged deep response increase the likelihood of durable TFR. TKI optimization in CML must be individualized, balancing risk scores, comorbidities, transcript types, molecular milestones, and mutation status. Intolerance can often be managed with dose reduction or switching to alternative TKIs, while TFR remains an attainable and important quality-of-life goal for appropriately selected patients.

https://doi.org/10.1016/j.htct.2025.106194

Abstract 018

Mastocytosis

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Mastocytosis is a rare, heterogeneous myeloid neoplasm characterized by clonal proliferation and abnormal accumulation of mast cells. It is classified into cutaneous mastocytosis (CM), systemic mastocytosis (SM), mast cell sarcoma (MCS), and extracutaneous mastocytoma. SM comprises indolent and smouldering variants as well as advanced forms, including aggressive SM and mast cell leukemia. Clinical manifestations range from asymptomatic disease to life-threatening presentations with cytopenia, malabsorption, hepatosplenomegaly, lymphadenopathy, ascites, or osteolytic bone lesions. Mediator-related symptoms such as flushing, diarrhea, and anaphylaxis are common. The KIT D816V gain-of-function mutation represents the central pathogenic driver, leading to ligand-independent KIT activation and uncontrolled mast cell proliferation. Diagnosis relies on WHO and ICC criteria, integrating histopathology, immunophenotyping, and KIT mutation analysis. Management depends on disease subtype: non-advanced forms are treated symptomatically with antihistamines, mast cell stabilizers, and trigger avoidance, while advanced SM requires cytoreductive agents and KIT inhibitors. Midostaurin and avapritinib, potent inhibitors of KIT D816V, have demonstrated significant improvements in mediator-related symptoms, overall survival, and quality of life, whereas imatinib is ineffective in D816V-positive patients but may benefit other KIT genotypes (e.g., K509I, V560G, F522C). Emerging inhibitors such as bezuclastinib and elenestinib show promising efficacy. Allogeneic hematopoietic stem cell transplantation remains the only curative option for aggressive SM. In summary, mastocytosis is a clinically heterogeneous disease in which early-stage treatment focuses on symptom control and anaphylaxis prevention, whereas advanced disease benefits from targeted therapy that has markedly improved prognosis.

https://doi.org/10.1016/j.htct.2025.106195

Abstract 019

INNOVATIVE TREATMENTS FOR MYELOFIBROSIS

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Myelofibrosis (MF) is a Philadelphia chromosome-negative chronic myeloproliferative neoplasm characterized by fibrosis in the bone marrow, cytopenias and extramedullary hematopoiesis (1). In the 2022 International Consensus Classification (ICC) and the 5th edition of the World Health Organization (WHO) classification, myelofibrosis is subclassified as prefibrotic and overt primary myelofibrosis (2). The 2022 WHO or ICC criteria should be used for PMF diagnosis. The disease is a clonal stem cell disorder, with the most common genetic mutations are JAK2 V617F (60%), MPL (13.6%) and calreticulin (CALR) (22-35%). Approximately 90% of PMF patients have these mutations, while triple-negative cases have non-driver mutations. Chromosomal abnormalities may also be observed in PMF (1, 3-5). After diagnosis, prognostic risk scoring is performed for the treatment and management of patients. Symptoms are assessed using the myeloproliferative neoplasm symptom assessment form. IPSS, DIPSS, DIPSS Plus, MIPSS70, MIPSS70+v2, and GIPSS are the scoring systems used in PMF. Patients are divided into low/high risk groups, the reatment planning is based on this and patient's symptoms (6-7). The only curative and survival-enhancing treatment method in PMF is allogeneic hematopoietic stem cell transplantation (ASCT), which has high mortality and morbidity rates. In high-risk PMF patients, the treatment decision is primarily shaped by whether the patient is a candidate for ASCT. Treatments other than ASCT are currently aimed more at palliative care, controlling symptoms, and reducing spleen size (2). In patients with low-risk PMF who are asymptomatic, they may be observed only or included in a clinical trial. In symptomatic patients, hydroxyurea, ruxolitinib, or interferon may be used, or enter a clinical trial (2). In PMF, treatment decisions related to symptoms are made by considering anemia, splenomegaly, and constitutional symptoms. Especially in patients with prominent anemia, androgens, prednisolone, lenalidomide, thalidomide, and pomalidomide may be preferred if the patient does not have splenomegaly. New studies are investigating the efficacy of combining ruxolitinib with immunomodulatory agents. The efficacy of erythropoiesis-stimulating agents is limited, and studies show that luspatercept has a low effect in PMF patients. Momelotinib and pacritinib are also other treatment options for these patients and they have positive effects on increasing erythropoietic activity, splenomegaly and constitutional symptoms (2,3,8,9). In patients with anemia, splenomegaly, and constitutional symptoms, momelotinib should be the first choice. If splenomegaly is present alone, hydroxyurea, interferon, or ruxolitinib may be preferred. In patients resistant to ruxolitinib, fedratinib or momelotinib is preferred, while pacritinib is recommended in thrombocytopenic cases (2,10-13). There are studies on many agents planned for use alone or in combination with ruxolitinib in PMF patients. Studies exist on pelabresib, navitoclax, parsaclisib, pegylated interferon alpha, selinexor and luspatarcept in combination with ruxolitinib, and ongoing studies exist on the use of navtemadlin, bomedemstat, RUV120, and imetelstat as single agents in PMF treatment. The preliminary analysis report of these studies at the 2022 American Society of Hematology annual meeting. There is also a preclinical study on monoclonal antibody therapy (INCA 033989) specifically targeting mutant CALR, which has been shown to be effective in thrombocytosis (2).

https://doi.org/10.1016/j.htct.2025.106196

Abstract 020

CURRENT TREATMENT APPROACHES IN ELDERLY PATIENTS WITH ACUTE MYELOID LEUKEMIA

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Acute myeloid leukemia (AML) is the most common acute leukemia in adults, with a median age at diagnosis of 68 years. Estimated 5-year survival differs significantly by age and is <10% for patients older than 60 years (1). Older patients represent highly heterogeneous group and require careful evaluation of comorbidities and frailty. When selecting a treatment plan for older patients, physicians must carefully weigh the risk of adverse events and the potential impact on quality of life (QOL) against possible survival benefits. They are generally unsuitable for curative treatment options such as intensive chemotherapy and hematopoietic stem cell transplantation. Consequently, treatment strategies aimed at improving outcomes and patient compliance continue to evolve. Lower intensity regimens include hypomethylating agents (HMA), such as azacitidine or decitabine, or low-dose cytarabine (LDAC). The introduction of azacitidine in 2012 and decitabine in 2015 significantly transformed the treatment landscape for these patients (2-4). However, HMA monotherapy has been associated with remission rates of 30% or less and survival of under one year (2, 5). As HMA therapy is considered the standard backbone for AML patients unfit for intensive chemotherapy, the majority of phase III trials have been designed to evaluate novel agents in combination with HMA versus HMA alone. In 2018, azacitidine and venetoclax combination was approved for patients with newly diagnosed AML aged ≥75 years old or ineligible for intensive chemotherapy (6). The VIALE-A trial demonstrated improved overall survival (OS) with venetoclax-azacitidine versus plasebo-azacitidine (14.7 and 9.6 months, respectively). Moreover, with long term follow-up, patients achieving CR/CRi with measurable residual disease (MRD) negativity had a longer median OS (34.2 months) compared to those without MRD response (18.7 months) (7). Profound cytopenias accompanied by concurrent infections, bone marrow evaluations during treatment cycles to evaluate cellularity, treatment delays, and prolonged hospitalizations are frequently observed. Nevertheless, due to its manageable side effect profile and a protocol allowing dose and schedule modifications,

venetoclax-azacitidine has become a first-line treatment for elderly AML patients worldwide who are unfit for intensive therapy. Similarly, the VIALE-C trial, which randomized patients to LDAC/venetoclax versus LDAC/placebo, demonstrated improved CR/Cri (48% vs 13%) and OS (8.4 vs 4.1 months) in the venetoclax arm.(8) The combination of HMAs with other agents, together with the establishment of genetic risk profiles and identification existing mutations, underscores the importance of individualized therapy. Among promising agents, Ivosidenib monotherapy or its combination with HMA has shown superiority in OS, CR/Cri, and EFS for IDH- 1mutated de novo AML (AGILE trail) (9). Patients with TP53 alterations, however, continue to experience significantly worse survival outcomes (10). The CD47 monoclonal antibody magrolimab has demonstrated clinical efficacy when combined with azacitidine or with azacitidine/venetoclax (11).Several multiple novel agents and combinations are under investigation, including fromtline FLT3i, oral HMAs, and triplets combining HMA, venetoclax and targeted agents (12). Considering that none of these regimens are curative, it remains a matter of debate whether dynamically assessing patient frailty and using non-intensive therapies can provide a bridge to allogenic stem cell transplantation.

https://doi.org/10.1016/j.htct.2025.106197

Abstract 021

HEPATIC VENO-OCCLUSIVE DISEASE

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Hepatic veno-occlusive disease, also called sinusoidal obstruction syndrome (VOD/SOS), is a severe complication which usually occurs due to conditioning regimens used for hematopoietic stem cell transplantation (HSCT). It is characterized by hepatomegaly, hyperbilirubinemia, ascites and right upper quadrant pain and usually develops within the first 20-30 days after transplant. It is accepted to be a result of endothelium and hepatocyte damage caused by chemotherapy and radiotherapy of the conditioning regimen. Current studies suggest that the primary site of toxic injury is the hepatocyte, subsequently followed by damage to the central veins in zone 3 of the hepatic acinus and sinusoidal endothelial cells. Early changes include fibrin deposition, venous occlusion, progressive venous micro-thrombosis and sinusoidal occlusion. These changes lead to severe clinical problems including portal hypertension, hepatorenal syndrome and hepatocellular necrosis, which may ultimately result in multiorgan dysfunction (MOD) and death. Previously, the Baltimore and Seattle criteria were used for VOD/SOS diagnosis; however, the limitations of these criteria for VOD/SOS diagnosis (especially in anicteric children and those who have symptom onset after 21 days), led to establishment of the EBMT (European Society for Blood and Marrow Transplantation) 2017 VOD/SOS criteria which evaluates pediatric and adult patients separately. The EBMT 2017 criteria is comprised of laboratory and clinical findings such as transfusion-resistant thrombocytopenia, unexplained weight gain, hepatomegaly, ascites and elevation in bilirubin levels. Despite the advantages brought by this criteria, it is still difficult to diagnose VOD/SOS. Several approaches to prevent its development of VOD/SOS were put forth, including individualized dosing of chemotherapy, reduction of the intensity of the conditioning regimens, close monitoring of the levels of busulfan and cyclophosphamide and also reducing their use. Prostaglandin E1 and tissue-plasminogen activator with or without concurrent heparin have been explored in VOD/SOS treatment; however, these approaches have shown little success, as is the case with supportive treatments. Defibrotide (DF) emerged as the most promising medication for both prophylaxis and treatment in patients with VOD/SOS. DF is a single-stranded polydeoxyribonucleotide with anti-inflammatory, anti-ischemic, anti-thrombotic, and thrombolytic properties in addition to its protective effects on endothelial cells. DF is approved for adult and pediatric patients with VOD/SOS with renal or pulmonary dysfunction after HSCT in the United States, and for severe VOD/SOS post-HSCT in patients aged >1 month in the European Union. In addition, several studies have examined DF prophylaxis can reduce the incidence of VOD/SOS in high-risk patients. Although the literature is unanimous for the use of DF in patients diagnosed with VOD/SOS, its use as a prophylactic agent has not been approved; even though many studies have reported reduced VOD/SOS incidence and severity with DF prophylaxis.

https://doi.org/10.1016/j.htct.2025.106198

Abstract 022

TREATMENT OF RELAPSED/REFRACTORY DLBCL

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Fifteen percent of DLBCL patients are refractory to the first line of therapy, while 25% experience relapse after response. The management of these patients is planned according to the patient's suitability for high-dose chemotherapy and whether the disease is refractory/early relapse (BSH guideline, 2025). While HSCT provides long-term survival in patients who are suitable for treatment and are chemosensitive (CORAL study), long-term survival compared to HSCT has been achieved in non-chemosensitive patients with CAR-T therapies ZUMA-7 and TRANSFORM studies. CAR-T therapies are approved as first-line treatment for patients with refractory/early relapse. However, some r/r DLBCL patients are not suitable for HSCT and CAR-T treatments due to age and comorbidities, and some are resistant to these treatments or relapse after these treatments. Tafasitamab – Lenalidomide combination is approved for patients with relapsed DLBCL, NOS who are not eligible for HSCT or CAR-T therapies (L-MIND study). The efficacy of Glofitamab – GemOx has also been proven in patients with relapsed DLBCL, NOS who are not suitable for HSCT or CAR-T therapy in the STARGLO study. Loncastuximab is a single-agent ADC used in r/r DLBCL. Due to its cumulative toxicity, long-term use is not suitable, and a one year treatment was planned in the LOTIS-

2 study. This study also included a significant number of patients with refractory and high-grade lymphoma, making it one of the limited treatment options in this high-risk patient group. Polatuzumab-BR was compared with BR in a phase II trial. Pola-BR demonstrated superiority in r/r DLBCL patients who were not suitable for HSCT and CAR-T therapies, and it should be considered an option, particularly in patients with < 60 years, IPI<2, ABC phenotype, non-bulky, and relapsed patients.Glofitamab and epcoritamab are a treatment option for r/r DLBCL patients. CAR-T therapies are costly and have high side effects, leading to treatment delays, especially in patients with rapid progression, and requiring specialized centers. BiTE therapies, with fewer side effects, lower costs, and easier access, may be an alternative for patients unable to access CAR-T therapies. The inclusion of high-grade lymphoma cases in trials provides an alternative in this group with limited treatment options. Its use will also increase as an important part of combination treatments. The XPO1 inhibitor Selinexor has been tested in SADAL study in patients with R/R DLBC lymphoma who have no treatment options. Although response rates are low, it may increase the effectiveness of these treatments as part of combination therapies. The SADAL study demonstrated greater efficacy in the GCB phenotype. Since there are no randomized studies of TL, Loncastixumab, BiTE treatments, Pola-BR and XPO1 inhibitors with each other, the choice of these treatments can be determined based on subgroup analyses in the studies. Allogeneic stem cell transplantation, a treatment with high NRM and morbidity, remains an alternative treatment for DLBCL patients. Although prospective studies have not compared it with CAR-T therapies, retrospective studies have not found any significant differences (Blood 2020, Dreger et al)

https://doi.org/10.1016/j.htct.2025.106199

Abstract 023

MODULATION OF INEFFECTIVE ERYTHROPOIESIS IN THALASSEMIA

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Introduction: Thalassemia comprises inherited disorders characterized by reduced globin chain synthesis, leading to an imbalance between α- and β-globin chains. Ineffective erythropoiesis (IE) is the long-term outcome of a complex interaction of molecular mechanisms, primarily involving the bone marrow and its intricate bidirectional communication with the liver, spleen, and gut, ultimately leading to the production of pathological RBCs. IE is the primary driver of thalassemia and the main contributor to most of the clinical manifestations of this disorder. In patients with β-thalassemia, the bone marrow contains approximately six times more erythroid precursors than in healthy individuals, and the rate of apoptotic cell death is nearly four times higher than normal (1). In thalassemia, the altered differentiation of erythroid progenitors appears to worsen IE, coupled with increased proliferation and apoptosis, ultimately leading to anemia, extramedullary hematopoiesis, splenomegaly, and systemic iron overload. Therefore, advanced characterization of the molecular foundations of these complex processes is crucial for developing effective disease-modifying therapies. Therapeutic approaches seek to modulate pathways that reduce iron absorption (for example, activating hepcidin through Tmprss6 antisense oligonucleotides—ASOs) or pathways that increase erythropoiesis (e.g., erythropoietin [EPO] administration or modulating red blood cell (RBC) synthesis via control of transferrin receptor 2 [Tfr2]) or activin II Receptor Ligand Traps (2). **Pathophysiology of Ineffective Erythropoiesis:** Erythropoiesis is a tightly regulated process producing billions of functional red blood cells (RBCs) daily. In thalassemia, this process is disrupted. The hallmark is the substantial expansion of early-stage erythroid precursors in the bone marrow in response to elevated erythropoietin, coupled with premature death of late-stage precursors, resulting in a low output of mature RBCs. Therapeutic Strategies Targeting IE Building on the mechanistic understanding of IE, therapies aim to address the underlying pathology rather than merely treating anemia or iron overload. 1. Activin II Receptor Ligand Traps Luspatercept is a leading therapeutic that traps TGF-β superfamily ligands (including GDF11 and Activin A). By sequestering these ligands, luspatercept prevents receptor binding, promoting terminal erythroid maturation and reducing IE. Clinical trials show that luspatercept significantly increases hemoglobin and reduces transfusion requirements in β-thalassemia. 2. Targeting Iron Metabolism Novel agents modulate iron metabolism to reduce iron overload and improve erythropoiesis. Ferroportin inhibitors (e.g., VIT-2763) aim to block iron export from cells. Other strategies aim to enhance hepcidin activity or inhibit erythroferrone (ERFE) (4). 3. Gene Therapy and Gene Editing Emerging approaches include gene-based strategies to correct globin imbalance or regulate erythropoiesis, with potential to reduce IE. 4. Combination and MicroRNA-Targeting Approaches indicates that combining Tmprss6-ASO with EPO or Tfr2 haploinsufficiency yields superior outcomes in Hb and splenomegaly reduction, compared with single therapies. Additionally, targeting dysregulated microRNAs may provide supplementary therapeutic avenues (5). **Conclusion:** IE remains a central feature of β-thalassemia, driven by iron dysregulation, oxidative stress, and impaired erythroid maturation via TGF-β signaling. Luspatercept and other activin receptor ligand traps have demonstrated clinical benefit. Emerging combinations that couple iron-restriction strategies with erythropoietic stimulation show promise for enhanced efficacy. Ongoing research is essential to optimize regimens, identify responders, and translate preclinical findings into durable clinical solutions.

https://doi.org/10.1016/j.htct.2025.106200

Abstract 024

STEM CELL MOBILIZATION: AUTOLOGOUS AND ALLOGENEIC

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In autologous HSCT, stem cells are collected from the patient following prior exposure to chemotherapy. The standard mobilization approach is granulocyte colony-stimulating factor (G-CSF) alone or in combination with chemotherapy, such as cyclophosphamide. While chemotherapy-based mobilization may increase CD34+ yields and contribute to disease cytoreduction, it is associated with increased infectious and hematologic complications. Plerixafor, a CXCR4 antagonist, has emerged as a highly effective adjunct in patients with poor mobilization, particularly those heavily pretreated or with impaired marrow reserve. Predictors of mobilization failure include advanced age, extensive prior therapy, and low baseline blood counts. In allogeneic HSCT, stem cells are obtained from healthy donors. G-CSF administration for 4 –5 days remains the standard strategy, providing sufficient peripheral blood stem cell (PBSC) yields and enabling rapid hematopoietic recovery. Compared with bone marrow harvest, PBSC collection is less invasive and results in higher CD34+ cell counts, but is associated with an increased incidence of chronic graft-versus-host disease. Plerixafor has been investigated as an alternative or adjunct in specific donor populations with inadequate mobilization, though its use remains limited. Donor safety, tolerability of mobilization agents, and long-term health implications are major considerations in the allogeneic context. Despite distinct indications, both autologous and allogeneic mobilization share key challenges: ensuring adequate stem cell yield, minimizing toxicity, and reducing the need for multiple apheresis procedures. Recent advances have improved mobilization outcomes, yet the problem of poor mobilizers persists. Novel mobilizing agents, optimization of dosing schedules, and risk-adapted strategies are under evaluation to enhance efficiency and safety. Stem cell mobilization remains a critical determinant of HSCT success. Autologous mobilization is challenged by prior therapy and patient-related factors, whereas allogeneic mobilization prioritizes donor safety and graft quality. The incorporation of agents such as plerixafor has significantly expanded the mobilization armamentarium. Future directions include individualized mobilization protocols, novel pharmacologic combinations, and strategies aimed at improving long-term transplant outcomes.

https://doi.org/10.1016/j.htct.2025.106201

Abstract 025

LABORATORY EVALUATION IN MYELOMA: WHICH TESTS SHOULD BE PREFERRED DURING DIAGNOSIS AND FOLLOW-UP?

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Introduction: Multiple myeloma (MM) is a plasma cell malignancy characterized by clonal proliferation of abnormal plasma cells, production of monoclonal immunoglobulins, and organ dysfunction, often defined by the CRAB criteria (hypercalcemia, renal impairment, anemia, and bone disease). Laboratory testing is central to diagnosis, risk assessment, and monitoring during therapy and remission. **Baseline Evaluation at Diagnosis: Hematology and Biochemistry** - CBC with differential → detection of anemia, leukopenia, or thrombocytopenia. - Biochemistry panel → creatinine, urea, calcium, albumin, LDH. - β2-microglobulin and albumin → incorporated into the Revised International Staging System (R-ISS). - CRP may reflect disease activity (IL-6 driven). **Monoclonal Protein Studies:** - Serum protein electrophoresis (SPEP): quantifies the M-spike. - Urine protein electrophoresis (UPEP, 24 h): detects Bence Jones proteinuria. - Immunofixation (serum and urine): confirms the type of heavy and light chain. - Serum free light chain (sFLC) assay: critical for light-chain, non-secretory, and oligo-secretory myeloma. **Bone Marrow Examination** - Morphology: percentage of plasma cells. - Multiparameter flow cytometry: demonstrates clonality and immunophenotype. - Cytogenetics/FISH: identifies high-risk abnormalities (del[17p], t[4;14], t[14;16]) that influence prognosis. **Laboratory Evaluation During Follow-Up Routine Monitoring** - M-protein quantification (SPEP/UPEP): mainstay of monitoring. - Immunofixation: required to confirm complete response. - sFLC assay: sensitive tool for relapse, especially in light-chain disease. - CBC, renal function, calcium, LDH, β2-microglobulin: routine for treatment toxicity and disease burden. **Advanced Monitoring** - Minimal Residual Disease (MRD): assessed via next-generation flow cytometry or next-generation sequencing. MRD negativity correlates with superior survival and is increasingly used as a response endpoint. - Mass spectrometry and liquid biopsy are promising future tools for detecting residual disease with high sensitivity. **Preferred Tests in Clinical Practice** - At diagnosis: a comprehensive panel including SPEP, UPEP, serum/urine immunofixation, sFLC, bone marrow studies (with cytogenetics/FISH), and advanced imaging is essential. - During follow-up: routine monitoring can be streamlined to SPEP and sFLC, supplemented by basic hematology and chemistry. UPEP is reserved for patients with baseline significant proteinuria. - In specialized centers: MRD testing should be incorporated, especially in clinical trials, to refine response evaluation. **Conclusion** Laboratory evaluation remains the cornerstone of myeloma diagnosis and long-term management. While a full diagnostic panel is indispensable at baseline, streamlined monitoring with SPEP and sFLC is sufficient in most patients during follow-up. Advanced tools such as MRD assessment and mass spectrometry are reshaping the landscape, providing unprecedented sensitivity in disease monitoring. The optimal combination of tests ensures accurate diagnosis, appropriate risk stratification, and effective treatment monitoring in multiple myeloma.

https://doi.org/10.1016/j.htct.2025.106202

Abstract 026

ACUTE AND CHRONIC GRAFT-VERSUS-HOST DISEASE: INSIGHTS INTO ETIOPATHOGENESIS

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Graft-versus-host disease (GvHD) remains one of the most significant complications following allogeneic hematopoietic stem cell transplantation (HSCT), contributing substantially to morbidity and mortality despite advances in conditioning regimens, donor selection, and prophylactic strategies. Understanding the etiopathogenesis of acute and chronic GvHD is essential for improving risk stratification, tailoring prophylaxis, and designing novel targeted therapies. Acute GvHD (aGvHD) typically develops within the first 100 days post-transplant and arises from a multi-step immunopathological cascade. Conditioning regimens induce extensive tissue damage, releasing danger-associated molecular patterns (DAMPs) and pro-inflammatory cytokines such as TNF-α, IL-1, and IL-6, which activate host antigen-presenting cells (APCs). Activated APCs prime donor T cells, leading to the expansion of alloreactive effector T cells. These T cells infiltrate target organs—most prominently the skin, gastrointestinal tract, and liver—mediating tissue destruction via cytotoxic molecules (perforin, granzyme) and further amplification of the inflammatory milieu. Regulatory T cell (Treg) dysfunction, microbial translocation from intestinal damage, and loss of epithelial integrity amplify these effects. Emerging evidence highlights the contribution of innate immune cells, the microbiome, and cytokine networks in shaping the severity and trajectory of aGvHD. Chronic GvHD (cGvHD), in contrast, is a complex, multifactorial syndrome that shares features with autoimmune and fibrotic disorders. It generally manifests beyond day 100, although temporal overlap with aGvHD is increasingly recognized. The pathogenesis of cGvHD involves sustained immune dysregulation, including aberrant thymic recovery, impaired central and peripheral tolerance, and persistence of autoreactive and alloreactive T and B cells. B cell hyperactivity, autoantibody production, and activation of germinal center–like reactions contribute to chronic inflammation. Crosstalk between T follicular helper cells, pathogenic B cells, and fibroblasts drives tissue remodeling and fibrosis. Key target organs include the skin, lungs, liver, eyes, and mucous membranes, with progressive organ dysfunction severely impacting quality of life. Recent studies underscore the importance of profibrotic cytokines (e.g., TGF-β, PDGF) and aberrant tissue repair pathways in perpetuating cGvHD. Advances in molecular and cellular profiling have provided novel insights into both acute and chronic disease mechanisms. High-throughput sequencing, proteomic analyses, and microbiome studies have identified candidate biomarkers for early diagnosis, disease monitoring, and therapeutic stratification. These findings are paving the way toward precision medicine approaches, including selective inhibition of JAK/STAT pathways, B cell depletion strategies, adoptive Treg therapy, and microbiota modulation. Despite these promising developments, challenges remain in balancing graft-versus-host effects with graft-versus-leukemia (GvL) activity, underscoring the need for therapeutic interventions that preserve antitumor immunity while mitigating alloreactivity. In summary, both acute and chronic GvHD arise from complex, overlapping yet distinct immunopathological processes that reflect dysregulated interactions between donor-derived immune cells, host tissues, and the microenvironment. Ongoing research continues to refine our understanding of GvHD biology, which is critical for developing innovative therapies and improving long-term outcomes in allogeneic HSCT recipients.

https://doi.org/10.1016/j.htct.2025.106203

Abstract 027

CHELATION THERAPY IN THALASSEMIA

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Thalassemia major is a severe hereditary hemoglobinopathy characterized by ineffective erythropoiesis and transfusion-dependent anemia. Regular red blood cell transfusions remain the cornerstone of supportive treatment; however, they inevitably result in progressive iron overload due to the absence of physiological mechanisms for iron excretion. Iron accumulation predominantly affects the liver, heart, and endocrine organs, leading to cirrhosis, cardiomyopathy, arrhythmias, and multiple endocrinopathies. Consequently, iron chelation therapy constitutes a fundamental component of long-term management in patients with thalassemia major. The first clinically available chelating agent was deferoxamine (DFO) promotes urinary and fecal iron excretion. Long-term use of DFO has significantly improved survival by reducing iron-related cardiac mortality. Nevertheless, its administration—via subcutaneous or intravenous infusion for 8–12 hours on most days of the week—poses substantial challenges to adherence, particularly in pediatric and adolescent populations. To address these limitations, oral chelators were developed. Deferiprone (DFP) is effective in reducing myocardial iron burden and preventing cardiac dysfunction, although it carries the risk of agranulocytosis, requiring strict hematological monitoring. Deferasirox (DFX) has demonstrated efficacy in maintaining negative iron balance and reducing hepatic iron concentration, thereby improving adherence and overall patient satisfaction. In cases of severe or refractory iron overload, combination therapy has been employed. The concurrent use of DFO and DFP exhibits synergistic effects, particularly in the clearance of cardiac iron. Emerging data also support the potential benefits of combining DFO with DFX in select clinical scenarios. These strategies allow for individualized treatment based on iron burden, organ involvement, and patient tolerance. Monitoring of chelation efficacy is essential. Serum ferritin is widely utilized as a surrogate marker of body iron, though it may be confounded by inflammation or hepatic injury. T2-star magnetic resonance imaging provides a more reliable and non-invasive quantification of cardiac and hepatic iron, enabling timely therapeutic adjustments and prevention of irreversible organ damage. Chelation therapy has transformed the prognosis of thalassemia major, shifting the natural history from early mortality to survival into adulthood with improved quality of life. Nevertheless, challenges persist, including variability in drug availability, treatment adherence, and adverse event profiles. Future perspectives include optimization of chelation regimens, development of safer agents, and curative

approaches such as gene therapy and hematopoietic stem cell transplantation, which may ultimately reduce or eliminate the lifelong requirement for transfusion and chelation.

https://doi.org/10.1016/j.htct.2025.106204

Abstract 028

RELAPS/REFRACTORY MANTLE CELL LYMPHOMA TREATMENT

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Mantle cell lymphoma (MCL) is a rare and aggressive subtype of non-Hodgkin lymphoma (NHL) characterized by the overexpression of cyclin D1 due to the chromosomal translocation t(11;14)(q13;q32). Despite advances in therapeutic approaches, MCL remains a significant clinical challenge, particularly in relapsed and refractory (R/R) cases. Relapse occurs when the disease reappears after an initial response to therapy, while refractory MCL refers to cases where the disease fails to respond adequately to standard treatment regimens. Both conditions are associated with poor prognosis and limited treatment options, reflecting the need for novel therapeutic strategies. Relapsed MCL is characterized by clonal evolution and the emergence of more aggressive phenotypes, including resistance to previously administered therapies. Refractory cases, on the other hand, exhibit intrinsic or acquired resistance mechanisms, such as mutations in the B-cell receptor (BCR) signaling pathway, TP53 abnormalities, and alterations in DNA damage response genes. Recent therapeutic advances have improved outcomes for R/R MCL patients. Targeted therapies, including Bruton's tyrosine kinase (BTK) inhibitors such as ibrutinib, acalabrutinib, and zanubrutinib, have demonstrated significant efficacy by disrupting BCR signaling. Ibrutinib, the first BTK inhibitor approved for R/R MCL, has shown durable responses in clinical trials, although resistance to BTK inhibitors is a growing concern. Lenalidomide, an immunomodulatory agent, and venetoclax, a BCL-2 inhibitor, have also shown promise in heavily pretreated patients. Furthermore, chimeric antigen receptor (CAR) T-cell therapy targeting CD19, such as brexucabtagene autoleucel, represents a groundbreaking approach for patients with chemorefractory disease. While these therapies offer hope, their application is often limited by adverse events, accessibility, and high costs. Biological heterogeneity within MCL further complicates the management of R/R cases. The proliferation index (Ki-67), TP53 mutation status, and the presence of blastoid or pleomorphic variants are critical prognostic factors influencing treatment decisions. Additionally, the integration of next-generation sequencing (NGS) and molecular profiling enables the identification of actionable mutations and pathways, paving the way for personalized medicine. Despite these advancements, challenges remain in optimizing the sequencing of therapies, managing toxicities, and overcoming resistance. Clinical trials continue to explore novel agents, including bispecific antibodies, proteasome inhibitors, and checkpoint inhibitors, as well as combination strategies to enhance efficacy and minimize resistance. Moreover, the role of minimal residual disease (MRD) monitoring in guiding treatment remains an area of active investigation. In conclusion, relapsed and refractory MCL represents a complex clinical entity with significant unmet needs. While recent therapeutic innovations have improved outcomes, the heterogeneity of the disease necessitates a personalized approach to treatment. Future research should focus on elucidating resistance mechanisms, refining therapeutic strategies, and improving access to novel treatments to enhance the prognosis for this challenging patient population.

https://doi.org/10.1016/j.htct.2025.106205

Abstract 029

SUMMARY: OPTIMIZATION OF TREATMENT IN PHILADELPHIA CHROMOSOME-POSITIVE ACUTE LYMPHOBLASTIC LEUKEMIA (PH+ ALL)

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Philadelphia chromosome-positive acute lymphoblastic leukemia (Ph+ ALL) is a high-risk subtype of ALL, historically associated with poor outcomes. The introduction of tyrosine kinase inhibitors (TKIs) has dramatically changed its therapeutic landscape. Current optimization strategies focus on integrating TKIs with chemotherapy, immunotherapy, and, in selected cases, allogeneic stem cell transplantation (allo-HSCT), while tailoring treatment according to minimal residual disease (MRD) status and patient characteristics. Induction therapy now commonly consists of a TKI combined with corticosteroids and/or reduced-intensity chemotherapy, aiming to achieve remission with lower toxicity compared to traditional intensive regimens. Commonly used TKIs include imatinib, dasatinib, and ponatinib, with the latter being preferred in cases with the T315I mutation due to its broader activity. Consolidation therapy is designed to eradicate residual disease. Achieving MRD negativity is the primary goal, as it strongly predicts long-term survival. Strategies include continued TKI administration combined with short chemotherapy blocks or novel agents such as blinatumomab, a CD19-targeted bispecific T-cell engager. Allo-HSCT remains an important option for younger, fit patients, especially those with persistent MRD or high relapse risk. However, accumulating evidence suggests that deep and durable remissions may be achievable without transplantation when combining TKIs with immunotherapies. Maintenance therapy typically involves prolonged TKI treatment, often for at least two to three years, with ongoing MRD monitoring to guide adjustments. In the relapsed or refractory setting, therapeutic options expand to include next-generation TKIs such as ponatinib, immunotherapies including blinatumomab and the CD22-targeted antibody-drug conjugate inotuzumab ozogamicin, and chimeric antigen receptor T-cell (CAR-T) therapies targeting CD19, which have shown promising results in heavily pretreated patients. The core principles of treatment optimization in Ph+ ALL include: 1. MRD-directed decision-

making, as MRD negativity is the strongest predictor of favorable outcomes. 2. Reducing treatment-related toxicity, particularly in elderly or frail patients, by minimizing intensive chemotherapy and incorporating TKIs with immunotherapy. 3. Individualizing the role of allo-HSCT, reserving it primarily for patients with persistent MRD, high-risk features, or early relapse. 4. Integrating novel agents such as blinatumomab, inotuzumab, and CAR-T therapies earlier in the treatment course to improve long-term survival and potentially reduce the need for transplantation. In summary, modern management of Ph+ ALL emphasizes TKI-based regimens, MRD-guided therapeutic decisions, and the incorporation of targeted immunotherapies. While allo-HSCT remains relevant for selected patients, emerging evidence suggests that long-term remission may increasingly be achievable without transplantation, especially when potent TKIs and immunotherapies are combined. This evolving paradigm reflects a shift toward personalized, less toxic, and more effective treatment strategies for Ph+ ALL.

https://doi.org/10.1016/j.htct.2025.106206

Abstract 030

CRS AND ICANS MANAGEMENT

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CRS (Cytokine Release Syndrome) CRS is an exaggerated systemic inflammatory response triggered by treatments such as Bispecific Antibodies (BsAb), which activate T cells and cause the release of inflammatory cytokines. CRS symptoms range from mild flu-like symptoms to severe multiorgan failure. Symptoms: Fever, hypotension, hypoxia, tachycardia, organ dysfunction. Physical Examination - Temperature, blood pressure, pulse oximetry or arterial blood gas (or mixed venous blood gas/O2 saturation), skin, heart, and lung examination Laboratory Tests - Complete blood count with differential diagnosis; Coagulation (PT/PTT, fibrinogen, fibrin D-dimer); Chemistry (serum electrolytes, kidney and liver function, uric acid, lactate, LDH; C-reactive protein and ferritin (inflammation); Microbiological tests, especially in neutropenic patients (blood and urine cultures); cardiac markers are clinically indicated. Do not await laboratory results. Laboratory findings: Cytopenias, elevated creatinine, elevated liver enzymes, irregular coagulation parameters, elevated C-Reactive Protein • Management of CRS (see Management Section below) does not require laboratory testing and should not be delayed pending laboratory results. **Management by grade:** • Grade 1: Support only (antipyretic, fluid support, close monitoring). • Grade 2: Low-dose oxygen, IV fluids, low-dose vasopressors if necessary. Tocilizumab may be initiated. • Grade ≥3: High-dose oxygen, intensive care support, vasopressor requirement. **Medical Treatment:** • First choice: Tocilizumab (anti-IL-6 monoclonal antibody) • If no response: Corticosteroids (e.g., dexamethasone, methylprednisolone) are added. • Other support: Antibiotic prophylaxis/treatment, electrolyte balance, close monitoring of organ functions. **Immune Effector Cell-Associated Neurotoxicity Syndrome (ICANS):** Neurological toxicity caused by the inflammatory effects of cytokines released after BsAb treatment results in disruption of the blood-brain barrier and accumulation of inflammatory cytokines in the central nervous system. ICANS is a diagnosis of exclusion after other possibilities have been excluded. Neurological toxicity develops after immune activation. Flu-like symptoms: Fever (≥38.0°C/<100.4°F) (unattributable to another cause); nausea; fatigue; headache; rash; diarrhea, arthralgia, myalgia Hypotension Systemic inflammatory response syndrome (circulatory collapse; vascular leakage; peripheral and/or pulmonary edema; renal failure; cardiac dysfunction; multiorgan failure) Respiratory symptoms: cough; tachypnea; hypoxia, ARDS Rash and Urticaria (allergic reaction) Low-grade CRS is common and high-grade is rare **Diagnosis:** • ICANS should be suspected if there are new or worsening neurological symptoms following recent immune effector cell (IEC) therapy, such as CAR-T cell therapy or BsAb therapy. • Initial symptoms may be mild, such as loss of attention and/or slurred speech or tremors. • Further evaluation to investigate other possible causes should include review of concomitant medications or recent use of CNS-active drugs (e.g., opiates, benzodiazepines). Investigation may include a head CT or brain MRI, and a lumbar puncture to investigate infectious causes. Management: It may occur with or without CRS. **Treatment:** • Grade 1 (mild): Close neurological monitoring, supportive care. • Grade ≥2: Corticosteroids (Dexamethasone or Methylprednisolone) are initiated. • Tocilizumab is generally not effective for ICANS (because the IL-6 antibody does not cross the blood-brain barrier well). • Seizure prophylaxis/treatment: Levetiracetam is preferred. • Intensive care support in severe cases.

Keywords: CRS, ICANS, management, treatment.

https://doi.org/10.1016/j.htct.2025.106207

Abstract 031

GRAFT VERSUS HOST DISEASE PROPHYLAXIS

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Graft–versus–host disease (GvHD) is an important complication that can be observed after allogeneic hematopoietic stem cell transplantation (allo-HSCT). The incidence of Acute GvHD (aGvHD) is around 30%-50% in HLA fully matched allo-HSCT. aGvHD is also common in haploidentical and matched unrelated donor transplantation. The mechanism underlying tissue damage in aGvHD is massive inflammatory cytokine secretion. Proinflammatory cytokines [tumor necrosis factor (TNF)-α, interleukin (IL)-1β, and IL-6] are seen, as well as the increased expression of the receptor repertoire (pattern recognition receptors) on antigen-presenting cells. The most important risk factor for GvHD is HLA mismatch. Other risk factors include sex disparity between donor and recipient, the intensity of the conditioning regimen, increased age, multiparous female donors, ineffective GvHD prophylaxis, and the source of the graft. A study showed that aGvHD was

significantly more common with total body irradiation involving a myeloablative regimen and peripheral stem cell transplantation from a fully matched related donor. GvHD can be acute or chronic based on the clinical presentation and its occurrence after or before 100 days after allo-HSCT. aGvHD may occur beyond this arbitrary cut-off of 100 days. The widely accepted National Institutes of Health consensus criteria havebeen used to classify GvHD. GvHD is divided into four subclasses: 1) Classic aGvHD: Diagnostic and distinctive features of chronic GvHD (cGvHD) are absent. Clinical features of aGvHD and present within 100 days of allo-HSCT or donor lymphocyte infusion (DLI). 2) Persistent and/or recurrent late-onset aGvHD: Features of classic aGvHD without diagnostic manifestations of cGvHD occurring beyond 100 days after allo-HSCT or DLI. 3) Classic cGvHD: Present at any time after HSCT. Diagnostic and distinctive features of cGvHD are present without aGvHD. 4) Overlap syndrome; Features of both cGvHD and aGvHD can be seen. The most commonly affected organsa are:Skin,eyes,oral mucosa,liver,GIS tract,genital organs,lungs,joints and fascia. The most important step for the prevention of GvHD is minimizing risk factors with donor selection and a preparative regimen. GvHD prophylaxis is essential for patients undergoing allo-HSCT. Guidelines for GvHD prophylaxis have been proposed by the European Group for Blood and Marrow Transplantation and European LeukemiaNet . The most common form of GvHD prophylaxis has been the combination of cyclosporine and a short course of methotrexate, which demonstrated improved survival compared to either drug alone. Both cyclosporine and tacrolimus decreased the proliferation of T-lymphocytes . Tacrolimus plus methotrexate is better in decreasing the risk for aGvHD than the combination of cyclosporine and methotrexate, particularly in unrelated HSCT. Both regimens are considered as cornerstones for most GvHD prevention strategies for patients receiving allo HSCT. The effects of the addition of corticosteroids to the combination of cyclosporine and a short course of methotrexate have shown conflicting results. Calcineurin inhibitors and Ruxolitinib, a JAK 1/2 inhibitor, are also used as prophylactic treatment. Unfortunately, there is no standard indication or timing for the initiation of therapy for GvHD. Many agents have been tested alone or in combination with corticosteroids. Extracorporeal photopheresis (ECP), mycophenolate mofetil, sirolimus, everolimus, rituximab, and ibrutinib are available options.

https://doi.org/10.1016/j.htct.2025.106208

Abstract 032

CHRONİC LYMPHOCYTIC LEUKEMIA (CLL): IMMUNOGENETICS AND DIAGNOSIS

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CLL is a monoclonal proliferation of mature B lymphocytes defined by an absolute clonal count $\geq 5 \times 10^9$/L in blood. CLL is clinically heterogeneous: some patients remain asymptomatic for years, whereas others need multiple lines of therapy. BCR biology and immunogenetics. A central driver of CLL biology is B-cell receptor (BCR) signaling. Compared with normal B cells, CLL cells display low IgM expression, variable responses to antigen, and tonic activation of anti-apoptotic pathways. Gene-expression and tissue array studies show up-regulation of BCR-pathway genes in lymph nodes and marrow versus blood, highlighting microenvironmental homing. The IGHV mutation status is a key immunogenetic marker: about 60% of patients have IGHV mutated ≥2% from germline (typically indolent course), while ∼40% have unmutated IGHV (<2%), associated with faster progression and shorter survival before the era of BCR-targeted therapies. Roughly 30% of cases carry stereotyped BCRs; certain stereotyped subsets (e.g., 1 and 2) predict higher-risk disease. Cytogenetic lesions. Recurrent abnormalities identified by FISH (and, when needed, stimulated metaphase karyotype) include del(13q14.3) (most common; favorable when isolated), trisomy 12 (intermediate risk), del(11q22.3) involving ATM (bulky nodes, aggressive disease in younger patients), and del (17p13.1) affecting TP53 (worst prognosis, poor response to traditional chemotherapy). Complex karyotype (≥3 abnormalities) adversely impacts time to treatment and overall survival. Because clonal evolution can occur even without therapy, FISH (± cytogenetics) should be reassessed before each line of treatment, particularly to detect new del(17p). Gene mutations and microRNAs. CLL genomes are relatively simple (≈20 nonsynonymous changes and ≈5 structural lesions on average) and lack a unifying driver. Recurrently mutated genes include SF3B1, NOTCH1, MYD88, ATM, and TP53. NOTCH1 mutations (∼15%) often co-occur with trisomy 12 and may confer reduced sensitivity to anti-CD20 antibodies and increased risk of Richter transformation; SF3B1 relates to DNA-damage responses; TP53 mutations rise from ∼5% in early untreated disease to ∼40% in advanced disease, frequently coexisting with del(17p). ATM mutations (10–15%) often accompany del(11q). MYD88 mutations are enriched in IGHV-mutated CLL and associate with a more indolent course. Non-coding alterations are also relevant: del(13q14.3) deletes the miR-15/16 cluster, derepressing anti-apoptotic programs (e.g., BCL2); loss of miR-181a and over-expression of miR-155 further support leukemic survival. Immune dysregulation. Beyond the malignant clone, CLL features innate and adaptive immune defects: reduced complement, qualitative neutrophil and NK-cell dysfunction, $CD4^+$ T-cell exhaustion with impaired cytotoxicity, Th1→Th2 polarization, and T-regulatory expansion. Hypogammaglobulinemia is common (≈85% over the disease course), with low IgG/IgA correlating with infections. Diagnosis and differential. CLL is most often detected incidentally via lymphocytosis. Flow cytometry confirms a characteristic phenotype—$CD19^+$, CD20 (dim), $CD22^+$, $CD23^+$, $CD200^+$, $CD5^+$, with dim surface Ig (kappa or lambda). When blood clonal B cells are $\geq 5 \times 10^9$/L, no additional testing is needed to confirm CLL. Take-home. Integrating flow cytometry, cytogenetics (FISH/karyotype), and targeted sequencing with IGHV status and non-coding lesions underpins modern risk stratification and sharpens diagnostic certainty in CLL.

https://doi.org/10.1016/j.htct.2025.106209

Abstract 033

INTERPRETATION OF GENETIC TESTING IN CHRONIC MYELOPROLIFERATIVE NEOPLASMS

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Chronic myeloproliferative neoplasms (MPNs) represent a group of clonal hematopoietic stem cell disorders characterized by uncontrolled proliferation of one or more myeloid lineages. The discovery of recurrent driver mutations has transformed the diagnostic, prognostic, and therapeutic landscape of these disorders. This article reviews the clinical relevance of genetic testing in MPNs, with a focus on driver and additional mutations, and their implications for patient management. **Introduction:** Chronic myeloproliferative neoplasms, including polycythemia vera (PV), essential thrombocythemia (ET), and primary myelofibrosis (PMF), are defined by clonal proliferation of hematopoietic progenitors. The molecular era has revealed the critical role of somatic mutations in their pathogenesis. Genetic testing has now become integral to diagnosis, risk stratification, and therapeutic decision-making. Driver Mutations JAK2 - JAK2 V617F mutation is present in approximately 95% of PV cases and 50–60% of ET and PMF cases. - It leads to constitutive activation of the JAK-STAT signaling pathway, driving cytokine-independent proliferation. - Allele burden correlates with clinical phenotype and thrombotic risk. CALR - Detected in 20–30% of ET and PMF patients who are JAK2-negative. - Mutations, mostly frameshift in exon 9, generate novel C-terminal peptides. - CALR-mutated ET patients often present at a younger age, with higher platelet counts and relatively favorable prognosis. MPL - Mutations in the thrombopoietin receptor gene, most commonly W515L/K, occur in 3–5% of ET and PMF cases. - They lead to constitutive activation of thrombopoietin signaling and megakaryocyte proliferation. Additional Mutations - Genes such as ASXL1, EZH2, SRSF2, IDH1/2, and TP53 are frequently mutated, particularly in PMF. - These mutations are not disease-defining but provide prognostic information. - ASXL1 mutation, for instance, is associated with adverse prognosis and impacts decisions regarding allogeneic stem cell transplantation. Clinical Applications Diagnosis - The WHO (2022) and ICC (2022) classifications incorporate genetic testing into diagnostic criteria. - Identification of JAK2, CALR, or MPL mutations confirms clonality and assists in differentiating MPNs from reactive conditions. - Triple-negative patients (negative for JAK2, CALR, MPL) often exhibit more aggressive clinical behavior. Prognosis - Prognostic scoring systems such as MIPSS70, GIPSS, and DIPSS-plus include molecular findings. - The presence of high-risk mutations predicts increased risk of progression to acute leukemia and reduced overall survival. Therapeutic Implications - JAK2 allele burden informs thrombotic risk stratification and the need for cytoreductive therapy. - The detection of adverse mutations influences consideration for hematopoietic stem cell transplantation. - Targeted therapies, such as JAK inhibitors, have been developed based on the molecular pathogenesis of MPNs. Future Perspectives The integration of next-generation sequencing (NGS) panels into clinical practice allows for comprehensive molecular profiling. This facilitates the development of personalized treatment strategies, including targeted therapies beyond JAK inhibition. Ongoing clinical trials are exploring agents directed against epigenetic regulators and splicing factors. **Conclusion:** Genetic testing has revolutionized the approach to chronic myeloproliferative neoplasms. Driver mutations (JAK2, CALR, MPL) remain essential for diagnosis, while additional mutations provide prognostic and therapeutic guidance. The expanding role of molecular testing paves the way toward precision medicine in MPNs.

https://doi.org/10.1016/j.htct.2025.106210

Abstract 034

ATYPICAL HEMOLYTIC UREMIC SYNDROME: FROM PATHOPHYSIOLOGY TO THERAPEUTIC ADVANCES

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Introduction and Pathophysiology: Atypical hemolytic uremic syndrome (aHUS) is a rare, life-threatening thrombotic microangiopathy (TMA) distinct from Shiga toxin-producing Escherichia coli (STEC)-related HUS. It is primarily driven by genetic or acquired dysregulation of the complement system, with pathogenic variants in complement factor H (CFH), factor I (CFI), membrane cofactor protein (MCP/CD46), factor B (CFB), and C3 identified in nearly 60% of patients. The resulting uncontrolled activation of the alternative complement pathway leads to endothelial damage, platelet activation, and microvascular thrombosis, most prominently affecting renal function. Clinically, aHUS is characterized by the triad of microangiopathic hemolytic anemia, thrombocytopenia, and organ injury, most commonly renal but often involving extrarenal systems such as cardiovascular, neurological, dermatological, and gastrointestinal organs. Diagnosis is challenging, requiring exclusion of other TMAs such as thrombotic thrombocytopenic purpura (TTP) and typical HUS. Early and accurate identification is essential to prevent irreversible organ damage. **Advances in Diagnosis and Treatment:** Diagnostic workup integrates clinical, laboratory, and genetic testing. ADAMTS13 activity measurement is critical to exclude TTP, while Shiga toxin assays help differentiate typical HUS. Complement biomarkers, including soluble C5b-9 and factor Ba, are under investigation for their diagnostic and prognostic utility. Genetic testing, employing next-generation sequencing and MLPA, provides prognostic insights and guides therapy, though penetrance remains incomplete and environmental triggers (infections, pregnancy, transplantation) play a pivotal role. Therapeutically, plasma exchange was historically the first-line option, but outcomes were poor with high rates of end-stage renal disease (ESRD). The advent of complement inhibitors has revolutionized management. Eculizumab, a monoclonal antibody targeting C5, effectively halts terminal complement activation, resulting in rapid

hematologic normalization and renal recovery, especially when initiated early. Ravulizumab, a long-acting C5 inhibitor requiring infusions every 8 weeks, offers comparable efficacy with improved quality of life. Real-world studies confirm their sustained safety and effectiveness, though concerns regarding meningococcal infections necessitate vaccination and antibiotic prophylaxis. The duration of therapy remains debated; relapse occurs in 20–30% after discontinuation, particularly in carriers of CFH and CFI mutations. Emerging biomarkers and genetic stratification may enable more personalized discontinuation strategies. **Challenges and Future Perspectives:** Despite therapeutic advances, significant challenges remain. Complement inhibitors impose a lifelong economic burden, raising questions of cost-effectiveness and accessibility. Health-economic analyses highlight the need for balanced strategies between clinical benefit and financial sustainability. Furthermore, gaps persist in standardized diagnostic criteria, access to genetic testing, and long-term outcome data for ravulizumab. Ongoing research focuses on refining biomarkers for risk stratification, identifying novel complement targets, and developing more affordable therapies. Special considerations arise in pregnancy-associated aHUS, post-transplant recurrence, and pediatric populations, where individualized management is critical. In conclusion, aHUS exemplifies a paradigm shift in the treatment of rare complement-mediated diseases. Early recognition, integration of genomic data, and targeted complement inhibition have transformed its prognosis. Future research must focus on optimizing therapeutic duration, expanding access to novel agents, and achieving a cost-effective, precision medicine approach for this devastating disorder.

https://doi.org/10.1016/j.htct.2025.106211

Abstract 035

CURATIVE TREATMENT APPROACHES IN THALASSEMIA

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Supportive therapies prolong survival in transfusion-dependent β-thalassemia (TDT), however they do not eradicate the disease. Advances in hematopoietic stem cell transplantation (HSCT), gene therapy, and gene editing technologies have transformed the therapeutic landscape and brought curative options into clinical practice. Allogeneic HSCT remains the most established curative treatment for thalassemia. In HLA-matched sibling transplantation, event-free and thalassemia-free survival exceed 80–90% in children transplanted at an early stage. Younger patients without advanced iron overload consistently achieve superior outcomes, highlighting the importance of early referral. Alternative donor strategies are being increasingly explored. Haploidentical HSCT using post-transplant cyclophosphamide (PTCy)-based regimens has improved survival rates to 60–70%, though graft failure and graft-versus-host disease (GVHD) remain major limitations. Umbilical cord blood transplantation, although feasible, is hampered by limited cell dose and delayed engraftment. Novel approaches such as α/β T-cell depletion or infusion of regulatory T-cells are under investigation to mitigate GVHD and reduce graft loss. Beyond allogeneic transplantation, lentiviral gene therapy represents a major breakthrough. Autologous $CD34^+$ hematopoietic stem cells can be transduced with a lentiviral vector encoding a functional βA-T87Q-globin gene. In early phase trials such as HGB-204 and HGB-205, 75–80% of patients achieved transfusion independence for ≥12 months. Phase III studies (Northstar-2 and Northstar-3) confirmed long-term transfusion independence in over 80% of non-$\beta0/\beta0$ genotypes and around 70% of $\beta0/\beta0$ patients. Toxicities are mainly conditioning-related, with busulfan causing cytopenias, hepatic veno-occlusive disease, and infertility. Importantly, no insertional leukemogenesis has been reported. Betibeglogene autotemcel (Zynteglo®) received EMA approval in 2019 and FDA approval in 2022, yet its high cost is a significant barrier to widespread adoption. Long-term safety and durability of benefit are being assessed in the ongoing LTF-303 follow-up study. CRISPR-Cas9 gene editing has introduced a paradigm shift in curative approaches. Exagamglogene autotemcel (Exa-cel) works by inactivating the BCL11A erythroid enhancer, thereby reactivating fetal hemoglobin (HbF) and providing a mutation-independent therapeutic effect. Regulatory agencies have rapidly recognized its impact: the MHRA in the UK approved Exa-cel in November 2023 for both TDT and SCD, while the FDA granted approval in December 2023 (SCD) and January 2024 (TDT). EMA approval is pending, with PRIME designation already granted. Safety data so far suggest that adverse events are primarily busulfan-related, with no evidence of genotoxicity or malignant clonal expansion. Additional curative strategies are under early investigation. Other gene editing platforms, such as TALENs and zinc-finger nucleases, may allow more controlled cleavage activity, though their clinical application remains experimental. Pharmacologic HbF induction is another promising avenue. Hydroxyurea has limited efficacy in TDT but modest benefit in HbE/β-thalassemia. Novel small molecules such as mitapivat, a pyruvate kinase activator, have shown hemoglobin improvement in non-transfusion-dependent patients, and Phase III trials are ongoing. LSD1 inhibitors and pomalidomide derivatives are in preclinical or early clinical development as pharmacologic HbF inducers. From a clinical perspective, HSCT remains the gold standard in eligible patients with a matched donor, while refined haploidentical protocols are expanding donor availability. Gene therapy offers a curative option for patients lacking suitable donors, though conditioning-related toxicity, accessibility, and cost limit its use. CRISPR-based genome editing has shown transformative efficacy, but long-term safety monitoring is essential before universal adoption. In conclusion, curative treatment for thalassemia has expanded far beyond traditional transplantation. Lentiviral gene therapy and CRISPR-based editing represent a paradigm shift, offering functional cures in the majority of treated patients.

https://doi.org/10.1016/j.htct.2025.106212

Abstract 036

NON-FACTOR APPROACHES AND NEW HORIZONS

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Hemophilia is an X-linked recessive disorder. It is divided into two different subtypes; hemophilia A (HA) and B (HB), which result from the deficiency or complete absence of clotting factors VIII (FVIII) and IX (FIX) respectively. Current management of HA and HB includes prophylactic factor replacement[1]. Neutralising antibodies, as inhibitors, can develop against the infused factor and that can complicate the management of hemophilia patients. If inhibitors develop, immune tolerance induction can potentially promote tolerance to exogenous FVIII or FIX, and bypassing agents (BPAs) such as recombinant factor VIIa (rFVIIa) and activated prothrombin complex concentrates (aPCC) can be used to circumvent factor use[2]. Inhibitor development impacts negatively upon quality of life and treatment compliance, highlighting the need for improved therapies. Several novel pharmacological therapies developed for hemophilia aim to rebalance the clotting cascade. These therapies utilise a range of different mechanisms, namely: the extension of the circulating half-life of standard recombinant factors; the mimicking of factor VIII cofactor activity; rebalancing of coagulation through targeting of natural anticoagulants such as antithrombin and tissue factor pathway inhibitor; and inducing the production of endogenous factors with gene therapy. **Discussion:** Extended half−life products involves fusing FVIII or FIX to a protein with a long half-life[3]. Albumin and the constant region (Fc) of IgG have long plasma half-lives as they bind to the neonatal Fc receptor, which is critical for the endogenous recycling of both IgG and albumin. Another method is PEGylation, where one or more PEG chains are covalently linked to rFVIII or rFIX. PEG chains interfere with the recombinant factors binding to their clearance receptors, thereby prolonging circulating half-life. Emicizumab, a recombinant humanised bispecific IgG antibody, mimics the cofactor function of the missing FVIII in HA. It simultaneously binds activated FIX (FIXa) and factor X (FX), bringing them into spatial proximity to promote FIXa-catalysed FX activation, thereby restoring haemostasis[4]. Fitusiran, a novel therapy applicable to both HA and HB, consists of the amino acid, N-Acetyl- galactosamine, the ligand of the hepatic asialo-glycoprotein receptors, conjugated to a synthetic siRNA. It targets and degrades a region of the SERPINC1 gene mRNA, preventing antithrombin production and enhancing thrombin generation. Antithrombin is a potent anticoagulant which inactivates FIXa, activated factor X (FXa) and activated factor II (FIIa/thrombin). Therefore, fitusiran can correct the coagulation imbalance and prevent the bleeding phenotype[5]. Concizumab is an IgG4 monoclonal antibody targeting tissue factor pathway inhibitor (TFPI). It presents an alternative therapy for HA and HB patients, both with and without inhibitors. TFPI is a coagulation inhibitor. It limits coagulation during the initiation of the coagulation cascade through inhibition of the tissue factor-activated factor VII (TF-FVIIa) complex and through FXa inhibition[6]. Gene therapy presents a novel and effective treatment modality for hemophilia, potentially bypassing complications of other therapies. Gene therapy regimens consist of single infusions of a viral vector, which result in transduction of a gene coding for the deficient factor into patient hepatocytes. Current gene therapy regimens for hemophilia predominantly utilise adeno-associated virus (AAV) vectors to deliver the required gene[7]. **Conclusion:** Current factor replacement poses numerous issues, resulting in poor adherence and reduced QoL. Inhibitor development presents a key limitation to factor replacement. EHL products, emicizumab, fitusiran, and concizumab (summarised in appear effective in patients with and without inhibitors, and their longer half-lives enable less frequent injections.

Keywords: Hemophilia A, Hemophilia B, Extended half-life, Emicizumab, Fitusiran, Concizumab, Gene therapy.

https://doi.org/10.1016/j.htct.2025.106213

Abstract 037

IMMUNE THROMBOCYTOPENİA: PATHOPHYSIOLOGY AND MOLECULAR BIOLOGY

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Immune thrombocytopenia (ITP) is an acquired autoimmune disorder characterized by isolated thrombocytopenia. While traditionally explained by antibody-mediated platelet destruction, recent studies reveal a broader syndrome of immune dysregulation involving both platelet destruction and impaired thrombopoiesis. The best-established mechanism involves autoantibodies, primarily IgG1 and IgG3, against platelet glycoproteins GPIIb/IIIa and GPIb/IX. Antibody-coated platelets are phagocytosed by macrophages via Fcγ receptors in the spleen and liver. Anti-GPIb antibodies cause platelet desialylation and clearance by the hepatic Ashwell−Morell receptor. Autoantibodies also trigger complement activation, enhancing destruction through C3b deposition. Beyond humoral immunity, T-cell dysregulation is central. Th1 polarization, characterized by elevated IFN-γ, TNF-α, and IL-2, stimulates macrophage activation and autoreactive B-cell differentiation. In contrast, Th2 cytokines (IL-4, IL-10) are reduced, impairing tolerance. Increased Th17 cells and IL-17 further amplify inflammation and suppress regulatory T-cell (Treg) activity. Indeed, $CD4^+CD25^+FoxP3^+$ Tregs are both reduced in number and function, with diminished production of IL-10 and TGF-β. This promotes unchecked autoreactive B- and T-cell activity. $CD8^+$ cytotoxic T cells have emerged as key players. These cells directly induce apoptosis of platelets and bone marrow megakaryocytes through perforin−granzyme and Fas/FasL pathways, representing antibody-independent platelet destruction. Their expansion is particularly evident in refractory or chronic ITP. B-cell activation is driven by cytokines from Th1 and follicular helper T cells. The B-cell survival factors BAFF (B-cell activating factor) and APRIL (A proliferation-inducing ligand) are elevated in

ITP, allowing autoreactive B cells and long-lived plasma cells to persist. This explains resistance to rituximab, which depletes $CD20^+$ B cells but spares plasma cells. The BAFF/APRIL axis is therefore a promising therapeutic target. In addition to peripheral destruction, impaired thrombopoiesis is critical. Autoantibodies against GPIIb/IIIa and GPIb/IX disrupt megakaryocyte maturation and proplatelet formation. $CD8^+$ T cells induce megakaryocyte apoptosis, further reducing platelet production. Bone marrow stromal dysfunction, including reduced secretion of TGF-β, SCF, and CXCL12, exacerbates these defects. A hallmark of ITP is the paradoxically low thrombopoietin (TPO) level despite severe thrombocytopenia. Since TPO synthesis is regulated by megakaryocyte mass rather than platelet count, reduced megakaryocyte numbers and dysfunction result in insufficient TPO and inadequate platelet production. The cytokine milieu in ITP reflects a proinflammatory imbalance. Increased IFN-γ, TNF-α, and IL-17 reinforce autoimmunity, while decreased IL-10 reflects Treg dysfunction. These changes disrupt tolerance and promote disease chronicity. In conclusion, ITP is not merely an antibody-driven disorder but a complex immune dysregulation syndrome. Both humoral and cellular mechanisms contribute to platelet destruction, while megakaryocyte impairment and insufficient TPO hinder platelet production. Elevated BAFF/APRIL, Th1/Th17 polarization, Treg deficiency, and cytotoxic T-cell activity represent crucial pathogenic pathways. Advances in molecular biology are redefining ITP pathogenesis and identifying novel therapeutic targets that extend beyond conventional immunosuppression.

https://doi.org/10.1016/j.htct.2025.106214

Abstract 038

HIGH-RISK MDS TREATMENT AND INNOVATIONS

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Myelodysplastic syndrome (MDS) is a clonal neoplastic myeloid stem cell neoplasm characterized by ineffective hematopoiesis in the bone marrow and cytopenias in the peripheral blood. Prognostic scoring systems classify patients as low-risk or high-risk MDS. Various prognostic scoring systems have been developed to predict disease course and survival using markers such as cytopenias, bone marrow blast ratio, cytogenetics, age, and performance status. The most commonly used scoring systems are the IPSS and R-IPSS. In its 2022 classification, the WHO used the term myelodysplastic neoplasms instead of myelodysplastic syndromes. These clonal hematopoietic neoplasms were defined by cytopenias and morphological dysplasia, with a dysplasia threshold of 10% for all series. MDS subtypes were grouped into those characterized by genetic abnormalities and those defined by morphology. Although patients may be classified as low risk based on their current MDS risk scores, the disease is a blood cancer with a generally poor prognosis. Patients with high and very high IPSS-R risk can expect a median survival of 1.6 and 0.8 years, respectively, while those with intermediate, low, and very low IPSS-R risk have a median survival of 3, 5.3, and 8.8 years, respectively. The treatment approach for high-risk MDS is aimed at delaying leukemic transformation and prolonging survival. Currently, the only curative treatment for high-risk MDS patients is allogeneic stem cell transplantation (HSCT). Its application is limited by the advanced age and lack of vigor of many MDS patients. All "high-risk" MDS patients with good performance status and without serious comorbidities should be considered for curative allogeneic HSCT. Transplant-related factors have also been shown to play a role in determining post-transplant prognosis. Treatment options for patients ineligible for transplantation are limited, and HMA remains the standard of care. New agents are under development for high-risk MDS patients. In recent years, several new drugs have been tested in combination with 5-azacitidine to further improve patient outcomes, but these have been unsuccessful. A randomized phase II SWOG trial compared standard azacitidine with azacitidine combined with lenalidomide or vorinostat in 227 patients with HR-MDS, reporting an overall response rate of 38% in the azacitidine group, while no improvement in response or survival was seen in the combination group. The recent approval of venetoclax, a BCL-2 inhibitor, for use with 5-azacitidine in AML has prompted investigation of this combination in MDS. In particular, azacitidine + venetoclax, azacitidine + sabatolimab, and azacitidine + magrolimab have shown encouraging results in large, single-arm studies and have also improved in placebo-controlled, double-blind studies with OS as the primary endpoint. IDH1 or IDH2 mutations occur in 5–15% of MDS patients, and enasidenib and ivosidenib have been shown to produce responses in MDS patients with IDH2 mutations. It may be mentioned that the new ICC, which classifies previous WHO 2016 MDS with ≥10% blasts as MDS/AML, would potentially allow the use of AML-approved drugs also in higher-risk MDS

https://doi.org/10.1016/j.htct.2025.106215

Abstract 039

CURATIVE TREATMENT OPTIONS IN SICKLE CELL DISEASE

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Introduction: Sickle cell disease is the most commonly inherited hemoglobinopathy (1).Disease modifying drug therapies such as hydroxyurea,L-glutamine,voxelotor and crizanlizumab reduce pain crises and severe complications(2).Hematopoietic stem cell transplantation (HSCT) is the only curative treatment option. In 1984, the first report of HSCT in a patient with SCD who was transplanted for AML demonstrated the efficacy of HSCT as a curative treatment option for SCD patients with severe disease.In 1996,Walters and colleagues first reported the curative benefits of treatment in a 22-year-old patient with severe sickle cell disease who had an HLA-identical sibling donor(3). INDICATIONS FOR HEMATOPOIETIC STEM CELL TRANSPLANTATION Indications for HSCT are summarized in the Table 1. According to the expert panel,(1)

any young patient with symptomatic SCD who has an HLA-identical sibling donor should be transplanted as early as possible, preferably at preschool age; (2)bone marrow and umbilical cord blood from HLA-identical sibling donors are the recommended stem cell sources;(3)for patients who need to use an alternate donor source,more stringent indications are still recommended, and these patients should only have HSCT under a clinical trial and at a center where the staff are experienced in the procedure(3). DONOR SELECTION AND STEM CELL SOURCES Current recommendations by the National Marrow Donor Program recommend high-level matching at the HLA-A,HLA-B,HLA-C and HLA-DRB1 loci for unrelated donors.20 Matching in all the loci is referred to as an 8/8 match (3).Unfortunately, <%20 of patients have HLA-matched donors.In the absence of a matched sibling donor, HLA-matched unrelated donors,HLA-identical sibling cord blood donors and haploidentical donors are alternatives.Two trials, Sickle Cell Transplant To Prevent Disease Exacerbation (STRIDE) and Sickle Cell Unrelated Transplant trial (SCURT), are evaluating the use of matched unrelated donors in different age groups and with different conditioning regimens.The STRIDE trial started in 2012 for reduced intensity myeloablative transplantation in patients with SCD aged 15-40 years and reported excellent outcomes (OS and EFS of %95) at 12-month follow-up.32 The SCURT trial opened in 2008 and demonstrated no difference in graft rejection rates with matched unrelated donors compared to HLA-identical sibling donors; however, significant morbidity from chronic GVHD (%62) was reported. CONDITIONING REGIMENS Conditioning regimens are categorized as being myeloablative,reduced intensity,or nonmyeloablative. **Myeloablative Conditioning Regimen** The most commonly used myeloablative conditioning regimen for SCD consists of busulfan 14-16 mg/kg and cyclophosphamide 200 mg/kg ± ATG.Cryopreservation of sperm and ovarian tissue is recommended in these types of HSCT(1). **Reduced Intensity and Nonmyeloablative Conditioning Regimens** Reports of SCD symptoms resolving even in patients with mixed chimerism suggest that complete donor chimerism is not necessary and have led to interest in using reduced intensity and nonmyeloablative conditioning regimens for this population(3).

https://doi.org/10.1016/j.htct.2025.106216

Abstract 040

DİAGNOSİS AND TREATMENT OF PAROXYSMAL NOCTURNAL HEMOGLOBİNURİA

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Background: Paroxysmal nocturnal hemoglobinuria (PNH) is a rare, life-threatening clonal hematopoietic stem cell disorder characterized by hemolytic anemia, bone marrow failure, and thrombosis. The absence of glycosylphosphatidylinositol (GPI)-anchored complement regulatory proteins, such as CD55 and CD59, leads to uncontrolled complement activation, chronic intravascular hemolysis, and severe complications. Thrombosis remains the leading cause of mortality, accounting for 40–67% of deaths in PNH patients. **Diagnosis:** High-sensitivity flow cytometry is the gold standard for detecting GPI-deficient cell populations and remains essential for both diagnosis and follow-up. Laboratory evaluation includes complete blood count, hemolysis parameters (LDH, bilirubin, haptoglobin, reticulocytes), and bone marrow examination. Clinical indications for testing are hemolysis, cytopenias, unexplained anemia, aplastic anemia, and thrombosis in atypical sites such as hepatic or cerebral veins. International guidelines (IPIG, ICCS, BCSH) recommend screening all patients with aplastic anemia for PNH clones at diagnosis. **Treatment and Follow-up:** Regular monitoring of hemolysis-related parameters is critical to identify high disease activity, defined as LDH $\geq 1.5 \times$ ULN plus at least one symptom (fatigue, dyspnea, abdominal pain, hemoglobinuria, anemia, thrombosis). Eculizumab, a C5 inhibitor, was the first targeted therapy to significantly reduce intravascular hemolysis and thrombotic risk. Vaccination against Neisseria meningitidis is mandatory before treatment initiation. Ravulizumab, a long-acting C5 inhibitor, offers extended dosing intervals with comparable efficacy. **Novel Therapies:** Recent therapeutic advances are transforming PNH management. Crovalimab, a next-generation C5 inhibitor, allows subcutaneous administration with longer dosing intervals. Biosimilar eculizumab (Bkemv) improves treatment accessibility. Proximal complement inhibitors, including iptacopan (oral Factor B inhibitor), danicopan (Factor D inhibitor), and pegcetacoplan (C3 inhibitor), target both intravascular and extravascular hemolysis, improving hemoglobin stabilization, transfusion independence, and quality of life. These agents are increasingly incorporated into personalized treatment strategies. **Bone Marrow Transplantation:** Allogeneic hematopoietic stem cell transplantation (HSCT) remains the only curative option but is associated with high treatment-related mortality. It should be reserved for patients with severe bone marrow failure or refractory disease when risks outweigh potential benefits. **Conclusion:** The therapeutic landscape of PNH is undergoing a paradigm shift, with novel long-acting and oral complement inhibitors improving disease control and patient convenience. Early diagnosis through flow cytometry and individualized treatment selection remain essential for optimal outcomes. Although HSCT offers potential cure, complement inhibitors currently represent the cornerstone of PNH management.

https://doi.org/10.1016/j.htct.2025.106217

Abstract 041

ALL IN ADOLESCENT AND YOUNG ADULTS

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Recent advances in the treatment of adolescents and young adults (AYA) with acute lymphoblastic leukemia (ALL) highlight the critical role of pediatric-inspired regimens, molecular stratification, and novel immunotherapies. Historically, outcomes for AYA lagged behind children due to greater

treatment resistance and toxicity. However, intensification strategies adapted from pediatric protocols have significantly improved remission and survival rates. Despite this progress, survival in AYA remains inferior to pediatric patients, underscoring the need for more refined, biology-driven approaches (Siegel et al., 2018). One of the most important biological insights concerns the Philadelphia-like (Ph-like) ALL subtype, which is particularly prevalent in AYA (25–30%). Characterized by kinase-activating lesions, this subgroup exhibits high resistance to chemotherapy but offers opportunities for targeted therapy using tyrosine kinase inhibitors (TKIs) such as ruxolitinib or ABL-class inhibitors. Other genetic alterations, including MEF2D, ZNF384, and DUX4 fusions, also contribute to disease heterogeneity and prognosis. Identifying these lesions rapidly remains a major challenge, and the integration of genomic profiling with predictive algorithms and ex vivo drug sensitivity testing is expected to optimize individualized care (Pui et al., 2019). Minimal residual disease (MRD) monitoring has become a cornerstone of risk stratification in AYA ALL. Early MRD levels after induction and consolidation strongly predict relapse risk and guide decisions regarding allogeneic hematopoietic stem cell transplantation (allo-HSCT). Importantly, MRD thresholds differ between pediatric and adult-inspired protocols, highlighting the need for age-specific approaches. Furthermore, MRD is increasingly employed as a primary endpoint in clinical trials and as a trigger for introducing immunotherapies (Stock et al., 2019). Immunotherapeutic agents are transforming frontline therapy in AYA ALL. Inotuzumab ozogamicin (anti-CD22) and blinatumomab (CD3–CD19 bispecific antibody) have demonstrated superior response rates and MRD clearance compared with standard chemotherapy in relapsed/refractory settings. Both are now being evaluated earlier in therapy, particularly as consolidation strategies. Similarly, CD19-directed chimeric antigen receptor (CAR) T-cell therapy, notably tisagenlecleucel, has shown durable remissions in pediatric and AYA patients, although relapse due to antigen loss remains a challenge. Efforts are underway to improve CAR T-cell persistence and safety in this age group (Pui et al., 2019). Beyond targeted and immune-based therapies, novel small molecules such as BCL2 inhibitors (venetoclax, navitoclax) and menin inhibitors show promise in genetically defined subgroups. These agents may further reduce chemotherapy intensity while improving efficacy. Equally crucial is comprehensive supportive care for AYA patients. Fertility preservation, psychosocial support, and survivorship programs are essential to address long-term treatment burdens, particularly for those undergoing allo-HSCT. Late complications such as infertility, osteonecrosis, and prolonged immune dysfunction remain pressing issues that require multidisciplinary management (Siegel et al., 2018). In conclusion, the therapeutic landscape of AYA ALL is shifting from generalized intensification to precision medicine. Advances in understanding disease biology, the incorporation of MRD into decision-making, and the integration of immunotherapy and small molecules are reshaping standards of care. Future progress will depend on broad clinical trial participation and multidisciplinary support to optimize both survival and quality of life for AYA patients with ALL.

https://doi.org/10.1016/j.htct.2025.106218

Abstract 042

WHY I CHOSE HEMATOLOGY ?

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After graduating from Hacettepe University Faculty of Medicine in 1970, with the support of my professors I began corresponding with universities abroad to pursue residency training. During this period I met Prof. Faruk Özer, the head of the Hacettepe Faculty of Medicine Hematology Department, who made me love hematology and sparked my interest in the field., Türkiye On July 1, 1971, I started my straight medical internship at Newark Medical School Hospital/Jersey City Medical Center. At the beginning of 1972, I transferred to Thomas Jefferson University in Philadelphia (Jefferson Medical College), to which I had applied, and in 1974 I completed my internal medicine residency. While training in internal medicine, I met Prof. Allan J. Erslev, the head of the Hematology Department and director of the Cardeza Foundation for Hematologic Research, and I began attending the early-morning slide discussion sessions he organized for residents. He would put the peripheral smear and bone marrow slides of inpatients onto the microscope, have us read them, and ask us to interpret the findings. We received an excellent education in morphology. These morning sessions created a passion for hematology in me, because we could make diagnoses by directly examining morphology alongside the clinical and laboratory findings. No other subspecialty offered such a superb opportunity. This excited and motivated me., Türkiye With that excitement, I began my hematology fellowship in July 1974. Our department chair, Prof. Allan J. Erslev, had identified the hormone erythropoietin in 1953 while working at Harvard Medical School. In my second year as a clinical fellow, he suggested that I conduct research on erythropoietin. Thus, starting in 1976, I focused my research on extrarenal sources of erythropoietin and on immunology. One of Prof. Erslev's most important contributions to modern hematology is that the erythropoietin hormone he described was later produced recombinantly and is now widely used in clinical practice for many anemias, especially in chronic renal failure. At that time Prof. Allan J. Erslev was also preparing a new hematology textbook, and in 1972 he began serving as a co-editor—together with Williams, Rundles, and Beutler—of the book **HEMATOLOGY**, which went on to become the much-read **"Williams Hematology"**, now in its 10th edition. Prof. Erslev entrusted me with many tasks in the preparation of this book. I would go to the famous Saunders Publishing house next to Thomas Jefferson University and, working together with the responsible editors, proofread and revise the chapters I had corrected. This greatly contributed to my affection for hematology and to my training. Thus, even before the book's first edition in 1974, I had the opportunity to read the entirety of a very important text in hematology., Türkiye At the Hematology Department of Thomas Jefferson University, I had the opportunity to do both clinical and research fellowships until 1980. In my research, I examined the antigenic and immunologic characteristics of extrarenal erythropoietin. During this period, I received comprehensive

training in hematopoiesis and bone marrow physiology as well as cellular immunology. Encouraged by Prof. Erslev, I even completed a master's program in protein science at Temple University in my second fellowship year. Later, to better understand stem-cell biology, he arranged for me to work for a time at the Toronto Cancer Center, where Prof. Ernest McCulloch and Prof. James Till—who, in their 1961 publications, identified hematopoietic stem cells in mice—were based. All these experiences greatly helped me learn the fundamental principles of hematology in depth., Türkiye Together with my wife, Prof. Tülay Kansu, we completed our postgraduate training in Philadelphia between 1972 and 1980. During my years in Philadelphia, I had the opportunity to meet and work with many distinguished hematologists who made very significant contributions to the field. Prof. Peter C. Nowell of the University of Pennsylvania (who identified the Philadelphia chromosome), Prof. Sol Sherry of Temple University in the field of coagulation, Prof. Sandy Shapiro in antiphospholipid syndrome and Prof. James Holland the founder of CALGB, among many other esteemed hematologists. Through these collaborations, I gained highly valuable academic knowledge and experience from pioneers of the field., Türkiye Over the last 50 years, hematology has seen major scientific advances that have improved patients' quality of life and expanded treatment options. Among these are the development of cell-culture and genetic technologies; stem-cell transplantation; cancer immunotherapy and targeted therapies; checkpoint inhibitors; gene therapy; biotechnology; innovations in the treatment of sickle-cell disease and thalassemia and advances in imaging and diagnostic methods. In conclusion, I believe that the hematology subspecialty—which I chose with determination and affection in the final years of my internal medicine residency—has made very important contributions to my academic life. I sincerely recommend that our young colleagues choose hematology in their subspecialty training and academic careers.

https://doi.org/10.1016/j.htct.2025.106219

Abstract 043

DONOR SELECTION IN ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Allogeneic hematopoietic stem cell transplantation (HSCT) is a curative therapeutic option for various malignant and non-malignant hematological disorders. Donor selection remains the most critical factor affecting transplantation outcomes, with human leukocyte antigen (HLA) compatibility being the cornerstone of this process. The traditional donor hierarchy begins with HLA-matched sibling donors (MSD), who provide the best outcomes with the lowest risk of graft-versus-host disease (GVHD) and transplant-related mortality (TRM). For patients without an MSD, matched unrelated donors (MUD) with 10/10 HLA compatibility are the next preferred option. Recent advances in high-resolution HLA typing have improved outcomes with unrelated donors, approaching results comparable to those of MSD. When multiple compatible donors are available, non-HLA factors guide selection. Donor age significantly impacts outcomes, with younger donors (18-35 years) yielding better results. Cytomegalovirus serostatus concordance between donor and recipient is crucial to prevent post-transplant complications. Male donors are generally preferred over female donors, particularly for male recipients, due to the increased risk of chronic GVHD associated with female-to-male transplants. ABO blood group compatibility, while not affecting survival directly, influences the risk of immediate post-transplant complications. Alternative donor sources have expanded transplantation possibilities for patients lacking conventional donors. Haploidentical family donors have seen remarkable improvements in outcomes with the introduction of post-transplant cyclophosphamide (PTCy), challenging the traditional donor hierarchy. Umbilical cord blood units provide another alternative, particularly beneficial in pediatric patients, despite limitations in cell dose. Donor selection strategies differ between pediatric and adult populations. In pediatric patients, the focus remains on minimizing long-term complications, particularly chronic GVHD, which can severely impact growth and development. In adults, stronger graft-versus-leukemia effects may be prioritized in high-risk malignancies, making alternative donors with potential for enhanced alloreactivity more attractive. Disease-specific considerations also influence donor choice. Benign hematological disorders require complete HLA matching to minimize complications, while in malignant diseases, partial HLA mismatches might be accepted to enhance graft-versus-tumor effects. Hodgkin lymphoma patients demonstrate superior outcomes with haploidentical donors compared to MUDs, challenging conventional hierarchies. Donor exclusion criteria encompass medical conditions that may increase donation-related risks or compromise graft quality. These include cardiovascular, pulmonary, hematological, and immunological disorders, active infections, and malignancy history. As transplantation practices evolve, personalized donor selection algorithms incorporating disease characteristics, patient factors, donor availability, and center experience are replacing rigid hierarchies, ultimately improving outcomes for patients requiring allogeneic HSCT.

https://doi.org/10.1016/j.htct.2025.106220

Abstract 044

GENE THERAPY IN HEMOPHILIA

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Symptomatic or prophylactic treatment of hemophilia began in the 1960s with fresh frozen plasma therapy. Over the years, treatment evolved through plasma-derived products, recombinant therapies, extended half-life products, and

subcutaneous treatments. However, achieving zero bleeding has remained elusive. In 2022, gene therapies received regulatory approval, offering hope for a definitive cure for hemophilia. Ege University joined gene therapy clinical trials in 2021. Our patient, MA, born in 1998 and diagnosed in 2000, had a childhood marked by frequent bleeding and target joint involvement despite starting prophylaxis. During gene therapy screening, he was found to be AAV5 seronegative and was invited to our clinic. Following gene therapy, it was as if he was reborn. His initial Factor VIII level of 0.1 IU/dL rose to 128 IU/dL by week 208. His HJHS score dropped from 15 to 8, and he experienced no bleeding episodes., Türkiye Hemophilia is an ideal candidate for gene therapy because it is a single-gene disorder with a simple expression loss, even low levels of expression are clinically effective, no specific tissue or cell targeting is required and the factor is secreted directly into plasma and can be easily measured. Initial preclinical studies (early 2000s) using both viral and non-viral methods showed limited efficacy but no significant side effects. Adequate FVIII expression was not achieved. AAV-based somatic gene therapy for hemophilia was approved and commercialized in 2022–2023. AAV is ideal for gene transfer due to its non-pathogenic nature, defective self-replication, long-term transgene expression, availability of different serotypes for different tissues. The goal of gene therapy is to insert normal FVIII/FIX genes into the liver, enabling liver cells to synthesize these clotting factors. In the HOPE-B study, mean FIX activity was 39.0 IU/dL at 6 months (±18.7; range 8.2–97.1), 36.7 IU/dL at 24 months (±19.0; range 4.7–99.2). In the GENEr2 study,75.4% of patients had FVIII activity >5 IU/dL at year 2. However, factor expression varied significantly among patients. Challenges in Hemophilia Gene Therapy are high sero-prevalence of AAV antibodies, potential reduction in factor synthesis due to antibody development and risk of liver damage. The limitations of gene therapy are variable treatment response between patients, durability and applicability of the therapy, many patients already have AAV antibodies, higher vector genome doses may be required, increasing toxicity risk, immune reactions against the capsid may lead to loss of transfected hepatocytes, uncertainty in children, inhibitor-positive patients, and those with liver disease, redosing is not possible due to antibody development and high cost. To overcome these limitations, new gene technologies are being explored.

https://doi.org/10.1016/j.htct.2025.106221