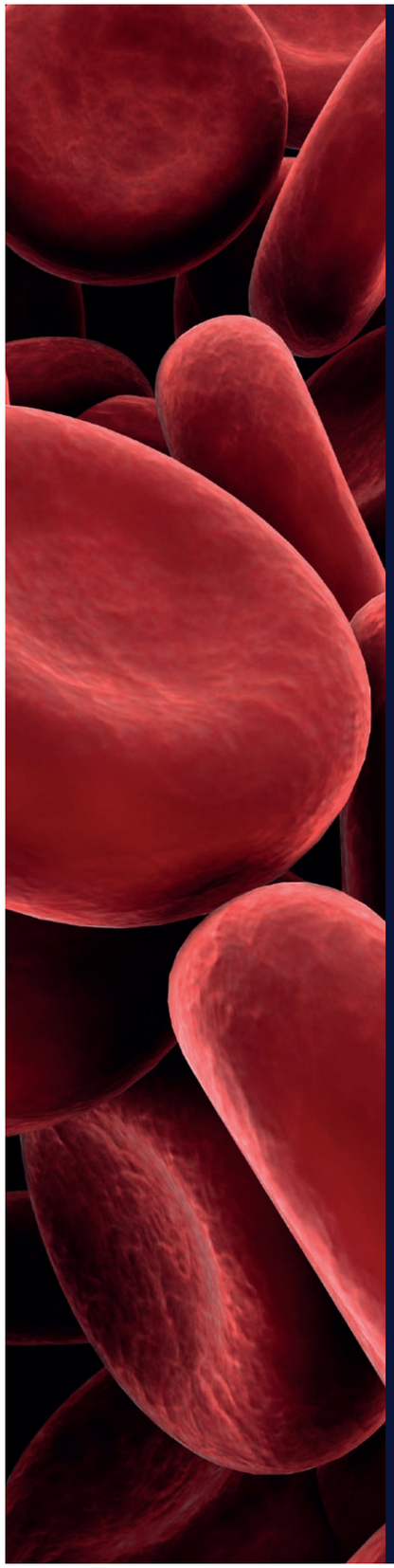

HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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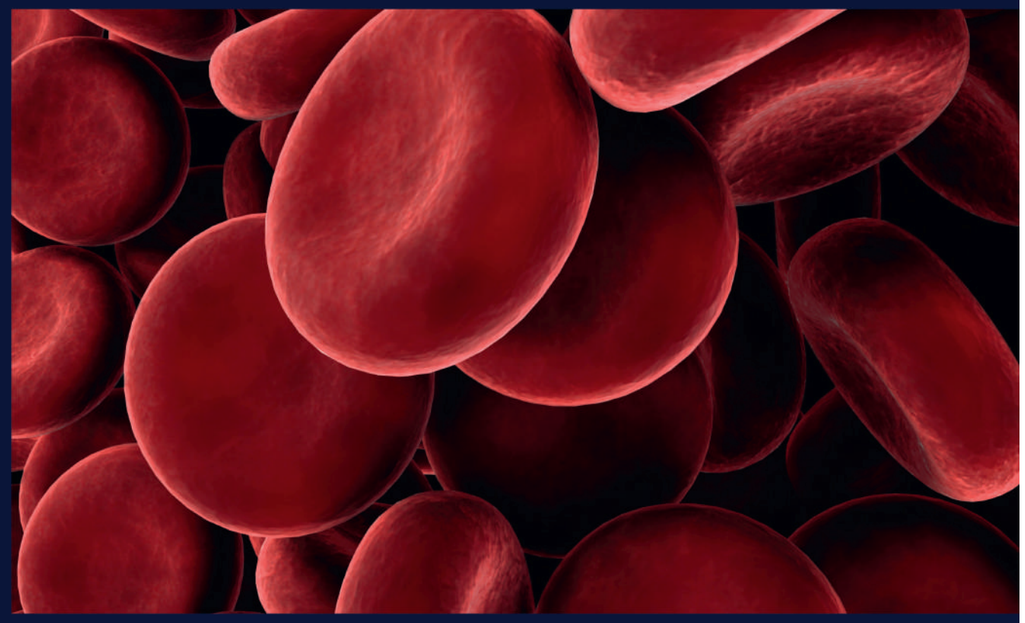

HEMATOLOGY, TRANSFUSION AND CELL THERAPY

VOLUME 45,
Supplement 3,
October, 2023

XIV Eurasian Hematology Oncology Congress

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Associação Brasileira de Hematologia, Hemoterapia e Terapia Celular

HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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XIV Eurasian Hematology Oncology Congress

EHOC 2023

Abstract Book

11-14 October 2023

EHOG
Eurasian Hematology Oncology Group

Welcome Address

Dear Colleagues,

We are happy to meet you at XIV Eurasian Hematology-Oncology Congress will be held as a face-to-face congress between 11-14 October 2023 at Hilton İstanbul Bakırköy.

We believe deep in our hearts that with its special concept, EHOC 2023 will fill in a significant gap in our region.

The attendees will be able to enjoy scientific programs in both Adult Hematology & Pediatric Hematology / Oncology as well as Nursing.

EHOG is collaborating with several international societies as usual including.

- Brazilian Association of Hematology, Hemotherapy, and Cell Therapy (ABHH)
- European Society for Blood and Marrow Transplantation (EBMT)
- European Leukemia Network (ELN)
- Israel Society of Hematology and Transfusion Medicine
- Russian Oncohematology Society (ROHS)
- Society of Hematologic Oncology (SOHO)
- Society of Hematologic Oncology Italy (SOHO Italy)
- Society of Medical Oncology Pakistan (SMOP)

Additionally Pediatric Hematology and Pediatric Oncology programs will be co-organized with the Turkish Pediatric Hematology Association and Turkish Pediatric Oncology Group Association.

There will be online oral and poster presentation sessions. Pharmaceutical companies will get an opportunity to interact with the attendees in the exhibition area.

We hope that you will benefit in the best way possible of EHOC 2023.

Birol Güvenç

President of Hematology Specialist Association

Giuseppe Saglio

President of EHOC 2023
President of EHOG

Hematology Specialist Association

President

Birol Güvenç

Vice President

Serdar Bedii Omay

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President of EHOG

Birol Güvenç

President of Hematology Specialist Association

Serdar Bedii Omay

Vice President of Hematology Specialist Association

Hüseyin Saffet Beköz

Congress Scientific Secreteriat

Serpil Vieira

Nursing Program Chair

Bülent Antmen

Pediatric Program Coordinatör

Adalet Meral Güneş

President of Turkish Pediatric Hematology Association

Nurdan Taçyıldız

President of Turkish Pediatric Oncology Group Association

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Ali Ünal - Member of Hematology Specialist Association Board
Oral Nevruz - Member of Hematology Specialist Association Board
Fatih Erbey - Member of Hematology Specialist Association Board
Şule Menziletoğlu Yıldız - Director of the School of Health Services, Çukurova University
Medine Yılmaz, Faculty of Health Sciences Nursing Department, Izmir Katip Celebi University

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Hale Ören
Halil Çetingök
Hanan Hamed
Handan Dinçaslan
Hasan Fatih Çakmaklı
Hüseyin Saffet Beköz
Irina Panovska
Işık Odaman Al
İnci İlhan

İpek Yönal Hindilerden
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John Lister
Koray Yalçın
Lv Lulu
Lyudmila Grıvtsova
Maria Capellini
Medine Yılmaz
Mehmet Hilmi Doğu
Mehmet Kantar
Mehmet Turgut
Mehmet Yılmaz
Melek Yanaşık
Melissa Hudson
Meliha Güneş
Meryem Albayrak
Moshe Mittelman
Murat Özbalak
Mustafa Çetiner
Mustafa Yenerel
Naeem Chaudhri
Namık Yaşar Özbek
Naval Daver
Nazan Sarper
Neşe Yaralı
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Nilgün Sayınalp
Nurdan Taçyıldız
Nurşah Eker
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Osman İlhan
Othman Al Sawaf
Ömer Devecioğlu
Özlem Tüfekçi
Pia Raanani
Pınar Gökçe Reis
Rajko Kusec
Robert Gale
Roi Gat
Rudiger Hehlmann
Sabina Chiaretti
Salam Al-Kindi
Savaş Kansoy
Seçkin Çağırgan
Selami Koçak Toprak
Selin Aytaç Eyüpoğlu
Sema Anak
Serap Aksoylar
Serap Karaman
Serdar Bedii Omay
Serpil Vieira
Sevgi Kalayoğlu Beşışık
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Stefano Luminari
Suar Çakı Kılıç
Süheyla Ocak
Şiran Keske
Talia İleri
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Tayfur Toptaş
Tiziano Barbui
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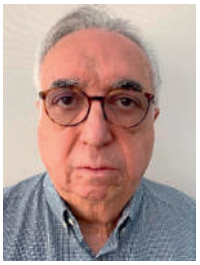
Tomasz Sacha
Tuba Eren
Turan Bayhan
Tülin Tuğlular
Umberto Vitolo
Uwe Platzbecker
Ülkü Kaftancıoğlu
Vahap Okan
Valeh Hüseynov
Volkan Hazar
Yervand Hakobyan
Yeşim Oymak
Zafer Gülbaş
Zeba Aziz
Zeynep Karakaş
Zühre Kaya

Chairs and Speakers Biographies

Amjad Zafar
Jinnah Hospital, Lahore, Pakistan

I am an Assistant Professor Oncology at Jinnah hospital , Lahore, which is a tertiary care set up in a city of around 10 million people and caters to thousand plus patients per year in terms of its Opd and indoor services. I also am visiting consultant oncology in Hameed Latif hospital and Pakistan Kidney and Liver institute, both are tertiary care set ups having multiple specialities and later is a transplant institute as well.

Carmino Antonio De Souza
Hematology, Health Secretary of Campinas City - São Paulo State and Director of Hematology and Hemotherapy Brazilian Association (ABHH), Brazil



Professor Carmino Antonio De Souza graduated in Medicine in 1975 with, Medical Residency in Internal Medicine and Hematology and Hemotherapy from 1976-1979, Ph.D. in Medicine and Medical Clinic in 1987, Free Professor in 1996, and Full Professor since 2001 with the Department of Internal Medicine of the Faculty of Medical Sciences - University of Campinas (UNICAMP). He completed his postdoctoral studies at the Department of Hematology, Hospital San Martino, University of Genoa, Italy, between 1997 and 1998 in bone marrow transplantation and malignant lymphomas. Onco-Hematologist, working on malignant lymphomas, chronic myeloid leukemia, and bone marrow transplantation. It has about 420 complete articles published in scientific journals, mainly in English, more than 1200 abstracts in national and international congresses; 30 chapters of scientific books, three non-technical and non-scientific books, 210 articles in physical and virtual newspapers and 45 approved masters and doctoral theses. Citations in the literature:12200, Index H – 50, and Hi10 - 165 (Google Scholar - 03-08-2023). He is a member and director of the Brazilian Association of Hematology, Hemotherapy, and Cell Therapy (ABHH), the American Society of Hematology (ASH), the Italian-Brazilian Association of Hematology (AIBE), Eurasian Hematology and Oncology Group (EHOG), and of the European Association of Hematology and Hemotherapy (EHA). He was Coordinator of the Hematology and Blood Transfusion Center of Campinas (Hemocentro) for 14 years (1985-1993 and 2016-2012), Secretary of Health of the State of São Paulo between 1993-1994, Secretary of Health of Campinas between 2013-2020 and Executive Secretary of the State Secretariat of Science, Research, and Development in Health of the State of São Paulo in 2022. Councilor of the FAPESP Board of Directors between 2015-2021 and again for a term of 2022-2028; Full Board member and current President of the Board of Trustees of the Butantan Foundation since December 2022 and Alternate Councilor of the Board of Trustees of the Pró-Sangue Foundation, Hemocentro de São Paulo since June 2022.

Claudio Cerchione
IRCCS Istituto Romagnolo per lo Studio dei Tumori "Dino Amadori" - IRST S.r.l., Italy

Dr Claudio Cerchione graduated in medicine with honours from the Medical School at the University Federico II of Naples, Italy (July 2008), with a final thesis in Hematology.
During his Fellowship and PhD studies, Dr. Cerchione studied in detail Hematological malignancies, and his main research topics are Acute Leukemias and Multiple Myeloma. He started his collaboration in Hematology Department, AOU Federico II, Naples, Italy, in 2006, and there he completed with honours his Fellowship in July 2014 and his PhD program in May 2017.
Since 2018, he works in Hematology Unit of Istituto Romagnolo per lo Studio e la Cura dei Tumori “Dino Amadori” (IRST) IRCCS, where he is Head of Myeloma Research Group and Principal Investigator of many clinical trials company sponsored and non-company sponsored.
He has spent international research experiences in Friedrich-Wilhelms Universität, Bonn, Germany, in Universitade de Coimbra, Portugal, collaborating in their clinical and research projects, and in MD Anderson Cancer Center, Houston, USA, where he has been nominated International Ambassdor of SOHO (Society of Hematologic Oncology).
He is member of the editorial boards of many scientific journals, or Reviewer for several highly cited international journals and member of several international societies and President of Society of Hematologic Oncology Italy (SOHO Italy).
In 2018/2019 he was nominated by EHA as one of the winners of Clinical Research Training in Hematology.
He is author/co-author of more than one hundred papers in peer-reviewed international journals.

Deniz Tuğcu
Istanbul University, Istanbul School of Medicine, Departement of Pediatric Hematology-Oncology, Istanbul, Türkiye

EDUCATIONAL BACKGROUND:
Istanbul University, Istanbul School of Medicine,1993
SSK Bakırköy Maternity and Children, Training and Research Hospital, 1998, specialization in pediatrics
Istanbul University, Istanbul School of Medicine, 2008, specialization in Pediatric Hematology-Oncology

THESIS
Thesis in Pediatrics: Respiratory Syncytial Virus Infections in Childhood: Predisposing Factors and Hematological Findings. Supervisor: Clinical Chief Dr. Cengiz Yavuz
Thesis in Pediatric Hematology-Oncology: The Relationship Between Plasminogen Activator Inhibitor-1 (PAI-1), Vitronectin Levels and Risk Factors in Childhood Solid Tumors (Supervisor: Prof. Dr. Omer Devecioglu)

ACADEMIC TASKS
Research assistant in pediatrics: 1993-1998: SSK Bakırköy Maternity and Children, Training and Research Hospital
Pediatrician: 1998-2005: SSK Bakırköy Maternity and Children, Training and Research Hospital
Research assistant in Pediatric Hematology-Oncology: 2005-2008: Istanbul University, Istanbul School of Medicine
Pediatric hemato-oncolog: 2008-2015: Kanuni Sultan Suleyman Training and Research Hospital
Associate Professor: 2015-2021: Istanbul University, Istanbul School of Medicine
Professor: Since 2021

INTERESTED AREAS:
Pediatric Hematology-Oncology
Pediatric Solid Tumors
Hemostasis
Theraphotic Apheresis
Pediatric Bone Marrow Transplantation

ADMINISTRATIVE TASKS:
Istanbul Pediatric Oncology Group, Tumor Meeting Secretariat (2008-2015)
Turkish Pediatric Hematology Association, Histiocytosis Subgroup membership (2010-2012 and 2018-2020)
Turkish Pediatric Hematology Association, Febrile Neutropenia Subgroup membership (2012-2014 and 2016-2018 and 2018-2020)
Turkish Pediatric Hematology Association, Febrile Neutropenia Subgroup chair (2023)
Pediatrics qualification board assessment and evaluation commission member: Since 2020

MEMBERSHIPS TO SCIENTIFIC ORGANIZATIONS:
Turkish Pediatric Oncology Group
Turkish Society of Pediatric Hematology
Hematology Specialty Association
Therapeutic Apheresis Training and Responsible Physician

Drew Provan
Emeritus Reader in Autoimmune Haematology at Barts and The London School of Medicine and Dentistry, London, UK.

Drew Provan is currently Emeritus Reader in Autoimmune Haematology at Barts and The London School of Medicine and Dentistry, London, UK.
Dr. Provan studied molecular genetics at Leicester University before studying medicine. After junior medical posts in the UK, he undertook research at The Dana-Farber Cancer Institute from 1993-4 on an American Traveling fellowship awarded by the Medical Research Council.
His main area of interest is immunohaematology which includes immune thrombocytopenia (ITP), neutropenia and haemolytic anaemia. Dr. Provan established the UK ITP Registry, a clinical and laboratory database of patients with ITP. This facilitates the collection of clinical information related to adults with ITP throughout the UK, in addition to allowing for DNA samples to be obtained for genetic analysis.
Dr. Provan, along with International colleagues, published the Revised International Consensus guidelines for the diagnosis and management of ITP published in Blood Advances in 2019. The consensus document is currently being updated and will be published late 2023.
He has written numerous peer-reviewed papers, book chapters, and has authored several medical books including Molecular Hematology (Wiley), Oxford Handbook of Clinical Haematology and Oxford Handbook of Clinical and Laboratory Investigation, and the ABC of Clinical Haematology (BMJ books).

Gerardo Musuraca
Istituto Scientifico Romagnolo per lo Studio e la Cura dei Tumori (I.R.S.T.) S.r.l.
Via Piero Maroncelli, 40 - 47014 Meldola (FC), Italy
High School Graduation at "Liceo Ivo Olivetti" in 1995
M.D. with full marks, cum laude at University of Bologna in 2001

EXPERIENCES
Attends as a border student the Institute of Hematology "L. & A. Seragnoli" Chief:Prof. M. Baccarani, from 2001 to 2002.
Since 2001 attends as post doctoral fellow in the Institute of Hematology "L. & A. Seragnoli"
Chief:Prof. M. Baccarani.
From June to July 2004 and May 2005: student to Regent school of Oxford (British Council) 2005-Degree with honours at the school of specialization in Hematology at the University of Bologna. in the the Institute of Hematology "L. & A. Seragnoli"

Since January 2006 PhD student in clinical and experimental Hematology at the University of Bologna. in the the Institute of Hematology "L. & A. Seragnoli"
2009 degree with honours PhD in clinical and experimental Hematology at the University of Bologna. in the the Institute of Hematology "L. & A. Seragnoli"
Since 2007 Clinical activity and research at IRCCS Istituto scientifico Romagnolo "Dino Amadori" IRST, Meldola
Abstracts Reviewer and moderator at session 625 lymphoma, preclinical and biologic agents of American Society of Hematology (ASH) meeting December 2011
From January to March 2014 Master in medical direction at Bocconi's University, Milan.
From September 2017, degree of high specialization in Lymphomas at IRCCS Istituto scientifico Romagnolo "Dino Amadori" IRST, Meldola
From November 2019 to now, Chief of the Lymphoma unit and Director of the Hematology Unit at Istituto scientifico Romagnolo "Dino Amadori" IRCCS IRST, Meldola
From February 2022: Contract professor at University of Bologna
From May 2022 to now: Board representative of the specialization school in Hematology, University of Bologna
Member of Italian Lymphoma Foundation (FIL)
AUTHOR of more than 60 PRINTED and indexed PUBLICATIONS.
CURRENTLY REVIEWER FOR THE FOLLOWING JOURNALS:
Cancers,
Current oncology,
Biomedicines
BMC pulmonary medicines
International Journal of Molecular Sciences

GUEST EDITOR AND SPECIAL ISSUE EDITOR FOR:
International Journal of Molecular science
SPECIAL ISSUE: "Immunology in Lymphoma and Lymphoproliferative Diseases"
H-index: 22
ORC ID: 0000-0003-1947-1032
SCOPUS ID: 6602731241
Since 2001 involved in multicenter national and international clinical trials performed in onco-hematology.

Hanan Hamed
Ain Shams University, Cairo, Egypt

Professor of Internal Medicine and Clinical Hematology Faculty of Medicine Ain Shams
University from October 2004 - till now.
Member of Hematology Board at Faculty of Medicine Ain Shams University.
Member of Bone Marrow Transplantation Board at Faculty of Medicine Ain Shams University.
Head of Internal Medicine and Clinical Hematology Unit Ain Shams University Specialized
Hospital ASUSH Cairo – Egypt. Till February 2019.
Member of scientific committee of Internal Medicine and clinical Hematology in Supreme
Council of Universities in Egypt.
Vice president of Egyptian society of Hematology.

Qualifications:
MB Bch, December1983 Faculty of Medicine Ain Shams University
M Sc Internal Medicine, April 1988 Faculty of Medicine Ain Shams University
M D Internal Medicine, April 1994 Faculty of Medicine Ain Shams University
Full training program in "Medical Response to Nuclear Accidents" in collaboration with
Radiation Emergency Assistance Centre/ Training Site REACTS - Oak Ridge Institute of
Science 1994

Member of:
American Society of hematology ASH
European Hematological Association EHA
International Society of Hematology ISH
Society of Hematologic Oncology SOHO
International Union of Angiology IUA
Egypt representative and ambassador Eurasian hematooncology group EHOG.
Pan-Arab hematology association
Founder and Adult hemato-oncology director in Middle East and North Africa Hematology
League MENAHL.
Egyptian Hemato-oncology group EHOG
Egyptian Society of Hematology ESH
Egyptian Group of Hemostasis and Thrombosis
Egyptian Society of Oncology
Egyptian Society of Vascular Diseases and Surgery

Hasan Fatih Çakmaklı
Department of Pediatric Hematology, Ankara University, Ankara, Türkiye

Hasan Fatih Çakmaklı, MD, is an assistant professor in Ankara University Department of Pediatric Hematology. After he graduated from Hacettepe University Faculty of Medicine in 2003, he completed his residency in Hacettepe University Department of Pediatrics in 2009. He worked as an elected pediatric chief resident in 2007-2008. Afterwards, he did pediatric hematology and oncology residency in Ankara University between 2009-2012. After completing obligatory service in Şanlıurfa Children's Hospital (October 2013-February 2014) and in Ankara Children's Health and Diseases, Hematology and Oncology Education and Research Hospital (February 2014-September 2015), he worked as a visiting schoolar at Emory University Pediatric Hematology Department laboratory in a project on

thalassemia mice model and oxidative stress, and did also clinical observership at Emory University Department of Pediatric Hematology (with the support of Turkish National Scientific Council / 2219 Postdoctoral Research Fellowship award) (September 2015-September 2016). Then, he worked as a specialist in pediatric hematology and oncology in Ankara Children's Health and Diseases, Hematology and Oncology Education and Research Hospital until he joined Ankara University Department of Pediatric Hematology and Oncology as a specialist in February 2018. In September 2021 until now, he has been working as an assistant professor in the same department. His main interests are leukemia, thrombosis, and bleeding diathesis in childhood.

Lv Lulu
M.D., CEO of Juventas Cell Therapy Ltd.

Dr. Lv founded Juventas as Chief Executive Officer in 2018. Under her leadership, the company's first CAR-T (chimeric antigen receptor T cells) product, CNCT19 (Inaticabtagene Autoleucel) Injection, is approaching commercialization. Dr. Lv has constructed an innovative pipeline strategy system fueled by CAR platform, iPSCs platform, and gene-editing platform, for pioneering new drugs development. The strong cooperation with national scientific institutes ensures our indication coverage spanning a broad range of therapeutics fields, from hematology, solid tumor, to autoimmune disease. Dr. Lv has dedicated herself to developing innovative and accessible therapies for patients in need.

Dr. Lv Lulu has been focusing on oncology scientific research and innovative drug development for more than 20 years. Before leading Juventas, Dr. Lv held executive and significant positions in Novartis, Genzyme, Roche, AstraZeneca, and Merck. She has garnered a wealth of experience in R&D, regulatory affairs, and commercialization of cellular immunotherapy products. She has played indispensable roles in the R&D, regulatory affairs, market expansion, and commercialization of innovative anti-cancer products such as Gleevec®, Herceptin®, Tagrisso®, and Keytruda®.

Prior to her new drug life-cycle management career in multinational pharmaceutical companies, she mainly undertook the clinical and scientific research on hematopoietic and mesenchymal stem cells. In 2001, Dr. Lv participated in the first umbilical cord blood transplantation in China for the treatment of childhood leukemia. She pioneered and established the domestic technology of isolating mesenchymal stem cells from the umbilical cord in 2004. In the following year, she continued her research on hematopoietic cell transplantation and mesenchymal stem cells at Westchester Medical Center of New York Medical College. Dr. Lv published various papers in domestic and international journals. She received her Ph. D. for clinical medicine (Internal Medicine, Hematology) in 2006.

Melissa Hudson,
Member, St. Jude Faculty
Director, Cancer Survivorship Division
Associate Director, Population Sciences
The Charles E. Williams Endowed Chair of Oncology-Cancer Survivorship

Melissa M. Hudson, MD, is currently a Member and Director of the Cancer Survivorship Division in the Department of Oncology and holds the Charles E. Williams Endowed Chair of Oncology-Cancer Survivorship. She directs the After Completion of Therapy Clinic and serves as the Principal Investigator of the St. Jude Lifetime Cohort Study. Dr. Hudson works collaboratively with multidisciplinary investigators in national and international initiatives evaluating biomedical and psychosocial outcomes among childhood cancer survivors and translating data from health outcomes research into evidence-informed clinical practice guidelines and interventions to improve the quality and duration of survival after childhood cancer.

Moshe Mittelman
Tel Aviv Sourasky Medical Center

Moshe Mittelman MD, completed his term as the Chairman, Department of Medicine, at the Tel Aviv Sourasky (Ichilov) Medical Center, in 2020. He continues as a senior consultant for Hematology. He is also Professor Emeritus, in medicine and hematology, the School of Medicine, Tel Aviv University.

Among other tasks, Prof. Mittelman serves as the Chief Technology Officer, Scientific-Medical Director and a consultant for a biotech fund (TALENT) and investors, and is involved in several biotech start-ups companies. In 2019 he established, and continues to run a hematology-oncology service in the LISOD Oncology Center, in Kiev, Ukraine.

Professor Mittelman graduated from the Faculty of Medicine, Tel Aviv University in 1976, and completed a Residency in Internal Medicine at the Hasharon Hospital, Petah-Tikva, Israel. He later undertook a Combined Clinical and Research Fellowship Programme in Hematology and Oncology at the George Washington University Medical Center, Washington DC, USA, and The National Institutes of Health (NIH), Bethesda, USA, before returning to Israel in 1989. On returning to Israel, he served as Deputy-Director (1989-1994) and then Director (1994-2003), Department of Medicine B, Hasharon Hospital. In 2003 he moved to Ichilov Medical Center, to serve as the Chief of Medicine A and the Chairman of The Department of Medicine (9 wards, 360 beds), till 2020.

Professor Mittelman's research interests include basic and clinical aspects of stem cell disorders such as myelodysplastic

syndromes (MDS) and myeloproliferative neoplasms (MPN), multiple myeloma, basic and clinical effects of erythropoietin, translational research of malignant hematology and applying digitalization into practical medicine. He published more than 200 professional papers summarizing his clinical and research activities in prestigious journals such as Blood; Haematologica; British Journal of Haematology; American Journal of Hematology; Lancet Haematology, Annals of Hematology; Leukemia; Leukemia Research; Annals of Internal Medicine; Journal of Clinical Oncology, and others. He was a member of the editorial board of European Journal of Internal Medicine, and currently serves in the editorial board of the Israel Medical Association Journal (IMAJ), Journal of Clinical Medicine (also co-editor) and Haematologica, as well as a reviewer for the top journals in hematology, oncology and medicine.
Over the years Moshe has served in academic and public duties, including Chairman, the admission committee for medical students, TAU; The National Committee for new technologies in public health ("Vaadat Sal"); BOD, Israel Cancer Association (he is currently the Acting Chairman of the Association, Aguda); Board of Trustees, The Academic College Tel Aviv-Jaffa; Secretary & Chairman, Israel Society of Internal Medicine; President, Israel Society of Hematology; The national committee for clinical trials (Helsinki), Israel Ministry of Health; and Chairman, the Scientific Board, International MDS Foundation.

Murat Ozbalak
Istanbul University Istanbul Medical Faculty

Murat Ozbalak, M.D., was born in 1984 in Istanbul. He was graduated from Istanbul University Cerrahpasa Medicah Faculty English Program in 2009.He completed his residency in Istanbul University Cerrahpasa Medical Faculty in 2015. He performed his hematology fellowship in Istanbul University Istanbul Medical Faculty between 2018 and 2021. He is PhD candidate in the immunology department of Istanbul University Aziz Sancar Experimental Medicine Institute. He has been associate professor of hematology since June 2023, and he works in Başakşehir Çam ve Sakura City Hospital.

Nurşah Eker
Marmara University Faculty of Medicine, İstanbul, Türkiye

She is Assistant Professor in Pediatric Hematology Oncology and Bone Marrow Transplantation at the Marmara University. Asst. Prof. Eker trained in pediatri at the Şişli Etfal Education and Research Hospital and completed a fellowship in pediatric hematology and oncology at the Akdeniz University Faculty of Medicine. Asst. Prof. Eker has been working in Pediatric Hematology Oncology and Bone Marrow Transplantation Unit at the Marmara University Faculty of Medicine since 2018.

Pia Raanani
Tel Aviv University Faculty of Medicine, Israel

Prof. Pia Raanani MD is Head of the Division of Hematology at the Rabin Medical Center. She is Full Professor in Hematology at the Tel-Aviv University.
Prof. Raanani trained in hematology at the Sheba Medical Center and completed a fellowship in CML at the Hammersmith Hospital, Royal Postgraduate Medical School in London. In 2007 she established the Hemato-oncology Hospitalization Unit at the Davidoff Cancer Center. Prof. Raanani was Head of the Department of Hematology of the Faculty of Medicine Tel-Aviv University between 2010–2014 and has been Head of the Research Funds Committee of the Sackler School of Medicine since 2014.
Prof. Raanani is on the Editorial board of several international hematology journals. Since 2015 she has served as Ambassador for Israel of the MD Anderson Society of Hematologic Oncology (SOHO). Since July 2017 she is Editor-in-Chief of the journal *Acta Haematologica*.
Prof. Raanani is a co-author of 265 articles as well as chapters in books. During the last years, she has chaired several international scientific meetings in the field of hemato-oncology.

Salam Alkindi
BA, MB, BCh, BAO, DME, MSc, FRCP Professor, senior consultant Department of haematology Sultan Qaboos university-Muscat Oman

Following my graduation from Trinity college- Dublin Ireland, in 1993, I have completed my general medicine as well as haematology/ oncology training in Dublin, Ireland and Fred Hutch cancer centre in Seattle USA, where I did my training in Bone marrow transplant. In 1999 I have joined Sultan Qaboos University and in 2005 I was appointed as head of department of haematology for 10 years. Previously also I held the position of deputy director of Sultan Qaboos university hospital for clinical affairs (clinical director) for 5 years. Research interests include sickle cell disease, chronic leukaemia and autoimmune disorders with over 120 articles published in international peer reviewed journals including NEJM, haematologica, and blood. I am founder of Oman hereditary blood disorders association, and currently deputy chairman.

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1996-2002- MD, Istanbul University Cerrahpasa Faculty of Medicine, Istanbul - Türkiye

Degrees and Professional Experience
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2016- (January 31-September 31) Pediatric Hematologist-Oncologist, Pediatric Bone Marrow Transplantation Unit, Yeniyuzyil University, Istanbul, Türkiye.
2007- (January 31- April 01) Observer, Pediatric Hematology and Oncology, Texas Children Hospital

Awards and Scholarships
2008- Turkish Pediatric Oncology Group, Research Award
2022- Turkish Archives of Pediatrics Journal, Nil Arisoy Award for Original Article

Courses/Certificates
2021- Certificate of Therapeutic Apheresis, Turkish Ministry of Health
2018- Masterclass of Blood Banking and Transfusion Medicine, Turkish Society of Hematology
2019- SIREDO-1, Course on adolescent and young adult Sarcomas, Paris, France.
2012- ESO- European School of Oncology, Pediatric Oncology Masterclass, Rome, Italy

Memberships
Turkish Society of Hematology
Turkish Pediatric Oncology Group (TPOG)
Turkish Society of Pediatrics (TPK)
European Society for Pediatric Oncology (SIOPE)
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Pediatric Lymphomas
Histiocytoses
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Tuba Eren was graduated from Gazi University, Medical Faculty in 1999, and completed her pediatric residency program at Sami Ulus Training and Research Hospital, in 2005. After three years of practice as a pediatrician, she completed her pediatric oncology residency program at Ankara Oncology Training and Research Hospital in 2012. Dr. Eren works at the Trakya University, Faculty of Medicine, Department of Pediatric Hematology-Oncology since 2012.

Umberto Vitolo
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Umberto Vitolo, MD, is Hematology Consultant at Candiolo Cancer Institute-Fondazione del Piemonte per l'Oncologia-IRCCS, Candiolo (Torino), Italy since January 2020 till now. In the past he was the Director of the Haematology Section of the Department of Oncology and Haematology at the University Hospital "Città della Salute e della Scienza" in Turin, Italy up to November 30th 2019. He received his MD degree from the University of Turin in 1977; he was trained in haematology at the University of Pavia, and in clinical immunology at the University of Florence, Italy, then worked as a clinical research fellow in the haematology/oncology section of the Cancer Research Center, University of Chicago, IL, USA. He has also been Professor of Haematology at the post-graduate school of haematology of the University of Turin since 2005.
Dr Vitolo's research interests include haematological malignancies, chemotherapy, and biological therapies; he has a special interest in the biology and treatment of malignant lymphoma and is actively involved in clinical research in malignant lymphoma. He is currently leading and being involved in several cooperative multicentre trials in follicular and diffuse large cell lymphoma testing novel combination of chemoimmunotherapy, biological agents, bispecific antibodies and others.

He is member of the Italian Society of Hematology, Italian Society of Experimental Hematology and American Society of Hematology. He is elected member of the Accademy of Medicine of Torino. He is member of the expert panel for the Diffuse Large B-cell Lymphoma guidelines for the European Society for Medical Oncology and for the European Hematology Association. He was Chairman of the Italian Lymphoma Intergroup from 2007 to 2010 and President of the Italian Lymphoma Foundation from 2010 to October 2011 and now member of board of directors of the Foundation. He has authored more than 250 papers in peer-reviewed journals.

Zeba Aziz

Prof. Dr Zeba Aziz is a Renowned Medical Oncologist in Pakistan. She has been the Head of the Medical Oncology Department in Hameed Latif Hospital, Lahore, Pakistan since 1994, where she is also the Program Director for the Medical Oncology Fellowship. She previously served as a Professor & Head of the Department of Oncology at Jinnah Hospital, Lahore. She has also been the Dean of Medical Oncology for the College of Physicians and Surgeons Pakistan. She is currently the President of the Society of Medical Oncology of Pakistan. Her international activities include being on the steering committee for the Australian & Asia Pacific Oncology Research Development (ACORD) Workshop. She is also a Member of Expert Advisory Panel on Drug Evaluation World Health Organization (WHO) and Member of Expert Advisory Group (EAG) Medicine Patent Pool, Switzerland. She is also a member of She has made contributions to international cancer research through more than 80 peer-reviewed publications primarily on Haematologic malignancy, and breast and ovarian cancers.

HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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ADULT SPEAKER PRESENTATIONS

Sp01

Induction therapy choices and responses in a third world country: A single center study from Pakistan

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A B S T R A C T

Background: Leukaemia accounts for approximately 2.5% of all new cancer incidence and 3.1% of cancer-related mortality with a significant number of the total presenting as Acute Lymphocytic Leukemia. Acute Lymphocytic Leukemia (ALL) poses a healthcare burden in the majority of the countries of the world but is more so a case in resource-limited countries where access to comprehensive healthcare is often limited and scarcely available. This article tries to highlight the challenges in ALL treatments in one such region by presenting the facts regarding treatments employed and patient outcomes seen.
Method: This was a retrospective single-institution study in a tertiary care setup examining Ph neg ALL patient data from Jan 2019 to Dec 2020. It was stratified according to various parameters ranging from presentation to mode of diagnosis as well as treatment strategies and responses achieved after induction including mortality. Conventional chemotherapy regimens for ALL treatment were used with corticosteroids, vincristine, anthracyclines, asparaginase, cytosar, and MTX being the backbone of ALL induction. Cytogenetics were not possible due to resource constraints.
Results: Data showed 85 patients being managed during the mentioned time period. 65 percent were males and 68 percent were between the age 15 to 30 years. Approximately 80 percent had no co-morbid condition including diabetes, hypertension, ischemic heart disease or Hep B/C positivity. Around 60 percent were diagnosed on immunophenotyping by flow-cytometry and 62 percent used HyperCVAD as the induction protocol. Patients who achieved CR were 62 percent after single induction and most were assessed after count recovery on (3-4 weeks) or after 6 weeks with the percentages being 32 and 41 respectively. Duration of admission was for 1-3 weeks for almost 70 percent of the patients and those alive at the end of induction were around 90 percent.
Conclusion: In conclusion, the treatment of Acute Lymphocytic Leukemia in resource-limited countries remains a formidable task,sometimes requiring innovative and sustainable approaches. Due to limited resources, a resource stratified rather than risk-stratified treatment approach is often utilized to tailor therapy. This approach ensures that relatively better resourced patients receive more intensive treatment others are spared unnecessary toxicity. While the challenges in resource-limited settings are significant, the treatment strategies and chemotherapy protocols, if modified as per need and implemented effectively, hold promise in improving outcomes for patients with Ph negative Acute Lymphocytic Leukemia in regions which have limited resources at their disposal.

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Sp02

Bone marrow transplantation versus chimeric antigen receptor T cells (CAR-T) therapy for hematological malignancies

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Hematopoietic stem cell transplantation (HSCT) is an effective curative therapy for a long list of hematological malignancies. Historically HSCT was the only mode of therapy that could provide a cure for a long list of hematological malignancies including acute myeloid leukemia (AML), acute lymphatic leukemia (ALL), and myelodysplastic syndrome which are the main indications for HSCT in Europe; but also for chemosensitive non-Hodgkin lymphomas (NHL), Hodgkin lymphoma, and multiple myeloma (MM), the main indications for autologous transplantation. However, transplantation could be offered to only a rather small fraction of the patients in need due to the high risk of toxicity and mortality of the procedure especially in patients with comorbidities for age and

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performance status. But also due to the organ toxicity of the pre-HSCT, conditioning, and transplant-related complications, mainly graft versus host disease (GVHD). On the other hand, allogeneic transplantation mediating the graft versus tumor effect that correlates with GVHD provided the first demonstration of cellular immunotherapy and the ability to tailor the immune system against malignancies. The immune system can recognize and eliminate malignant cells and as such is a powerful tool in fighting cancer.

This was the basis for the development of donor lymphocyte infusions,nonmyeloablative conditioning, and finally the chimeric antigen receptor -T (CAR-T) adoptive immunotherapy that revolutionized anti-cancer therapeutics.

CAR-T cell therapy for hematologic malignancies turns out to be a cutting-edge therapeutic advancement that is leading the immunotherapy frontier and cancer therapy. CD19-specific CARs for lymphatic malignancies including NHL, MM, and ALL revolutionized the field and changed completely treatment paradigms in lymphatic hematological malignancies. Currently, there are 6 commercial CAR-T cell products that are FDA-approved (4 for NHL and ALL and 2 for MM). In general, the toxicities of CAR-T cell therapy are lower than those of HSCT, there are no age limits and CAR-T is effective in patients with chemoresistant, high-risk diseases that failed HSCT. In NHL they are offered already in the second line of therapy and as a result, the number of autologous transplantations is being sharply reduced in NHL and MM. However, there are major issues with the availability and affordability of CAR-T cell therapy, and many patients that are in need cannot receive it, especially in low or medium-income countries. Point-of-care academic CAR T cells may overcome these limitations. We, at Sheba Tel- Hashomer, initiated already in 2016 a point-of-care academic CAR-T cell program in which hundreds of patients with relapsed/refractory ALL, NHL patients (first as the third line, and then patients failing the first line of therapy or relapsed within 12 months), and from 2021 patients with MM are being treated with CD19 and anti-B cell maturation antigen (BCMA) based CAR-T cells, respectively. We also treated a small cohort of patients with AML harboring the 8:21 translocation that expressed CD19 with CAR-T cells. The benefits of point-of-care CAR-T cells are a shorter time, 10-11 days, from a vein (leukapheresis) to the vein (administration) and therefore, almost no need for bridging therapy but mainly lower cost significantly increasing CAR-T cells affordability and accessibility. We will try to discuss these issues in our session.

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Sp03

The revolution in frontline treatment of Multiple Myeloma

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The frontline treatment of multiple myeloma has recently been revolutioned, thanks to the approval of a new backbone, daratumumab, anti-CD38 monoclonal antibody, in both transplant-eligibile and -not eligibile patients.

In transplant-eligible setting, daratumumab has been added, according to CASSIOPEIA trial, to the previous standard-of-care bortezomib-thalidomide-dexamethasone (Dara-VTD), followed by autologous-stem cell transplantation (ASCT), two cycles of consolidation, and oral lenalidomide maintenance until progression.

In transplant-ineligible setting, daratumumab is added, according to MAIA trial, to lenalidomide-dexamethasone (DRD) until progression, or, according to ALCYONE Trial, to bortezomib-melphalan-prednisone (Dara-VMP) x 9 cycles.

Results are incredible in both settings in terms of efficacy and tolerability, with the achievement of very good quality of life for patients, also thanks to the schedules and the subcutaneous administration of daratumumab.

Achieving the deepest response correlates with the best long term result, and that's why, in this scenario, the endpoint becomes not only the achievement of complete response/stringent complete response, but also MRD negativity. That's why the importance of testing accurately the results of the treatment, particularly evaluating MRD during the patient journey, also in real world, is becoming more and more important, not only in order to optimize the use of the drugs, also in maintenance setting, but also to balance correctly efficacy and toxicity.

Ongoing trials are also aiming to evaluate the role of new generation agents, in new quadriplets with potential deepest results but also risk of greater toxicities for which supportive care needs to be improved and standardized.

In next future, ongoing clinical trials aim to evaluate the role of new agents in induction regimens, and also anti-BCMA CAR-T in replacing ASCT, together with the role of bispecific antibodies in maintenance setting, and the idea of MRD-driven approach potentiating or reducing the treatment according to the response.

CAR-T have shown excellent results in heavily pretreated patients, with the limits of tolerability and feasibility, also for costs: the increasing opportunities for academic products could help to improve and optimize the use and also to better evaluate these agents in a less selected population.

Another interesting perspective is to anticipate the treatment, before the onset of symptoms, concentrating efforts on correctly diagnosing and treating high-risk Smoldering myeloma, strongly waiting for results coming from phase 3 trials aiming to compare IMIDs with the combination anti-CD38 antbody, IMIDs and dexamethasone, avoiding ASCT, and permitting to the patients to obtain deep response with a really good tolerability.

In conclusion, in frontline setting, considering the wonderful opportunities that we have in real world, and that are coming in next future, our endpoint, should be to achieve the deepest responses, aiming to MRD negativity, particularly in young and fit patients, balancing with tolerability and quality of life.

This should become the new endpoint of upcoming clinical trials, considering that its achievement could correlates with the best long-term response and could really help us and our patients to the cure of multiple myeloma.

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Sp04

CML 2023 - State Of The Art And Cutting Edge İssues

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Chronic myeloid leukemia (CML) and its treatment is the prototype of translational research and success of targeted therapy. It was the first disease with a definitive molecular marker where specific targeted small molecular inhibitors, tyrosine kinase inhibitors (TKIs), changed dramatically the course and prognosis from a fatal disease into one with nearly normal survival. TKIs in clinical use are imatinib, nilotinib, dasatinib, bosutinib and ponatinib. Asciminib is a newly developed allosteric BCR-ABL1 inhibitor. Clinicians can personalize treatment based on the toxicity profile of TKIs, taking into account patients' age, comorbidities and lifestyle. Despite the revolution in the treatment and prognosis of CML in the last 3 decades we are still facing some challenges: Vascular adverse events have emerged as a serious side effect of some TKIs and treatment, especially of elderly patients, and this should be taken into consideration. While treatment of chronic phase CML is considered a great success, coping with accelerated and especially blastic phase CML is still a big challenge. The role of allogeneic stem cell transplantation (alloSCT) and donor lymphocyte infusion (DLI) in 2024 is minor but still relevant for some patients. Future treatments combining TKIs with checkpoint inhibitors as well as interferon or asciminib are under investigation. The issue of deep molecular response (DMR) and its implications for treatment discontinuation and treatment free remission (TFR) – who, when and why, has clinical as well as emotional and financial considerations. Matters of quality of life (QOL) and patient reported outcome measures (PROMs) are now in the forefront once the disease changed its course from a fatal to a chronic and even curable one. And finally, can we look into a crystal ball to predict at the outset who will respond to therapy, who will achieve DMR and who will benefit from prolonged TFR and cure.

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Sp05

Management Of Early Relapsed Follicular Lymphoma Debate Favoring Non-Transplant Options

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Follicular lymphoma (FL) is the most common non-Hodgkin lymphoma in the United States and Europe[1]. The disease is potentially incurable and, treatment options comprise a wide spectrum from local radiotherapy to chemoimmunotherapy, based on the risk factors. The outcome of follicular lymphoma patient requiring treatment significantly improved with the introduction of rituximab[2,3]. Rituximab or obinituzumab in combination with cyclophosphamide, adriamycin, vincristine, prednisolone (G/R-CHOP) or with bendamustine (BR/OR) are preferred in the frontline setting[4]. RELEVANCE study showed that lenalidomide-rituximab (R2) has similar efficacy to R-chemotherapy approach in the first-line treatment[5].The response rate to first-line chemoimmunotherapy is around 65% and, about 20% of the cases responding to chemoimmunotherapy experience progression of disease within 24 months (POD24) and have poorer overall survival[6,7]. Current prognostic scores are not efficient to predict POD24 cases.

AUGMENT study showed improved efficacy with R2 compared to R in the second line treatment of indolent lymphomas. Eighty-three percent of the cases had FL and 31% of the cohort experienced POD24. The overall response rate (ORR) was 78%, with an improved 2-year progression-free survival rate of 58% compared to 36% with R alone[8]. MAGNIFY study evaluating R2 maintenance following R2 induction reported an ORR of 65% and a median PFS of 27.4 months for POD24 group[9].

Tazemetostat is an oral EZH2 inhibitor. EZH2 is mutated in 20-30% of FL patients. It offered an ORR of 69%, with a median PFS of 13.8 months in early relapsed FL cases with EZH2 mutation. Although the ORR was lower compared to late relapsing cases, the PFS was longer in EZH2 mutant group compared to 5.8 months in wild-type cases[10]. Copanlisib,a pan-class I phosphatidylinositol 3-kinase inhibitor was evaluated in a phase II study in both indolet and aggressive lymphoma patients. The ORR was 58.7% in indolent lymphoma patients[11]. Chronos-3 trial revealed that when copanlisib was combined with rituximab, median PFS was improved to 21.5 months compared to 13.8 months with R monotherapy[12]. Idealisib, duvelisib and umralisib removed their indications for relapsed and refractory FL due to a trend toward lower overall survival (OS) in patients exposed to these agents[13].

CAR-T cell therapy changed the treatment paradigm in B-cell lymphomas. In the ZUMA-5 trial, Axicabtagene ciloleucel reported an ORR of 92% in both POD24 and without POD24 cohort.The 18-months estimated duration of response, PFS and OS rates were 60%, 55% and 85% in POD24 cases, whereas they were 78%, 84% and 94% in patients without POD24[14]. Treatment with Tisagenlecleucel showed lower complete response rates in POD24 patients compared to those without POD24, reported to be 59% vs 87.9%[15].

Treatment with bispecific antibodies, suc as epcoritamab, mosutetuzumab and glofitamab, constitute an alternative to CAR-T. The ORR ranged between 80% and 90% with bispecific antibody monotherapy in early-relapsing FL cases[16-18].

Nonchemotherapeutic approaches have promising outcomes and are currently preferred in second line setting for POD24 patients. The role of stem cell transplantation in controversial in FL. However, there is not any solid data comparing transplantation with nonchemotherapeutic options.

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Sp06

Treatment Of Classical Hodgkin Lymphoma: The State Of The Art

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WHERE WE ARE?

Patients with advanced-stage classical Hodgkin lymphoma (cHL) have a good prognosis. In most countries, the first-line treatment has been, for at least a couple of decades, the ABVD protocol. Depending on several factors such as age, presence of *bulky* disease, or extranodal involvement, around 75-80% of patients are cured with this regimen[1]. However, there are now new treatment recommendations for advanced-stage cHL. After 6 years of follow-up, the ECHELON-1 study showed overall survival (OS) benefit for brentuximab vedotin with AVD versus the standard ABVD[2]. This has never happened in previous direct comparative trials. Although the BV+AVD was already approved for first-line treatment of advanced-stage cHL patients, based on the gain of progression-free survival (PFS) published a couple of years ago, a benefit in OS makes a much stronger case. Peripheral neuropathy was a special concern, with about 2 out of 3 patients treated with BV+AVD experiencing some form of symptom. Mainly it was grades I 1 and 2, and the symptoms did resolve or improved in almost 90% of cases[2]. But the BV-AVD reign has already been challenged. The SWOG1826 study is a randomized, multicenter, phase 3 trial, that compares the combination of nivolumab with AVD (nivo-AVD) versus BV-AVD[3]. This is a large trial, with almost 1000 patients, that included patients between 12 and 83 years. The 1-year PFS rate was 94% versus 86% (HR 0.48, 99%CI 0.27-0.87; p=0.0005), in favor of Nivo-AVD. OS was similar (99% vs 98%), with a short median follow-up of 12.1 months. Interesting that both arms of this study were for a limited number of 6 cycles, something different that is normally done with checkpoint inhibitors (usually until the progression of the disease, unacceptable toxicity, or up to 2 years). So, a longer follow-up will be paramount to see if this advantage for nivo-AVD will hold in time. The toxicity profile was largely as expected and no new safety signals in both arms. On the other hand, the HD21 study looked at the association between BV and a similar backbone of the escalated BEACOPP (eBEACOPP), known as BrECADD[4]. This new regimen was compared in a multicenter, randomized, phase 3 non-inferiority trial, with the standard eBEACOPP. Using a PET-adapted strategy, where interim PET negative patients completed 4 total cycles versus 6 total cycles in PET positive, BrECADD was non-inferior to eBEACOPP. The 3y-PFS rate was 94.9% versus 92.3%, with a median observation time of 40 months. These impressive results compare favorably with BV-AVD in the ECHELON-1 study (6y PFS of 82.3%) and with Nivo-AVD in the SWOG study (1y PFS of 94%), but with all the restrictions of comparing different trials.

WHAT TO EXPECT FOR THE FUTURE?

Clearly, in one of the lymphomas with the best overall prognosis, the treatment landscape evolved. There are now at least 3 new options for the treatment of advanced-stage cHL in the first line, with better results than ABVD, the standard for a long time. As we continue to improve efficacy, toxicity remains an important issue. Longer follow-ups will be needed to see if we can have great results without impact in our patient's quality of life.

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Sp07

MDS 2023: State of The Art

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The myelodysplastic syndromes (MDS) are clonal bone marrow (BM) stem cell disease(s), characterized by abnormal hematopoiesis, with anemia (95%) and/or other cytopenias. The pathogenesis is based on genetics and inflammation of aging (inflammaging). The median age of onset is 74yr, with increasing incidence with age. Patients are classified as having a lower (LR-MDS) or higher risk disease (HR-MDS), and leukemic transformation occurs in 20%-60%.

We will cover new aspects like quality of life (QoL), novel genetic information, will briefly touch the emerging field of inflammaging, describe new tools for (early) diagnosis, the new classifications, and finally will address MDS treatment. We will skip aspects such as epidemiology, clinical picture and cytogenetics.

Over the last decade QoL has become important in MDS, to study and improve – we will show some data. Genetics is an integral part of evaluation, with at least one mutation in 90% of MDS patients, but as more information is obtained it has become clear that the field is quite complex. The pathogenesis is carefully investigated and inflammation of aging (inflammaging) appears to play an important role.

Diagnosis of MDS has been recognized as a challenge. The introduction of new tools, such as genetic and digital medicine improve the process, make it more accurate, less invasive, and hopefully may identify individuals at risk.

Several new MDS classifications (and guidelines) have been proposed over the last couple of years. We will focus on the new IPSS-Molecular model, and will summarize the 5th WHO and ICC classifications.

RBC transfusions and erythropoietin (EPO) remain the 1st line treatment for anemia in lower-risk MDS. EPO is safe and might delay the need for RBC transfusions. A recent EUMDS study suggests a prolonged survival with EPO. Lenalidomide remains effective for MDS with del(5q) (50% response), but also somewhat effective (27%) in non-del(5q) patients. Luspatercept appears as an effective second-line (maybe 1st ?) agent. Several experimental agents are investigated, including oral azacytidine, imetelstat, a pyruvate-kinase activator and roxadustat. For thrombocytopenia two agents, romiplostim and eltrombopag, were shown to be effective. However, due to safety concerns their development has been stopped.

Treatment of higher-risk MDS is still based on hypomethylating agents (HMA) as the standard 1st line treatment, but attempts are ongoing to overcome the barrier of 50% response rate and less than 2 years response duration. Younger patients may respond to antileukemic treatment with or without transplant. Ways to improve the HMA effect include treating the HMA-related complications; modified HMA formulation; combinations of HMA with other agents (venetoclax appears to be the frontrunner), novel agents and targeted molecules.

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Sp08

Blastic Plasmacytoid Dendritic Cell Neoplasm BPDCN

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Blastic plasmacytoid dendritic cell neoplasm (BPDCN) is a rare hematologic malignancy with an aggressive clinical course and poor prognosis. BPDCN is most often characterized by its presentation with cutaneous lesions which are often asymptomatic, can be solitary or multiple lesions, can be distributed widely, and may range from bruise-like lesions to plaques or nodules. Bone marrow involvement, central nervous system (CNS) infiltration, lymphadenopathy, splenomegaly, and/or cytopenias are also seen to varying degrees.

The nomenclature has changed many times over the years, making descriptions of the epidemiology more challenging. It was first described in 1995 as acute agranular CD41 natural killer (NK) cell leukemia. In the most recent WHO 2022 classification, BPDCN is classified under dendritic cell and histiocytic neoplasms along with plasmacytoid dendritic cell proliferation associated with myeloid BPDCN is more common in older men, with a sex ratio of 3:1 to 5:1 and a median age of diagnosis between 60 and 70 years. A bimodal age distribution was recently described, with higher incidence in patients aged ,20 and .60 years.

BPDCN cells characteristically express CD123, CD4, CD56, CD303, TCF4, and TCL-1, whereas certain specific lineage markers such as CD14, cCD3, CD19, and MPO are not expressed.

Genetic mutations implicated in the pathogenesis of BPDCN include inactivating tumor suppressors (ie, TP53, RB1, CDKN1B, and CDKN2A), activating oncogenes (ie, NRAS, KRAS, FLT3, RUNX2, and HES6), activated NF-κB pathway, mutated RNA spliceosomes (ie, ZRSR2 and others), immune response gene dysregulation (IFNGR, TGFB, CLEC4C, and IFNA cluster), and epigenetic dysregulation (ie, IDH1, IDH2, TET1, TET2, and ASXL1).

Historically, BPDCN treatments have been based on multiagent chemotherapy regimens for lymphoma, acute lymphoblastic leukemia, and AML. In addition, acute leukemia regimens achieve high complete response (CR) rates ranging from 40–90% and allogeneic hematopoietic cell transplantation (allo-HCT) can result in durable remission in some patients. However, their rarity and heterogeneity make it difficult to determine the most effective therapeutic strategies.

Owing to recent advances in molecular biology and genetics, targeted treatment strategies have been developed. In 2018, the FDA approved tagraxofusp, a firstin-class CD123-targeting therapy for treatment- naïve or relapsed/refractory BPDCN.However, unfit, relapsed, or refractory patients continue to require effective therapeutic strategies.

Besides CD123 Targeted therapy; many other modalities are considered e.g. Venetoclax-based therapy, Transplantation and many new potential therapeutic targets under investigation.

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Sp09

Sustained Remission and Decreased Severity of CAR T-Cell Related Adverse Events: A Pivotal Study Report of CNCT19 (inaticabtagene autoleucel) Treatment in Adult Patients with Relapsed/Refractory B-Cell Acute Lymphoblastic Leukemia (R/R B-Cell ALL) in China

Lv Lulu

Juventas Cell Therapy Ltd

A B S T R A C T

CNCT19 (inaticabtagene autoleucel) is an autologous CD19-specific chimeric antigen receptor (CAR) T-cell product. The patent protected CAR structure of CNCT19 contains a unique CD19 scFv, HI19a, which is different from commonly used FMC63. Together with using 4-1BB co-stimulatory domain in the CAR structure, CNCT19 is expected to reduce the severity of treatment-associated cytokine release syndrome (CRS) and neurologic toxicities (NT) while maintaining a stronger and longer durable anti-tumor effect.

CNCT19 has been granted Breakthrough Therapy Designation by China National Medical Products Administration and Orphan Drug Designation by the U.S. FDA for the treatment of ALL.

The trial of CNCT19 in adult Chinese patients with R/R B-cell ALL (NCT04684147) is a single-arm, open-label pivotal study conducted at 10 centers in China. The primary endpoint was the overall complete response rate (OCR) of complete response (CR) and CR with incomplete hematological recovery (CRi) within 3 months and at the end of Month 3 after CNCT19 infusion by central assessment.

All 39 patients diagnosed with B-cell ALL were refractory and relapsed to multiple lines of prior therapy. Among the 39 patients 32 (82.1%) had reached MRD-negative OCR within 3 months after CNCT19 infusion, The median duration of response and OS have not been reached. 25 patients (64.1%) remained on CR (51.3%) or CRi (12.8%). at the end of Month 3 after CNCT19 infusion These patients had sustained long-term remission regardless of whether subsequent allo-HSCT treatment was done or not. The most common CNCT19-related adverse events (AEs) were CRS and NT and there were

4 cases of Grade ≥ 3 CRS (n=4, 10.3%) and 3 cases of Grade ≥ 3 NT (n=3, 7.7%). Following CNCT19 infusion, all the patients recovered. No death cases were reported due to CRS or NT.

CNCT19 CAR-T cell therapy achieved a high rate of MRD-negative complete remission in adult patients with R/R B-cell ALL. Thus, with its distinct CAR structure containing a unique CD19 scFv (HI19a), CNCT19 provides effective treatment with potential long-term clinical benefits for adult patients with R/R B-cell ALL.

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Sp10

Personalized Dendritic Cell Vaccines

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Due to their ability to cross-present antigens associated with tumor cells to naive T cells, DCS play an important role in generating specific T-cell-mediated antitumor effector responses in controlling tumor growth and tumor cell dissemination. Clinical trials in this area have demonstrated the possibility of immunotherapy based on dendritic cells. In the current study, we give a brief overview of the biology of DC, describe the sources of obtaining tumor-associated antigen, and also consider the current status of the field of application of DC as anti-cancer vaccines.

Methodology: Peripheral blood mononuclears were used in the work, as well as lung tumor cells, from which tumor lysate was obtained. Tumor lysate was obtained by freezing and thawing a cell suspension by placing an ampoule with cells in liquid nitrogen or warm water, respectively. Dendritic cells were obtained by culturing human peripheral blood monocytes. The key cytokines used in the cultivation of DC from monocytes are GM-CSF and interleukin-4 (IL-4). DC was loaded with antigens after replacing the culture medium with the addition of tumor lysate to the cells and incubation for 2 hours. The main way to assess the quality of the vaccine created on the basis of DC was the method of flow cytofluorimetry. The main characteristics by which DC is evaluated are the immunophenotype and the percentage of living cells.

Conclusion: The proven method of obtaining dendritic cells loaded with tumor lysate makes it possible to apply this approach more widely in oncological practice. The use of an antitumor vaccine based on autologous dendritic cells for the prevention of relapses may become a new way of adjuvant treatment.

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Sp11

CPi -Clalit Proactive and Preventative Intervention

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Clalit is the largest HMO in Israel that insures more than 4.7 million people and the second HMO worldwide after Kisser in USA. CPi - Clalit Proactive and Preventative Intervention, is the flag project innovation of clalit community division, in collaboration with clalit research institute and clalit digital division. This innovation combines big data, medical databases, artificial intelligence and a complex computer algorithm, which guides the doctor during the visit, to provide evidence-based personalized knowledge.

No more, surrogate outcomes but rather pure major events outcome. The vision - Patients will receive a proactive and preventive care suitable to their current condition based on the most updated clinical guidelines in an attempt to reduce the gaps in good clinical practice and combined them together to a pure handy knowledge for the primary care physician. The former name of the project Was POEMS -Patient oriented evidence that matters meaning we treat our patients in order to improve their morbidity and to reduce their mortality.

For example, Diabetes is a major issue at the primary care clinic. When I started to practice medicine there were 3-treatment option: Sulphonyls urea Metformin and Insulin. Unfortunately, nowadays there are more than 60 drugs on the shelf, each one of them with pros and cons, and as the one responsible for the evidence based care, it is hard and almost impossible to remember the names, the inclusion criteria and the adverse effect of each drug concerning the patient history.

We used the current guidelines from the American Diabetes Association and converted those guidelines to the Israeli basket aiming to give the right medication to the right patient considering the patient morbidity as; Atherosclerotic disease, Heart Failure, and Chronic Kidney Disease. Expert committees create an ideal "clinical pathway" for each clinical condition and so, patients “travel” through these pathways every single day and gather their personalized recommendations. CPI can advise to add another diabetic medication for the patient, while taking into account his cardiac, kidney and liver functions. Detailed Explanation is available for each recommendation from Dynamed (wwwdynamed.com)

This is already happening nowadays, more than 1500 physicians, half of the primary care physician at Clalit use this platform.

In 7 years the WHO is aiming to declare the world as free from hepatitis C. In march 2023 we added, hepatitis C as a major issue at CPi. We developed strict algorithm by Artificial Intelligence according to patient's risk factors. The patients are sent to Antibody Blood test (AB for Hepatitis C). People

with positive AB will automatically pass PCR test, those that are positive will be presented to the physician at the CPI screen, guiding him to prescribe one out of the two anti-viral treatment for hepatitis C while checking beyond the screen the cross reaction between the patient chronic medications and the new viral medication against Hepatitis C .

BY the end of 2023 we are going to launch our last version of hypertension treatment according to the new version of the JNC as the same manner as diabetes. Couple of weeks later we will launch the CPI model for primary CVD treatment according to the evidence based guidelines supported by remote monitoring at the patient own and comfort environment using blood pressure gauge and glucose sensors that can broadcast the output directly to the patient record and CPi.

CPi is a breakthrough platform for Clinicians. Our routine quote for the busy physician is that 3 clicks for an answer are 2 clicks too much.

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HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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PEDIATRIC PRESENTATIONS

Sp01

HEMATOPOIETIC STEM CELL TRANSPLANTATION IN CHILDREN WITH CENTRAL NERVOUS SYSTEM TUMORS

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Central nervous system (CNS) tumors are still the most common malignant solid tumors in childhood and constitute 16-25% of all tumors (1). Most tumor types include malignant gliomas, ependymoma,medulloblastoma, and atypical teratoid rhabdoid tumors (2). Surgery, radiotherapy (RT), and chemotherapy are the primary treatment modalities, and the prognosis in some histopathological subtypes and recurrent or residual diseases is, unfortunately, still poor. In cases under three, avoiding radiotherapy due to the long-term side effects adversely affects the prognosis. For this reason, the studies on high-dose chemotherapy with autologous hematopoietic stem cell transplantation (HDC/AuHSCT) are mostly conducted on recurrent CNS tumors, cases under three years old, and medulloblastoma which is a chemosensitive tumor.

The most crucial factor in increasing the success of the transplant is minimizing the tumor burden before transplantation. The minimal residual disease generally includes residual tumor <1.5 cm2, no tumor cells in cerebrospinal fluid, and minimal radiological signs in metastatic sites (3). Chemotherapeutics with good CNS penetration should be selected in the conditioning regimen. Carmustine, thiotepa, and melphalan are some of these drugs (4).

Considering the low number of patients with malignant gliomas, the 4-year overall survival (OS) rates range from 30-46% (5,6), while the 2-year OS rates were found to be 46% in the study of the Children Cancer Group with 86 cases. The study was terminated early due to pulmonary toxicity (7). In pontine gliomas and ependymomas, the effect of transplantation on treatment success has not been demonstrated (8-11). In a meta-analysis evaluating patients with metastatic atypical teratoid rhabdoid tumors, HDC/AuHSCT was shown to improve survival ($p<0.0001$) and reduce the risk of mortality ($p<0.0001$) (12). The study of the European Rhabdoid Registry has shown that selected cases may benefit from transplantation together with RT (13). In the study performed by the St. Jude group on newly diagnosed medulloblastoma cases, 5-year event-free survival (EFS) was found to be 83% and 70% in the high-risk and average-risk groups (14). In the Head Start III study, RT was not applied to the patients who were younger than six years of age and had nonmetastatic tumors at diagnosis, and had no residual tumors after induction therapy, and HDC/AuHSCT was performed. The 3-year RT-free EFS was 49.5% in the whole group, and the 5-year EFS was 88% in the desmoplastic group (15). The Children Oncology Group's study applied tandem consolidation treatment with HDC/AuHSCT to 36 medulloblastoma cases. Five-year EFS was 60% in the entire group (16). These studies show that a high survival rate can be achieved without affecting neurocognitive functions.

In conclusion, HDC/AuHSCT is a treatment option that can be applied in some CNS tumors. Specifically, it can be applied when the patient is under three years of age, without affecting neurocognitive functions and reducing survival rates despite not performing RT.

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Sp 02

STEM CELL TRANSPLANTATION AS A TREATMENT OPTION FOR RELAPSED/ REFRACTORY GERM CELL TUMORS

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Malignant germ cell tumors (GT) arise from abnormal migration of primordial germ cells and are histologically identical whether they occur inside or outside of central nervous system (CNS) (1). They are divided into two heterogenous groups: germinomas and non-germinomatous germ cell tumors according to histological findings. Although the optimal treatment strategy remains a matter of debate, they generally respond well to surgery, radiotherapy, chemotherapy, or a

combination of all and are characterized by a good survival rate (2). The surgical strategy for GCTs varies depending on the location of the tumor. Surgery is only a standard care option for low grade extracranial GCTs because it is unlikely to achieve negative tumor margins when the tumor is located inside CNS (2). Patients with relapsed or progressive despite initial chemotherapy are candidates for salvage therapy (3). Patients relapsing after definite treatment of locoregional disease are to be treated by stage adopted first line standard therapy for metastatic disease. Patients with primary advanced/metastatic disease failing one line of cisplatin based combination chemotherapy can benefit from high dose chemotherapy and stem cell rescue (4). Although stem cell transplantation following high dose chemotherapy can be beneficial, either two or three consecutive cycles of high dose chemotherapy with repetition after blood count recovery may contribute to overall survival rates.

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Sp03

CURRENT THERAPIES PRIMARY LANGERHANS CELL HYSTIOCYTOSIS

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Langerhans cell histiocytosis (LCH) is a neoplastic histiocytic disorder that most commonly affects bones and skin, but it can also involve the bone marrow, liver, spleen, lungs, pituitary gland/central nervous system, and other organs. LCH is rare, but it is considerably more common in children (especially younger children) than in adults

LCH is so-named because the neoplastic cells resemble dendritic Langerhans cells in the skin and mucosa; however, the CD1a+, CD207+ neoplastic cells of LCH are derived from myeloid dendritic cells, rather than from epidermal Langerhans cells. The *BRAF* V600E mutation is present in more than half of cases, and activation of the mitogen-activated protein kinase (MAPK) pathway is a key driver of this neoplastic disorder.

According the Histiocytic Society classification, histiocytic disorders divide into five categories, based on clinical, histologic, immunophenotypic, and molecular features.

- Langerhans (L) group: The L group includes LCH, Erdheim-Chester disease (ECD), mixed LCH/ECD, indeterminate cell histiocytosis, and extracutaneous juvenile xanthogranuloma.
- Cutaneous and mucocutaneous (C) group
- Rosai-Dorfman disease (R) group
- Malignant histiocytosis (M) group
- Hemophagocytic lymphohistiocytosis (H) group

Symptoms, affected organ systems, and disease tempo of LCH vary between patients. Affected individuals range from neonates to adults, although it is more common in young children than adults. The diagnosis may not be made for years after the first clinical manifestations because of its variable presentation.

LCH can present as a single site or multiple sites of disease in one organ (eg, in bone or skin) or it can present in multiple organ systems simultaneously or sequentially. This distinction is important for determining prognosis and disease management

➢ **Single-system LCH** – Patients who present with single-system LCH can be of any age; they typically do not have systemic symptoms of weight loss or fever. The following organs are most often affected and can exhibit unifocal or multifocal involvement:

- Bone
- Skin
- Lungs
- Pituitary
- Central nervous system (CNS)
- Lymph nodes (excluding draining lymph node of another LCH lesion) and other rare locations (eg, thyroid, thymus)

➢ **Multisystem LCH** – Two or more organs/systems are involved. Among patients with multisystem disease, it is important to identify those with involvement of critical organs (CNS and lung) and "risk" organs (bone marrow, liver, spleen).

➢ **Children** – Among children, LCH is limited to one organ system in approximately 55 percent of cases; the remainder present with multisystem disease . Acute disseminated multisystem disease is most often seen in children <3 years, while involvement of a single organ is more common in older children and adults.

A report involving 1741 children with LCH registered in prospective trials reported the following areas of involvement at the time of diagnosis

- Bone – 77 %
- Skin – 39 %
- Lymph nodes – 19%
- Liver – 16%
- Spleen – 13%
- Oral mucosa – 13%
- Lung – 10%
- CNS – 6%

Adults most commonly present with skin rash, skull or jaw tumor, dyspnea or tachypnea, polydipsia/polyuria, bone pain, lymphadenopathy, weight loss, fever, gingival hypertrophy, ataxia, and memory problems

Management – Management of LCH is guided by the extent and severity of disease, as determined by the pretreatment evaluation.

- Single-system versus multisystem disease
- Involvement of central nervous system (CNS) or a critical (“risk”) organ (bone marrow, liver, or spleen)
- Unifocal versus multifocal/extensive disease
- Symptoms
- Age – Preferred systemic treatment for children (≤20 years)

Single-system disease

- Bone-only –Single bone – Curettage provides tissue diagnosis and treatment. Radiation therapy (RT) may be used for selected adults, but not children.
- Multiple bones – For ≥2 bone lesions, lesion ≥5 cm, femoral or vertebral involvement, or CNS-risk bone (ie, orbit, mastoid, temporal, sphenoid), treatment involves systemic therapy.

Surgery or RT may be added in selected cases.

- Skin-only – Topical steroids or mustard, or oral hydroxyurea, methotrexate, thalidomide, or lenalidomide can be effective.
- Multisystem – Multisystem disease requires systemic therapy.
- Children – For initial systemic treatment of children with LCH, we suggest induction therapy with vinblastine plus prednisone (V-P), rather than other chemotherapy regimens or a targeted agent (Grade 2C).

Treatment response guides further management; continuation therapy is 12 months for response to V-P.

- CNS or risk organ involvement – For adults with BRAF V600E-mutated LCH and involvement of CNS or a risk organ, we suggest a BRAF inhibitor (eg, vemurafenib, dabrafenib), rather than systemic chemotherapy (Grade 2C).

For adults with BRAF wildtype LCH with CNS or risk organ involvement, we suggest cytarabine or cladribine, rather than combination chemotherapy or a targeted agent (Grade 2C).

- Response assessment – Positron emission tomography (PET) is preferred for response assessment, but computed tomography (CT), magnetic resonance imaging (MRI), or clinical assessment is used when PET is not available or appropriate (eg, brain lesions).
- **Long-term surveillance** – Patients are at risk for treatment-related toxicity, second cancers, and endocrine complications.

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Sp04

THROMBOSIS IN CHILDHOOD LEUKEMIA AND LYMPHOMA

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Thrombosis in childhood usually develops secondary to underlying causes. One of the most important risk factors is cancer. It has been reported that the incidence of thrombosis in children with cancer is 2-16% when symptomatic thrombosis is mentioned and it climbs up to 50% if asymptomatic conditions are included. Thrombosis associated with childhood cancers is multifactorial. In addition to the prothrombotic effect of cancer, mass effect, vascular invasion of cancer, drugs used (e.g., steroid, asparaginase), catheter, infection, immobilization, surgery, total parenteral nutrition, and comorbid genetic thrombophilia are the most important underlying etiologies. Thrombosis can cause morbidity, mortality, as well as inadequate or delayed treatment. Among childhood cancers, thrombosis risk is more common in acute lymphoblastic leukemia and lymphoma than in solid malignancies. Among the drugs used for the treatment of thrombosis, low molecular weight heparin constitutes the most important group. Warfarin, on the other hand, can be preferred in case of long-term use, but its use may be challenging due to polypharmacy and nutritional instability on warfarin efficiency. Thrombolytic therapies are rarely used in selected cases. In addition to general measures to reduce the risk of thrombosis, prophylaxis is controversial. Prophylaxis has not been included in the standard guidelines for the prevention of thromboembolic complications in childhood. It can be considered for use in high-risk patients. However, prophylaxis during cancer treatment may be more challenging, especially in this group of patients who need frequent interventions (e.g., intrathecal treatments) and have an increased risk of bleeding secondary to thrombocytopenia and coagulopathies. There are many continuing studies on the prophylactic and therapeutic use of new-generation anticoagulants in childhood.

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Sp05

CANCER TREATMENT-RELATED CARDIOTOXICITY: OPTIMIZING HEART HEALTH FROM DIAGNOSIS TO LONG-TERM FOLLOW-UP

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Improvements in overall survival rates for children diagnosed with cancer have led to a growing number of long-term childhood cancer survivors and an increasing recognition of the late health conditions they may experience. Among these are cardiac conditions, most commonly associated with prior anthracycline chemotherapy and chest-directed radiation exposing the heart. Potential late effects of anthracycline chemotherapy and chest-directed radiation therapy include cardiomyopathy, subclinical left ventricular dysfunction, heart failure, and arrhythmia. In addition, chest-directed radiation exposing cardiac substructures has been associated with risk for pericarditis, pericardial fibrosis, valvular disease, atherosclerotic heart disease and myocardial dysfunction. Patient (e.g., age at exposure, family history, genetic variation) and treatment (e.g., cumulative dose, multimodality cardiotoxic therapy) factors influence the magnitude of risk. In addition, co-morbid medical conditions (e.g., hypertension, diabetes, dyslipidemia, obesity) and health behaviors (e.g., smoking) can exacerbate risk in aging survivors. Recognition of treatment associations and adverse cardiac outcomes has informed risk-stratification strategies used in contemporary protocols and guided health surveillance recommendations for long-term survivors. Dexrazoxane has also been used for primary prevention of anthracycline cardiotoxicity in high

exposure groups. Screening guidelines recommend frequency-adapted (based on cumulative cardiotoxic exposures) echocardiography to facilitate early identification of cardiomyopathy as well as attention to modifiable cardiovascular disease risk factors and health behaviors. This presentation will provide an overview of cardiotoxic cancer treatment modalities and current approaches to prevent cardiac disease and preserve cardiac function.

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Sp06

TRANSFUSION IN PEDIATRIC ONCOLOGY

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Transfusion of blood components is a critical – life-saving - part of the care of children with hematologic and oncologic diseases. According to studies, pediatric oncology patients account for approximately 25% of all inpatient pediatric transfusions in clinical practice. Pediatric oncology patients may require multiple transfusions of blood components, including red cells, platelets, and plasma, due to underlying disease, bone marrow suppression, and therapy-related bleeding. There are few studies that specifically address transfusion in the pediatric oncology patient population. Recently, some recommendation papers or guidelines have been adopted in the literature.

In children with oncologic diagnoses or in patients undergoing hematopoietic stem cell transplantation who are critically ill or at risk of critical illness and who are hemodynamically stable, an Hb concentration of 7 to 8 g/dL is suggested as a threshold for red blood cell transfusion. For platelet transfusions, both the ICTMG and ASCO advocate a threshold of 10×109/L for prophylactic platelet transfusion, and children undergoing hematopoietic stem cell transplantation for sickle cell disease are at high risk for intracranial hemorrhage, so the platelet count should be at least 50×109/L in the period immediately after transplantation. There are no specific data for plasma transfusions in oncologic patients, and standard indications established for critically ill children are used in clinical practice. More limited to children with hematologic and oncologic disease, granulocyte transfusions may be considered in children with an absolute neutrophil count less than 500/mL or known neutrophil dysfunction and invasive clinical infection with demonstrated inadequate response to antimicrobial therapy.

In addition to selecting the type, timing, and dosage of blood product, the decision for leukoreduction, irradiation and washing is critical in pediatric oncology patients.

Further research surrounding indications, risk, benefits, and alternatives to RBC transfusion in critically ill children with oncologic diagnoses or undergoing hematopoietic stem cell transplant is sorely lacking. Although strong evidence-based guidelines for this patient population do not exist, given the morbidities associated with the receipt of blood products, practitioners should attempt to use restrictive transfusion strategies.

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Sp07

APPROACH TO PAIN MANAGEMENT

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International Association for the Study of Pain describes pain as 'An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage' (1). The phenomenon of pain is a common and underdiagnosed distressing symptom, resulting from the interaction between neural pathways and neurochemical mediators. An important group that suffers from acute and chronic pain -both at the beginning of the disease and in the later stages- are pediatric cancer patients. It is known that more than half of all children with cancer experience moderate to severe pain. Management of pain in childhood cancer plays an important role in patients' life quality and compliance with their treatment. Moreover, it is thought that uncontrolled pain may have negative effects on immune system functions, wound healing, tumor growth, and gastrointestinal functions through cortisole and neurochemokines that occur as a result of pain (2).

Pain can be categorized into three types for determining the etiology which may guide treatment choices:

Nociceptive pain: Tissue injury and inflammation cause activation of nociceptors by inflammatory mediators and activate neurons that transmit the pain. Bone metastasis and mucositis are examples of this group. 'Somatic Nociceptive pain' is typically well localized and described as sharp, aching, squeezing, stabbing, or throbbing. Visceral Nociceptive pain' is often described as dull or crampy.

Neuropathic pain is caused by nerve injury (resulting from compression, transection, infiltration, ischemia, or metabolic injury to the nerves) and can be described as burning, scratching, tingling or with numbness.

Nociplastic pain occurs without evidence of tissue or nerve damage. The mechanisms are not well understood. It is thought that dysfunction of the pain signals of central nervous system plays a role (1).

Assessment of the severity of pain in children is more difficult than adults and it is related to the child's age, cognitive ability and clinical condition. Observational– behavioral scales consider child's reaction to pain for younger children or cognitively impaired patients. The most common scales are FLACC (used for children < 3 years), facial expressions in the Wong-Baker pain scale for 3-8 ages, and numericale valuations in the Wong-Baker pain scale for children older than 8 years (3).

Multidisciplinary and individualized pain management incorporating pharmacological and non-pharmacological

(cognitive-behavioral and supportive therapies) can be more effective for pain. Pharmacological therapy varies depending on the child's age, pain intensity, drug's pharmacokinetics and response to previously administered agents. The World Health Organization analgesic ladder algorithm facilitates the choice of the appropriate drug. Acetaminophen and nonsteroidal anti-inflammatory drugs are the first choice for mild pain. Opioid agents (morphine, hydromorphone, oxycodone, hydrocodone, fentanyl, methadone) should be used for moderate to severe pain. Analgesics should be used orally whenever possible and adverse effects of opioids (eg, pruritus, constipation) should be carefully monitored.

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HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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ORAL PRESENTATIONS

Adult Hematology Abstract Categories

Chronic Myeloproliferative Diseases
OP 01

THE RELATIONSHIP BETWEEN POLICYTEMIA VERA AND METABOLIC SYNDROME: THE SINGLE CENTER EXPERIENCE

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Objective: Polycythemia vera (PV) is the most common myeloproliferative neoplasm. It is known that while the amount of substances such as malonyl-dialdehyde, which are known as oxidative stress markers, increases in PV and metabolic syndrome (MS), antioxidant molecules decrease. There are very few studies investigating the clinical relationship between PV and MS. In our study, we determined the incidence of MS in patients diagnosed with PV in our center and investigated the relationship between MS and PV. **Methodology:** Forty patients with PV were included in the study. The study included non-smoker patients over the age of 18 who were followed up in our center and diagnosed with polycythemia vera according to the diagnostic criteria specified by the World Health Organization in 2016, by examining bone marrow aspiration biopsy and JAK mutation. The diagnosis of metabolic syndrome was made according to the criteria set by the International Diabetes Association. **Results:** Of the 40 patients included in the study, 23 (57.5%) were diagnosed with MS. Gender, age, HbA1c, fasting blood glucose, hemoglobin, ferritin, triglyceride, HDL, systolic and diastolic blood pressures, waist circumference measurements of PV patients with MS were compared with PV patients without MS. HbA1c, glucose, Triglyceride, blood pressure, values showed a statistically significant difference between the groups diagnosed with MS and PV. **Conclusion:** The incidence of MS in our country is 32.9%. In our study, the incidence of MS in patients with PV was found to be higher than the Türkiye average. Oxidative stress seems to be important in the etiology of the two diseases, so our study shows that it is important for the clinician to be careful in patients diagnosed with PV and MS. Although there seems to be a relationship between PV and MS in our study, the data need to be confirmed by studies with a higher number of patients.

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Adult Hematology Abstract Categories

Lymphoma
OP 02

THE OUTCOME OF PERIPHERAL T-CELL LYMPHOMA PATIENTS FAILING FIRST-LINE THERAPY, FROM PROSPECTIVE COHORT OF T-CELL BRAZIL PROJECT

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2531-1379/

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Objective: In Brazil, the National Institute of Cancer estimates for the years 2023-2025 about 12,040 new cases of NHL, about 1,444 of peripheral T-cell lymphomas (PTCLs). T-cell Brazil project is an ambispective study inserting new diagnosis from January 2015 to December 2022. Our goal was to explore a prospective cohort (PC), April 2017-December 2022, analyzing primary refractory and relapse (R/R) PTCLs pts to explore bad factors for overall survival (OS). **Methodology:** PC enrolled 461 pts who received 1ª treatment line. Descriptive analyses, Kaplan-Meier method, Log-Rank test to compare groups and Cox Regression to identify risk factor for OS using IBM-SPSS software v.24. **Results:** It was identified 171 (37%) pts, 71% refractory and 29% relapsed. Median mo. from treatment to R/R was 6 mo. (1-49). Overall, 42% received 2nd line treatment and these 11% had to bone marrow transplantation. After a median 17 months (0-51) of follow up, 64% pts had died, and 74% due to lymphoma, 17% infections, 9% toxicities. Refractory pts (HR=2.51, *P*<0.0001), IPI=2-4 (HR=3.19, *P*<0.0001) and >1 extranodal site (HR=1.76, *P*=0.01) were associated with a higher risk of death in a Cox Regression. **Conclusion:** This study confirms outcomes for patients treated according to standards treatment. No difference was found in OS with respect to histology. Results confirm that peripheral T-cell lymphomas patients had dismal outcome after relapse or progression, besides of higher IPI and more than one extranodal site at diagnosis. However, HCT as salvage can possibly prolong life as some studies already indicated.

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OP 03

IBRUTİNİB-OBİNUTUZUMAB COMBİNATİON THERAPY İN THE TREATMENT OF RELAPSED NODAL MARGİNAL ZONE LYMPHOMA: A CASE STUDY

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Background: Marginal Zone Lymphoma (MZL) is a type of non-Hodgkin lymphoma (NHL) originating from B-lymphocytes. It is characterized as a slow-growing or indolent lymphoma and is considered a rare disease. The report focuses on a case of MZL diagnosed in childhood, which relapsed after initial treatment and subsequently went into remission following ibrutinib-obinutuzumab treatment. **Case Report:** In 2010, a 9-year-old girl with no previously known systemic illnesses was diagnosed with stage 4B nodal marginal zone lymphoma outside a pediatric center. Initially, she achieved remission following treatment with rituximab-bendamustine but experienced a relapse in 2012. Subsequent to lymph node excision and Methotrexate, Ifosfamide, Etoposide, and Dexamethasone (MIED) therapy, all conducted outside the pediatric center, she received an autologous stem cell transplant in 2013. Five years after the transplantation, she applied to our center when she was 18 years old, exhibiting widespread lymphadenopathy and suffering a relapse of stage 4B nodal MZL. Treatment with ibrutinib-obinutuzumab was commenced, leading to a full response after six cycles, without any adverse effects. Maintenance therapy with ibrutinib was initiated to avert further recurrence. **Conclusion:** The treatment of relapsed nodal MZL continues to be challenging. In patients who have previously received repeated cytotoxic chemotherapy, the combination of ibrutinib-obinutuzumab may be an effective and safe option to avoid cumulative toxicity of chemotherapy. Further studies with more cases in R/R nodal MZL will contribute to the management of the disease.

Keywords:
Marginal Zone Lymphoma (MZL)
Non-Hodgkin lymphoma (NHL),Ibrutinib-Obinutuzumab
Relapsed Nodal MZL
Lymphadenopathy

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Adult Hematology Abstract Categories

Myeloma
OP 04

ISATUXIMAB PLUS CARFILZOMIB AND DEXAMETHASONE VERSUS CARFILZOMIB AND DEXAMETHASONE IN PATIENTS WITH RELAPSED MULTIPLE MYELOMA (IKEMA): FINAL OVERALL SURVIVAL ANALYSIS

Ecenur Guder Arslan [1], Kwee Yong [2], Thomas Martın [3], Meletios Dımopoulos [4], Joseph Mıkhael [5], Marcelo Capra [6], Thierry Facon [7], Roman Hájek [8], Ivan Špıčka [9], Ross Baker [10], Kihyun Kım [11], Gracia Martınez [12], Chang-Ki Mın [13], Philippe Moreau [14]

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Objective: Isatuximab (Isa, anti-CD38 monoclonal antibody) is approved in combination with carfilzomib (K) and dexamethasone (d), for relapsed multiple myeloma (MM) patients (pts) after ≥1 prior therapy. Final progression free survival (PFS) analysis after 2 years showed mPFS of 35.65 mo (Isa-Kd) vs 19.15 mo (Kd). Here, we report the final overall survival (OS) from IKEMA planned 3 years after the primary PFS analysis. **Methodology:** Pts with 1–3 prior lines of therapy were randomized 3:2 to receive Isa-Kd (n=179) or Kd (n=123). Treatment (tx) was given until progressive disease, unacceptable toxicity, or pt wish. Safety was assessed in all treated pts. **Results:** As of 7 Feb 2023, 23.5% (Isa-Kd) and 5.7% (Kd) pts were on tx. Median follow-up: 56.61 mo. OS benefit was more in Isa-Kd pts (mOS was NR; [95% CI: 52.172–NR] vs 50.6 mo [95% CI: 38.932–NR]; HR: 0.855; nominal one-sided p=0.1836). Isa-Kd had longer TTNT vs Kd (median 43.99 vs 25.0 mo; nominal one-sided p=0.0002), as was PFS2 (median 47.18 vs 32.36 mo; nominal one-sided p=0.0035). The safety profiles were comparable to interim and final PFS analyses. Grade ≥3 TEAEs: 84.2% (Isa-Kd) vs 73.0% (Kd). **Conclusion:** This final OS analysis shows a meaningful trend for OS benefit with Isa-Kd vs Kd despite subsequent tx with anti-CD38 agents, introduction of tx with novel mechanism of action among further therapies, and the COVID-19 pandemic. Improvements in TTNT and PSF2 were observed and sustained PFS benefit still observed at PFS2. The Isa-Kd safety profile was consistent with previous analyses, supporting it as a standard-of-care therapy for relapsed MM pts.

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OP 05

REAL-WORLD (RW) TREATMENT PATTERNS AND OUTCOMES IN PATIENTS (PTS) WITH RELAPSED/REFRACTORY MULTIPLE MYELOMA (RRMM) WITH AT LEAST ONE PRIOR THERAPY IN TURKEY

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Objective: Data on RW treatment patterns and outcomes in RRMM Pts who received at least one prior line of therapy (LoT) are lacking outside the US and Europe. This study evaluated RW clinical characteristics, treatment patterns, and outcomes among Turkish Pts who received at least one prior MM-specific therapy. **Methodology:** This retrospective chart review included RRMM Pts who had received at least one prior LoT and initiated a second-line (2L) or third-line (3L) MM-specific treatment regimen between 01-Jan-2015 and 31-Dec-2020. Patients' demographics and clinical characteristics, treatment patterns, and overall survival (OS) were evaluated. **Results:** Of the 107 RRMM Pts initiating 2L treatment, 91.6% experienced symptomatic disease [prominent symptoms: anemia (71.0%); bone lesions (53.3%)]. Table 1 presents other clinical and demographic characteristics. Bortezomib (BOR)-based regimens were most used in first-line (1L) regardless of stem-cell transplant (SCT) status (SCT induction: 68.7%; non-SCT: 79.5%), and lenalidomide (LEN-based regimens were used as 1L maintenance (40.3%). LEN-free regimens were used in 58.1% (2L) and 35.6% (3L) of Pts, with DVd (29.5%) and DRd (19.5%) being the most utilized regimens in 2L and 3L, respectively (Fig. 1). In total, 53.1% were LEN-retreated and 30.8% were LEN-refractory. The median (interquartile range) duration of treatment on 2L [7.0 (6.0, 10.5) months] and 3L [7.1 (6.0, 14.0) months] was short (Table 2). After 2L and 3L initiation, 57.9% and 25.6% of Pts had disease progression; median OS was 10.4 and 12.8 months, respectively (Table 3). **Conclusion:** BOR-based regimens were commonly utilized in 1L. LEN-based regimens were used as maintenance therapy in 1L and as retreatment in RRMM Pts. Newer therapies (Daratumumab- or Carfilzomib-based regimens) were utilized in 2L and 3L. The short duration of therapy, high disease progression rate, high LEN retreatment, and refractoriness rates indicate the need for new LEN-free regimens for treating RRMM Pts in Turkey.

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OP 06

URETERAL AMYLOİDOSİS: A CASE REPORT OF SUCCESSFUL MANAGEMENT WİTH SURGERY, RADİATİON, AND CHEMOTHERAPY

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Background: Ureteral amyloidosis is a unique and infrequent form of amyloidosis characterized by the deposition of amyloid proteins within the ureters. These tubes, responsible for transporting urine from the kidneys to the bladder, can become obstructed due to this protein accumulation, potentially leading to renal complications. We are presenting a case ureteral amyloidosis. **Case Report:** A 48-year-old male with no known prior medical conditions presented with a three-month history of right-sided pain, frequent and painful urination, reduced urine output, and hematuria. Blood tests showed a hemoglobin level of 12.8 g/dL and MCV of 73. Urinalysis revealed pyuria and hematuria. An upright abdominal X-ray indicated hydronephrosis, and an abdominal CT scan

detected grade 2 hydronephrosis on the right side and a suspicious mass in a 1 cm segment of the distal right ureter outside the bladder. The mass was excised, and histological examination with crystal violet and Congo red staining showed a strong positive reaction for amyloid. Immunohistochemical analysis confirmed the diagnosis of lambda light chain amyloidoma. Systemic screening for amyloid deposition was negative except for the ureter. Nine months post-operation, the patient returned with recurrent pain and oliguria. A CT scan revealed a mass at the excision site, consistent with lambda light chain amyloidoma. Considering it a recurrent disease, the patient underwent intensity-modulated radiation therapy (IMRT) with a total dose of 20 Gy in 10 fractions of 2 Gy each. Two months post-radiation, with recurring symptoms, the patient received four cycles of bortezomib-dexamethasone treatment. Post-treatment, the patient's symptoms improved, and CT imaging showed the disappearance of the mass lesion. **Conclusion:** Ureteral amyloidosis, though rare, can present with significant clinical symptoms. Early detection and a combination of surgical and medical interventions, as demonstrated in this case, can lead to symptom resolution and improved patient outcomes.

Keywords:
Amyloidosis
Ureteral Amyloidosis
Bortezomib
Surgery
Radiotherapy

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Adult Hematology Abstract Categories

Platelet Diseases
OP 07

THE ROLE OF ADAMTS13 ACTIVITY LEVELS ON DISEASE EXACERBATION OR RELAPSE IN PATIENTS WITH IMMUNE-MEDIATED THROMBOTIC THROMBOCYTOPENIC PURPURA: POST HOC ANALYSIS OF THE PHASE 3 HERCULES AND POST-HERCULES STUDIES

Johanna KREMER HOVINGA [1], Javier DE LA RUBIA [2], Katerina PAVENSKI [3], Ara METJIAN [4], Paul KNÖBL [5], Flora PEYVANDI [6], Spero CATALAND [7], Paul COPPO [8], Umer KHAN [9], Laurel A. MENAPACE [10], Ana PAULA MARQUES [11], Sriya GUNAWARDENA [10], Marie SCULLY [12]

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Objective: The management of exacerbations and disease relapse is important for patients with immune-mediated thrombotic thrombocytopenic purpura (iTTP). Severe ADAMTS13 (a disintegrin and metalloproteinase with a thrombospondin type 1 motif, member 13) deficiency during clinical remission is associated with risk of relapse and may guide prophylactic immune-modulatory therapy. We evaluated ADAMTS13 activity as a potential biomarker of exacerbation or relapse risk in the HERCULES and post-HERCULES studies. **Methodology:** This is a post hoc analysis of integrated data from the modified intent-to-treat (mITT) population of the Phase 3 HERCULES trial (NCT02553317) comparing caplacizumab and placebo (both plus standard-of-care treatment) in patients (pts) with iTTP and the 3-year follow-up post-HERCULES study (NCT02878603). ADAMTS13 activity was determined at baseline, weekly during treatment (post-TPE) and twice during follow-up. Recurrence risk was assessed according to ADAMTS13 activity, using TTP adverse event codes. **Results:** 49/144 (34%) pts in the HERCULES mITT had a recurrence during HERCULES or post-HERCULES. 140/144 pts had follow-up data after treatment end. Of these, 39 pts (28%) had a recurrence after treatment end; mean [SD] ADAMTS13 activity was 20.5% (28.7) in pts with recurrence vs 54.0% (34.9) in pts without; [P<0.0001]). ADAMTS13 activity was <20% at treatment end in 69.2% (27/39) and 27.1% (26/96) pts with/without recurrence (P<0.0001). Similar trends were seen across both treatment groups (Table). **Conclusion:** Regardless of the treatment received (caplacizumab or placebo), lower ADAMTS13 activity levels at end of treatment were associated with a higher risk of recurrence in the HERCULES and post-HERCULES studies. These data highlight the predictive value of ADAMTS13 levels on the risk of recurrence and may assist clinical decision-making in the treatment of iTTP. This content was first presented at ASH 2022 (abstract #2493).

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OP 08

EVALUATION OF VITAMIN D STATUS IN ADULT PATIENTS WITH IMMUNE THROMBOCYTOPENIA

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Objective: 25-OH-vitamin D has been demonstrated to have immunomodulatory effects in addition to maintaining calcium and bone homeostasis. Numerous autoimmune diseases have been linked to a deficiency in this nutrient. Immune cells can metabolize vitamin D and express the vitamin D nuclear receptor. In this study, we aimed to examine the relationship between vitamin D levels and adult patients newly diagnosed with ITP. **Methodology:** The methodology used for this investigation was retrospective. Our primary outcomes were the relationships between 25(OH)D value and platelet count as well as the clinical manifestations of ITP at the time of diagnosis and 25(OH)D value. We also looked at how the various factors and 25(OH)D levels correlated. **Results:** When the vitamin D levels of the patients included in the study were evaluated at the time of diagnosis of ITP; 15 (25%) had vitamin D sufficiency, 15 (25%) had vitamin D insufficiency, 30 (50%) had vitamin D deficiency. There was no statistically significant difference between the median ages of the patients in all 3 groups. In the group with sufficient vitamin D level, male gender was observed more than female gender (p:0.001). **Conclusion:** When we compared the vitamin D levels of the patients according to their response to first-line treatment, no significant difference was found in terms of vitamin D levels in patients who did not respond to treatment, who responded partially, and who responded completely (p:0.32). Similarly, no significant difference was found between response to second-line treatment and vitamin D levels (p:0.16). There was no statistically significant difference in vitamin D between relapsed and non-relapsed

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OP 09

CHANGES IN MUCOSA-ASSOCIATED INVARIANT T CELLS (MAIT), ASSOCIATED CYTOKINES, AND MR-1+ CELL NUMBER AND PHENOTYPE IN THE PERIPHERAL BLOOD OF PEDIATRIC ITP PATIENTS WITH AND WITHOUT ELTROMBOPAG THERAPY

Ahmet Eken [1], Metin Çil [2], Zehra Busra Azizoglu [1], Ramazan Üzen [1], Nazly Najat ASAAD [1,5], Sahin CALIK [1], Koray DORTERLER [3], Enes Mehmet Turkoglu [1], Yunus Emre DOĞAN [3], Ebru Yılmaz [3], Alper Ozcan [3], Musa Karakükçü [3], Goksel Leblebisatan [4], Ekrem Ünal [3]

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Objective: Immune thrombocytopenia (ITP) is an autoimmune disease characterized by thrombocytopenia caused by the formation of antibodies against platelets. Mucosa-associated invariant T cells (MAIT), a subset of unconventional T cells present in the blood and mucosa, are activated in an MR-1-mediated manner, respond to certain infections and cytokines and produce various effector cytokines. **Case report:** In this study, changes in blood MAIT cells were investigated in pediatric ITP patients who received and did not receive Eltrombopag. Twenty healthy volunteers (n:20), 60 untreated, and 16 treated patients (with Eltrombopag) were included in the study. **Methodology:** PBMCs isolated using the Ficoll-Hypaque density gradient were stained with appropriate surface markers and subjected to flow cytometric analysis. In addition, intracellular cytokine staining was performed to measure the level of IFN-γ, IL17A, IL-22, TNF-α cytokines after PMA/Ionomycin stimulation, and all data were analyzed using FlowJo and GraphPad 8. **Results:** Independent of Eltrombopag treatment, MAIT cell absolute counts were decreased in ITP patients. CD45RO levels of the $CD8^+$MAIT subtype increased, $\alpha\beta^+$ T cells decreased, and $\gamma\delta^+$ T cell frequency increased in ITP patients. In patients, the frequency of MAIT cell-derived IFN-γ and TNF-α decreased, MR-1 expression, which is responsible for MAIT cell activation in the $CD3^-$fraction, increased, and this level decreased to the levels in healthy controls in individuals receiving Eltrombopag treatment. **Conclusion:** The low HLA-DR levels seen in CD3- cells in ITP patients reached the levels of healthy controls in the group receiving Eltrombopag. These results show that the number and activation status of MAIT cells in ITP patients change and Eltrombopag treatment modulates MAIT cell activity.

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Adult Hematology Abstract Categories

Stem Cell Transplant
OP 10

LONG-TERM OUTCOMES OF ALLOGENEIC STEM CELL TRANSPLANTATION FOR RELAPSED/REFRACTORY HODGKIN AND NON-HODGKIN LYMPHOMA: MULTI-CENTER EXPERINCE FROM TURKEY

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Objective: In this multicenter retrospective study, we evaluated the efficiency on survival and safety of allogeneic hematopoietic stem cell transplantation (allo-HSCT) in patients with relapse/refractory (R/R) Hodgkin lymphoma (HL) and non-Hodgkin lymphoma (NHL). **Methodology:** A total of 110 patients with R/R HL or NHL who underwent allo-HSCT were evaluated between July 2007 and October 2022 in 7 adult stem cell transplantation centers. The primary endpoints of this study were progression-free survival (PFS), graft versus host disease-free, relapse-free survival (GRFS) and overall survival (OS) after the allo-SCT **Results:** Forty-one (37.3%) of total patients were diagnosed with HL, 69 (62.7%) were NHL. The median age at the time of transplantation was 39,5 years (16-67) and 66 (60%) of them male. The mean follow-up time was 67,5±8.1 months and the rates of 5-years OS, PFS, and GRFS were 38.4%, 59.3% and 49.5% respectively. In multivariate analysis, OS was significantly impacted by both conditioning regimen type and acute GvHD degree. Myeloablative conditioning regimen and grade 3-4 acute GvHD had a statistically significant negative effect on OS (HR: 1.74, 95% CI: 1.02-2.98, p=.042, and HR: 2.03, 95% CI: 1.12-3.68, p=.019, respectively). Mismatch unrelated donor (HR: 3.91, 95% CI: 1.58-9.67, p=.003) and CMV reactivation (HR: 1.99, 95% CI: 1.11-3.58, p=.020) were statistically significant negative effect on GRFS. **Conclusion:** According to our results, PFS, OS, and GRFS are not impacted by the disease subtype. However, the transplantation results are affected by the conditioning regimens, donor type, acute GVHD status, and CMV reactivation

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Adult Hematology Abstract Categories

Other Diseases
OP 11

INCREASED CAROTID INTIMA MEDIA THICKNESS AS AN INDICATOR OF INCREASED CARDIOVASCULAR RISK IN PATIENTS WITH PRIMARY FAMILIAL ERYTHROCYTOSIS

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Objective: Erythrocytosis is a group of disorders frequently encountered in haematology practice. Erythrocytosis (polycythemia) is considered to be an elevated haemoglobin (Hb) and/or haematocrit ratio (Hct) in peripheral blood. This ratio is defined as an Hb value >16.5 g/dL in males and >16.0 g/dL in females and an Hct value >49% in males or >48% in females. Erythrocytosis is basically divided into primary and secondary according to EPO (Erythropoietin) level. Both groups are divided into hereditary and acquired forms. EPO level is normal in the primary form. Primary Familial Erythrocytosis (PFE) form often includes EPO mutations (germline mutations). Mutations in EPO receptors result in increased erythrocyte production despite physiological EPO levels. It is inherited and often has a family history of early cardiovascular and cerebrovascular disease events. Primary acquired polycythaemia is Polycythaemia Vera, which includes (somatic mutations; clonal) (JAK2 mutations). Here JAK mutations have mutations of the JAK2V617F or Exon 12 region. It is a chronic myeloproliferative disease involving the bone marrow with the risk of leukaemia and myelofibrosis. The basic rule in secondary causes is increased EPO levels. Secondary inherited type includes germline mutations (VHL, EGLN1, EPAS) and methaemoglobinaemia. Acquired secondary polycythaemia is mainly due to hypoxic causes. In this group of patients, lung, cardiac, endocrine, high altitude and renal transplantation are the main causes. In the approach to polycythaemic patients in haematology outpatient clinics, patients are followed up with intermittent phlebotomies unless the patient has P Vera, normal EPO and JAK mutation. There is no common follow-up and treatment integrity for this group of patients including our study. Although PFE does not have the risk of haematological malignancy, cardiac and cerebral events at an early age are common in family members in the anamnesis of patients. In line with this result, we wanted to evaluate the possible cardiovascular risk in patients in the PFE group and measured carotid intima-media thickness (CIMT) with high-resolution B-mode carotid ultrasonography, which is known to be a suitable method for detecting subclinical atherosclerosis. Our study was

supported by TUBITAK with 1002 programme code and 215S524 project number. Increased CIMT is an indicator of atherosclerosis and increased risk of cardiovascular disease. In our study, we found that CIMT measurements were increased in PFE patients compared to the control group. With this result, we think that subclinical atherosclerosis is increased in these patients. Our aim is to ensure that increased cardiovascular risk in this group of patients and their family members should be taken into consideration and examined more closely. **Methodology:** The study included 64 polycystic patients admitted to Namık Kemal University Medical Faculty Haematology outpatient clinic. Hb levels above 16.5 g/dL in males and 16 g/dL in females were considered polycythaemic. Patients with normal EPO levels and JAK2 analyses (-) were considered as PFE. As a control group, 29 healthy subjects with normal Hb levels were included in the study. Patients with high EPO levels and JAK2 analyses (+), known malignancy and active infection were excluded from the study. CIMT measurements were performed in the supine position with their heads tilted backwards after resting for 15 min. The right and left carotid arteries were imaged by an experienced cardiologist using a high-resolution B-mode ultrasound device (GE Vivid S5: General Electric VingMed Systems, Horten, Norway) with a 12L-RS broadband linear transducer. Right and left common carotid arteries were visualised in the longitudinal plane. The measurements were made manually by determining a 1cm segment 2 cm below the carotid bulb. 3 measurements were averaged. Carotid plaques were not included in the measurement. **Results:** IMTs of the patients were determined as follows. Both CIMT were found to be higher in the patient group. Significant carotid intima media thickness was found in the patient groups compared to the control group. This difference was detected in both carotid arteries. **Conclusion:** Cardiovascular and cerebrovascular events are common in family members of PFE patients, especially with male predominance and sudden death occurring at a young age. Although PFE patients have increased cardiovascular risks, they are often not followed up closely enough from a cardiac point of view in outpatient clinics. Mutations defining PFE are not frequently used in clinical practice. These mutations are mostly found in the 8th exon of the EPO receptor gene. However, since the frequently defined mutation cannot be demonstrated in many cases, the term idiopathic familial polycythaemia is used instead of PFE in some sources. Studies have shown that cardiac load will increase due to increased viscosity as a result of increased erythrocyte mass and endothelial dysfunction will occur due to increased shear stress in the endothelium. An increase in CIMT is an early indicator of subclinical atherosclerosis. As a result of our study, we found that the increase in CIMT, which is an indicator of increased cardiovascular risk, was significantly and statistically significantly increased in the patient group compared to the control group in B mode ultrasond measurements. PFE patients require combined follow-up in haematology and cardiology outpatient clinics. We believe that family investigations are important for the protection of future generations. We think that it is important to screen family members in PFE patients beyond defining a possible risk of cardiovascular disease only in the patient himself/herself in order to prevent complications that may occur in the future and for preventive medicine.

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OP 12

OUTCOME OF APLASTIC ANEMIA ACCORDING TO DISEASE SEVERITY

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Objective Background: Aplastic anemia is pancytopenia with a hypocellular bone marrow [<25 % (or 25 to 50 % if <30 % of residual cells are hematopoietic)] due to failure of the bone marrow in the absence of marrow fibrosis or abnormal infiltrates. For therapeutic guide, the disease is classified into moderately severe, severe and very severe aplastic anemia depending on the degree of cytopenia .Accordingly, patients with severe or very severe forms are started on therapy urgently while patients suffering from non-severe AA are treated conservatively with as needed PRBCs, platelets and growth factors support. Allogenic Hematopoietic stem cell transplantation is the standard of care for young patients with severe AA. **Aims:** Survival following allogenic Hematopoietic stem cell transplantation or immunosuppressive therapy were compared in aplastic anemia according to severity and the prognostic factors related with survival identified. **Methodology:** This is a retrospective study of 156 patients with AA. The outcome of these patients were first analyzed according to the first-line treatment received (SCT vs. IST with no subsequent transplant). The outcome was further stratified based on their risk stratification into moderate, severe, and very severe. Patient's characteristics were summarized using frequencies with percentages for categorical variables and medians with interquartile ranges for continuous data. Probabilities of OS and EFS were summarized using Kaplan-Meier estimator. Survival curves were compared using log-rank test. P-value< 0.05 was considered significant. Analysis was conducted using RStudio 2022.07.2 Build 576 © 2009-2022 RStudio, PBC. **Results:** A 156 patients, 92 (59%) were treated with SCT and 64 (41.0%) with IST. 24(15.4%) patients were moderately severe AA, 56 (35.9%) severe AA and 76 (48.7%) very severe AA. Overall survival was 83.7 % in the allogenic hematopoietic stem cell transplantation and 78.8 % in patients given immunosuppressive therapy front-line group (P=0.4).In both group overall survival was 97 % for moderately severe AA, 82 % for severe AA and 77 % for very severe AA. In the allo-SCT cohort, under multivariate analysis, Overall survival for moderately severe, severe and very severe aplastic

anemia was 66.0%, 81.4% and 86.3 % respectively (P=0.5). While, in IST group OS for moderately severe, severe and very severe aplastic anemia was 93.8%, 86.6% and 56.1 % respectively (P=0.005). Age of 20 years or under positively affected overall survival in allogenic hematopoietic stem cell transplantation group, whereas age more than 20 years negatively affected overall survival in this group. The factors influencing the overall survival were use of allo-SCT, an age under 20-years-and moderately severe AA. **Conclusion:** Aplastic anemia in adolescents has a very good outcome. If a matched sibling donor is available, Hematopoietic stem cell transplantation is the first choice treatment. If such a donor is not available, immunosuppressive treatment may still be an acceptable second choice also because, in case of failure, hematopoietic stem cell transplantation is a very good rescue option. Use of SCT, age of < 20 years in sever AA and IST in non-severe AA were favorably associated to OS. Therefore, younger age SAA patients, with HLA-matched donors, may benefit more from allo-SCT.

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OP 13

GLOBAL RESEARCH PATTERNS ON BLOOD DONOR DEFERRAL: AN ANALYSIS OF THEMES, TRENDS, AND INFLUENCE

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Background: Blood banking relies heavily on deferral policies for safety. Recognizing current academic themes can highlight research opportunities, encourage collaboration, ensure funding, understand audience interests, steer public sentiment, and inspire productive competition, thereby prompting impactful studies. **Materials and Methods:** We analyzed 1034 blood deferral papers from Web of Science and Scopus, focusing on publication count, uniqueness, timeline, and themes like Men who have Sex with Men (MSM), HIV, COVID-19, anemia, and machine learning. We also assessed the global distribution of these studies to understand prevalence and associations with geography, demographics, and economic factors. Results and Conclusions: The study uncovered 1037 articles; MSM (107), HIV (234), Anemia (201), COVID-19 (40), and machine learning (59). Most papers were from the US, UK, Canada, reflecting their robust research capabilities. The US led in HIV and anemia studies, with India significantly contributing to anemia research. India led in COVID-19 studies, with substantial participation from the US. Machine learning research primarily came from the US and India, with significant Chinese contributions. The trending literature on blood deferral underscores the need to comprehend evolving blood banking dynamics. Machine learning, with its transformative capacity, is a prime research area. These insights could guide future studies and policymaking, maintaining blood safety.

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OP 14

UNUSUAL PRESENTATİON OF RHABDOMYOSARCOMA WİTH BONE MARROW INVOLVEMENT AND CERVİCAL MASS: A 17-YEAR-OLD FEMALE CASE REPORT

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Background: Rhabdomyosarcoma (RMS) is a rare type of cancer that originates in the skeletal muscle cells. It's most commonly found in children but can occur at any age. The cancer is characterized by the presence of cells that resemble immature muscle cells, and it can grow and spread rapidly. Rhabdomyosarcoma (RMS) is a rare cancer that originates in skeletal muscle cells and can be found in various parts of the body, including the head and neck, genitourinary tract, extremities, and other less common areas such as the trunk and retroperitoneum. Bone marrow infiltration in Rhabdomyosarcoma (RMS) is a relatively rare occurrence. We are presenting a case Rhabdomyosarcoma with Bone Marrow Involvement and cervical Mass. **Case Report:** A 17-year-old female patient with no known previous illnesses presented to an external center with complaints of coughing, difficulty swallowing, weight loss, and fatigue that had begun a month prior. During a physical examination, a 2 cm mass was observed in the left cervical region, along with an enlarged appearance of the thyroid gland. Complete blood count revealed hemoglobin at 10.6 g/dL, leukocytes at 1000 mm3, neutrophils at 200 mm3, and platelets at 70000 mm3, leading to a referral to a hematology clinic. Upon repeated observation of pancytopenia, early myeloid precursors were seen in a peripheral smear. Due to a high suspicion of lymphoma, a bone marrow biopsy was performed, revealing widespread mononuclear cell infiltration. Immunohistochemical analysis showed desmin(+), myogenin (+), and Ki67 80% positivity, leading to a diagnosis of rhabdomyosarcoma. A PET-CT scan to determine the extent of the

disease revealed multiple involvements in the bone and lungs. Treatment with Vincristine, doxorubicin, cyclophosphamide, and dexamethasone was initiated, resulting in a significant regression of the masses and an improvement in the cytopenia picture. **Conclusion:** The presence of RMS in the bone marrow can complicate both the diagnosis and treatment of the disease. It may require additional diagnostic procedures, such as bone marrow biopsy, to confirm the presence of RMS cells. Treatment may also need to be more aggressive, approaches. Bone marrow involvement in RMS is considered a more advanced stage of the disease and may be associated with a more challenging prognosis. Early detection and tailored treatment are crucial for managing RMS with bone marrow infiltration.

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OP 15

NEW MOLECULAR TARGETS IN CANCER CELL BIOENERGETIC PATHWAYS

Tyumin Ivan [1]

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Research Supervisor: L.Y. Grivtsova, PhD in medical science, PhD in biology science, Head of Laboratory Medicine Department, Head of Clinical Immunology Laboratory of A.F. Tsyba MRSC, a branch of the Federal State Budgetary Institution "NMRC of Radiology" of the Ministry of Health of the Russian Federation Over the last ten years, the ideas of molecular oncology about the energy metabolism of malignant cells have changed dramatically, and new molecular mechanisms in the cascade pathways of cancer bioenergetics are being searched for. Numerous data show that the emergence and development of tumors are closely related to the metabolism of iron ions (Fe). Inorganic substrates, namely iron ions involved in the metabolic processes of the tumor cell, have received limited attention in the world literature to date. Our research group has put forward and is developing the concept of «Energy metaplasia of cancer cells», i.e. acquisition of an additional autotrophic way of energy production (respiratory reactions involving iron ions) in the process of oncogenesis. Proof of the hypothesis opens prospects for explaining some issues of oncogenesis and a new approach to the treatment of cancer. The aim of the study: to investigate and obtain evidence for the existence of respiratory (chemosynthetic) reactions involving iron ions as a way to obtain energy in cancer cells. The studies were conducted on the basis of the «Center of Cell Technologies», Samara city, Russia, under the guidance of specialists from A.F. Tsyba MRSC, Obninsk city, Russia. All experiments were conducted in vitro using HeLa cell line (cervical carcinoma) and human mesenchymal stromal cell line (MSC) culture as a control. The proof-of-concept study was carried out in 3 stages. The 1st stage was analytical review, the 2nd stage - study of energy metabolism by extracellular flux analysis on the SeaHorseXFp apparatus (USA), the 3rd stage - bioinformatic study on search in the human genome for homolog genes responsible for chemosynthetic reactions using blastp and exonerate programs. As a result of the analytical review of works on the evolution of the way of energy production by plant and animal cells, a possible chemosynthetic reaction in cancer cells - oxidation of iron ions (Fe^{+2} - Fe^{+3}+E) was revealed. As a result of 50 performed protocols on SeaHorseXFp cell metabolism analyzer we found suppression of two classical pathways of energy production - oxidative phosphorylation (by 54,2%) and glycolysis (by 85,4%) in malignant HeLa culture in contrast to normal index in MSC cell culture. As a result of bioinformatic study, 6 proteins and 11 domains related to iron metabolism were found in the human genome, which are highly similar in sequence to the genes responsible for chemosynthetic reactions involving iron ions in iron bacteria. Thus, respiratory chemosynthetic reactions involving iron ions are possible in malignant cells, which allows the cancer cell to change its energy phenotype and acquire an additional autotrophic way of energy production, allowing it to acquire the properties of uncontrolled growth and metastatic spread. This molecular cascade requires additional study and is of interest as a target for the development of targeted antitumor drugs.

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Pediatric Hematology Abstract Categories Coagulation and Fibrinolysis Disorders
OP 16

THE COEXİSTENCE OF NOVEL MUTATİONS OF FX, DİMETHYLGLYCİNE DEHYDROGENASE GENES WİTH FAMİLİAL EPİSODİC PAİN SYNDROME: A CASE REPORT

Hatice Mine Çakmak [1]

[1] *Duzce Unıversıty*

Objective: Congenital Factor X (FX) deficiency is an autosomal recessive disorder with variable clinical severity associated with heterozygosis or homozygosis inheritance. Genetic mutations are located on the glutamic acid domain on exon two and the catalytic site of FX on exons 7, 8. Missense mutations of specific patients or families are reported. Severe forms of the disease result from homozygosis or compound heterozygosis genetic mutations. In this case report, we aim to write a rare cause of epistaxis and novel mutations of FX and DMDGH (**Dimethylglycine Dehydrogenase)** deficiencies, and he and his family are the second with TRAP1-related FEPS1 (familial episodic pain syndrome) in the World. **Case report:** A 6-year-old boy, born in Turkey, with no known

chronic medical condition, was admitted to the pediatric hematology-oncology policlinic with epistaxis lasting for approximately 10 minutes and repeating daily. The family history revealed prolonged bleeding episodes in his father, uncle, aunt, and uncles' sister. The patient denied mucosal bleeding, spontaneous bruising, or prolonged bleeding after dental extraction. The physical examination included; weight: 22 kg (50-75 p), height: 127 cm (>95 p), and regular systemic features. In addition, prolonged PT (21.1s) and normal aPTT levels were found. In his family, prolonged PT was also detected in his father (16.9s) and sister (13.7s). Factor and coagulation levels and their normal ranges consistent with age are given in Table 1. In the clinic exom study, NM_000504.4:c. 785 G>A p.Gly262Asp heterozygosis mutation on the F10 gene has a nonsynonymous_SNV effect, causing Factor X deficiency (Table 1). This mutation is a new change undefined in the Clinvar database with a DANN score of 0.988. According to the ACMG rules (PP3, PM2, PP2), this mutation is pathogenic (Figure 1). Clinic exom study revealed other mutations (Table 2) associated with the case's clinic features. For example, the patient had a fish odor and muscle tiredness associated with dimethylglycine dehydrogenase deficiency. In addition, the patient suffered from episodic pain syndrome (upper body pain after cold, physical stress, and fasting) and frequent fevers that may be associated with Immunodeficiency and TNFRS13B mutation. Episodic pain syndrome was common in the patient's father's family (uncle, uncle's sister, aunt, grandfather, aunt, and aunt's three children) (Figure 2). However, the diagnosis of immune deficiency is not defined in his family. Family segregation mutation analyses are under study. **Results:** Factor X deficiency is a rare coagulation disorder. The clinic severity differs according to the genetic mutations generally localized to the glutamic domain exon 2 [(1)]. Gokcebay et al. represented an infant with a homogenous FX gene mutation in Exon2 (Gly51Arg) with an FX serum level of 0.03 U/ml. This infant had umbilical cord bleeding and cephalic hematoma and received fresh frozen plasma and activated prothrombin complex concentrate (aPCC). PT (INR) was elevated only[(5)]. Nagaya et al. reported Four heterozygous mutations [p.Gly154Arg, p.Val236Met, p.Gly263Val, and p.Arg387Cys] and a compound heterozygous FX gene mutation (p.Gly406Ser and p.Val424Phe) were identified [(6)]. Another case report showed that a heterozygous nonsense mutation in the F10 gene led to prolonged vaginal bleeding after polypectomy [(7)]. In neonates, FX levels <10% may cause severe bleeding like CNS, gastrointestinal, hematomas, and hemarthroses. In addition, severe deficiency may cause epistaxis and menorrhagia. The results of the EN-RBD study showed a variable target level of 10% to 20% up to 40% to prevent bleeding. In addition to fresh frozen plasma, Apcc, FIX/FX, and FX concentrates are available to treat FX deficiency. Doses of treatment and schedules differ according to the surgery preparation, prophylaxis, or bleeding. Tranexamic acid is preferred for menorrhagia, nosebleeds, presurgery, and surgery to prevent excessive factor administration (8,9). Our study showed mild FX deficiency with a nucleotide protein change of NM_000504.4:c.785 G>A p. Gly262Asp, and a novel mutation of FX deficiency. Recurrent epistaxis episodes were controlled with a nasal tampon. We plan to administer tranexamic acid for uncontrolled nasal bleeding. In trauma and surgery, fresh frozen plasma and concentrates are the treatment options. Familial non-inflammatory pain syndromes (FEPS) are divided into three groups; only one reported family has TRAP1-related FEPS1 syndrome. The predisposing factors for FEPS3 in children are cold, fatigue, hunger, and the rainy season. Pain mainly occurs in the afternoon or at night; paroxysmal pain lasts for tens of minutes, then relieves, and then starts again after a short interval. Unlike FEPS3(cardiac ion channel disease and congenital myotonia), caused by the SCN11A mutation with pain in the distal limbs, TRAP1-related FEPS1 syndrome has pain symptoms in the upper body with autonomic symptoms. Currently, there is no specific drug for treating familial paroxysmal pain syndromes. The primary treatment is to use analgesics, keep warm, and avoid cold environments. Here, we report the second family with TRAP1-related FEPS1 syndrome. The pain is in the upper body, similar to his family [(10)]. Dimethylglisin dehydrogenase deficiency, as fish odor syndrome, is a likely benign condition with mild muscle involvement [(11)]. We report a novel variant consistent with the clinical situation, a heterozygotic stop gain, NM_013391.3:c.972 G>A p.Trp324 mutation, defined as pathogenic/VUS/likely benign. **Conclusion:** This is the first report of F10, DMGDH novel mutations, and the coexistence of TRPA1 (clinic was compatible) and TNFRSF13B with a need for investigation for immunodeficiencies in a child. In conclusion, this is the first patient with two novel mutations for FX and DMDGH deficiencies, and his family is the second with TRAP1-related FEPS1 syndrome in the World.

Laboratory Values (normal ranges)	Patient	Father	Mother	Sister (7 years old)
PT (s)	21.1 (10.1-12.1)	16.9 (11-14)	13 (11-14)	13.7 (10-12.1)
APTT (s)	32.6 (26-36)	27.8 (27-40)	28.7 (27-40)	26.8 (26-36)
Factor VII (%)	75.3 (65-180)	97.7 (61-127)	97.7 (65-180)	69.4 (61-127)
Factor X (%)	**20.3** (88-94)	**65.9** (70-150)	78.5 (70-150)	**69.5** (88-94)

Gen	Nucleotide Protein Change	Zygosis	dbSNP	Effect	Variant	Classification
						Disease (Dominance, OMIM#)
F10	NM_000504.4: c.785 G>A p. Gly262Asp	het	-	nonsynonymous-SNV	-	Factor X Deficiency (OR; 227600)
DMGDH	NM_000504.4: c.785 G>A p. Gly262Asp	het	rs139044238	Stop gain	Pathogenic/ VUS/Likely benign	Dimethylglisin dehydrogenase deficiency (OR;605850)
TRPA1	NM_007332.3: c.2564 A>G p.Asn855Ser	het	rs398123010	nonsynonymous-SNV	Pathogenic	Familial episodic pain syndrome (OD;615040)
TNFRSF13B	NM_012452.3: c.198 C>A p. Cys66	het	rs144718007	Stop gain	Pathogenic	Tumor Necrosis Factor Receptor Superfamily Member 13B;604907

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Pediatric Hematology Abstract Categories

Red Blood Cell Disorders
OP 17

ASSESSMENT OF VITAMIN B12 AND HOMOCYSTEINE LEVELS IN PREGNANT WOMEN ADMITTED FOR DELIVERY AND CORD BLOOD SAMPLES OF THEIR NEWBORN BABIES: A MULTICENTER STUDY

Zeynep Yildiz Yildirmak [1], Dildar Bahar Genç [1], Alev Kural [2], Veli Mihmanli [3], Suleyman Salman [4], Keziban Doğan [5], Mehmet Ali Çiftçi [2], Nazli Doktur Efeoğlu [4], Aliye Erdoğan [5], Necirvan Cagdas Caltek [3], Emre Ozgen [2], Ebru Kale [6]

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Objective: Vitamin B12, an essential micronutrient, plays a vital role in various physiological processes, particularly during pregnancy and fetal development. The growing popularity of vegetarian diets and socioeconomic barriers to consuming animal-based products contributes to Vitamin B12 deficiency becoming a global issue. Understanding the B12 status in pregnant women and its potential impact on newborns is of utmost significance as it can have far-reaching implications for both maternal and infant health. This research aims to investigate the vitamin B12 and homocysteine levels in pregnant women admitted for delivery and analyze corresponding cord blood samples from their newborn babies. **Methodology:** This prospective study was conducted in three tertiary care hospitals and included pregnant women aged ≥16 years admitted for delivery and their newborns ≥34 weeks. The demographic data and the results of complete blood counts performed within the previous 24 hours before birth were recorded. The levels of vitamin B12 and homocysteine were measured in blood samples and cord blood samples taken from pregnant women and their newborns, respectively. The study parameters were compared between the two groups based on the mothers' and babies' homocysteine and B12 levels. **Results:** The study included 615 Turkish and 217 foreign pregnant women. Anemia affected 36% of pregnant, with a higher frequency in mothers with B12 deficiency. The mean B12 level in pregnant women was 157±75.3 pg/ml, with 14.8% having elevated homocysteine levels. The levels of B12 and homocysteine of the newborns were 234.7±13.2 pg/ml and 9.13±5.75 mol/L, respectively. Vitamin B12 deficiency was found in 48.9% of newborns, while homocysteine levels were slightly elevated or elevated in 19.1%; both findings were significantly more common in babies born to B12-deficient mothers. **Conclusion:** In our study, vitamin B12 deficiency was significant in pregnant mothers and their neonates, with a substantial connection to cord blood homocysteine levels. Further study is needed to determine the impact of this deficit on mother and newborn health. Implementing approaches to timely detecting Vitamin B12 deficiency and, if necessary, providing adequate Vitamin B12 supplementation during pregnancy could play a pivotal role in enhancing the health and well-being of both the mother and the child.

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OP 18

A GHOSAL HEMATODIAPHYSEAL DYSPLASIA CASE; EXCELLENT RESPONSE TO NON-STEROIDAL ANTI-INFLAMATORY DRUG TREATMENT

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Objective: Ghosal hematodiaphyseal dysplasia (GHDD) is a very rare autosomal recessive disease caused by prostaglandin metabolism disturbances due to biallelic mutations on chromosome 7q33-34 which lead to decrease in thromboxane synthase function. Previously long-term corticosteroid was the only treatment for GHDD. Currently, non-steroidal anti-inflammatory drugs (NSAIDs) as a targeted therapy are preferred alternatively. Here, a genetically confirmed GHDD case responsive to ibuprofen is presented. **Case report:** A 9-year-old girl presented to our clinic with severe normocytic anemia, swelling, and pain in her lower limbs. In physical and radiologic examination metadiaphyseal dysplasia was diagnosed. The diagnosis of GHDD was confirmed with genetic analysis. The patient was treated with ibuprofen (30 mg/kg/day) with excellent response to both pain and hematologic parameters in 15 days period. **Conclusion:** Ghosal

hematodiaphyseal dysplasia is a very rare disease. The patients manifest with metadiaphyseal dysplasia, severe anemia, chronic fatigue, and inflammation. Previously long-term corticosteroid was the only treatment for GHDD with multiple significant long-term complication risks. NSAIDs, in this case, ibuprofen, are the current and new treatment options with relatively safe side effect profiles. But only a few cases with short-term follow-up were reported in the literature.

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OP 19

THE SIGNIFICANCE OF NEXT-GENERATION SEQUENCING IN NON-IMMUNE HEMOLYTIC ANEMIAS AMONG NORMOCHROMIC-NORMOCYTIC ANEMIAS

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Objective: Next-generation sequencing studies increased the exact diagnosis of unexplained normochromic-normocytic anemias and other anemias. Targeted next-generation sequencing studies allow the diagnosis of cytoskeleton defects, atypical cases, and some enzyme deficiencies. We aimed to compare the children with non-immune hemolytic anemia (n=13), and the others without non-immune hemolytic anemia (n=19) in the means of demographics, diagnosis, detected mutations, and laboratories. **Methodology:** In this study, the children who were examined in the Pediatric Hematology-Oncology Clinic of Duzce University School of Medicine and had unexplained anemia (n=29) underwent next-generation studies. The demographics, laboratory values, and genetic findings of two groups (non-immun hemolytic anemia and the others) were compared. We also found two novel mutations, one with hereditary spherocytosis and one with hereditary elliptocytosis. Mean, standard deviation, median minimum, maximum, frequency and ratio values were used in descriptive statistics of the data. The distribution of variables was measured with the Kolmogorov-Simirnov test. Independent sample t test and mann-whitney u test were used to analyze quantitative independent data. The chi-square test was used to analyze qualitative independent data. SPSS 28. 0 program was used in the analysis Results **Conclusion:** The demographics and the laboratory results are explained in Table 1. Comparing the non-immune hemolytic anemia patients (n=13) with the others (n=19), we found that membrane disorders rates, identified mutations associated with anemia, mean cell volume, mean cell hemoglobin, thrombocyte, reticulocyte, and absolute reticulocyte levels were higher, hemoglobin and erythrocyte levels were lower in the non-immun lower in the non-immune hemolytic anemia group (Table 2). The novel mutations are shown

Table 1) Demographics of the patients with unexplained anemia

		Min-Max.	Median	Mean.±s.d./n-%
Age (years)		0.1 - 17.0	0.1	5.3 ± 4.8
Age at onset of symptoms (years)		0.0 - 17.0	0.0	2.1 ± 4.2
Gender	Girl			9 6.8%
	Boy			23 17.4%
Nonimmune Hemolytic Anemia (+)	(+)			13 9.8%
	(-)			19 14.4%
Nonimmune Hemolytic Anemia (+)	(-)			22 16.7%
	(+)			10 7.6%
Identified Anemia Mutation	(-)			29 22.0%
	(+)			3 2.3%
Other defined mutations	(-)			23 17.4%
	(+)			9 6.8%
Enzyme Deficiency	(-)			27 20.5%
	(+)			5 3.8%
Erythrocyte count (10^9)		1.7 - 4.6	1.7	3.3 ± 0.9
Hct (%)		14.7 - 38.0	14.7	27.9 ± 6.3
Hb (g/dl)		4.7 - 27.0	4.7	9.9 ± 3.7
MCV (fL)		14.7 - 111.0	14.7	84.3 ± 15.8
MCH (pg)		22.0 - 97.0	22.0	30.6 ± 12.6
MCHC (g/dl)		30.0 - 36.1	30.0	32.9 ± 1.5
RDW (%)		10.9 - 21.7	10.9	15.1 ± 2.6
Thrombocyte count (x10^3/ml)		94.0 - 567.0	94.0	354.1 ± 112.2
Reticulocyte (%)		0.1 - 23.7	0.1	3.9 ± 5.7
Adjusted reticulocyte count (%)		0.0 - 12.7	0.0	2.8 ± 3.3
Transfusion rates (/yıl)		0.0 - 4.0	0.0	0.6 ± 1.3
Total bilirubin (mg/dl)		0.0 - 14.0	0.0	4.0 ± 4.9
İndirect bilirübin (mg/dl)		0.0 - 13.2	0.0	2.8 ± 4.1
Ferritin (ng/ml)		14.5 - 1392.0	14.5	192.0 ± 315.8

Abbreviations: Hct: Hematocrite, Hb: Hemoglobin, MCV: Mean cell volüme, MCHC: mean cell hemoglobin concentration, RDW: red cell distribution width

Table 2) Comparing the children with versus without non-immune hemolytic anemia

		non-immune hemolytic anemia (+)		non-immune hemolytic anemia (-)		p	
		Mean.±SD/n-%	Median	Mean.±SD/n-%	Median		
Age (years)		5.1 ± 6.2	1.5	5.4 ± 3.9	5.0	0.247	m
Age at onset of symptoms		2.4 ± 5.7	0.0	1.9 ± 3.0	0.0	0.544	m
Gender	Female	6 46.2%		3 15.8%		0.061	X^2
	Male	7 53.8%		16 84.2%			
Immun hemolytic anemia	(-)	6 46.2%		16 84.2%		**0.023**	X^2
	(+)	7 53.8%		3 15.8%			
Identified anemia mutation	(-)	10 76.9%		19 100%		**0.028**	X^2
	(+)	3 23.1%		0 0.0%			
Other defined mutation	(-)	9 69.2%		14 73.7%		0.783	X^2
	(+)	4 30.8%		5 26.3%			
	(+)	3 23.1%		2 10.5%			
Erythrocyte (10^2/ml)		2.9 ± 0.8	3.2	3.5 ± 0.9	3.7	**0.030**	m
Hct (%)		26.2 ± 6.4	28.0	29.0 ± 6.1	29.8	0.234	m
Hb (g/dl)		8.6 ± 2.1	9.2	10.8 ± 4.3	10.2	0.058	m
MCV (fL)		90.8 ± 9.5	90.0	79.9 ± 17.9	82.0	**0.021**	m
MCH (pg)		35.1 ± 18.9	30.6	27.6 ± 3.2	27.0	**0.030**	m
MCHC (g/dl)		33.0 ± 1.7	32.6	32.9 ± 1.4	32.6	0.835	t
RDW (%)		15.4 ± 3.5	14.0	15.0 ± 1.8	15.0	0.673	m
Thrombocyte (x10^3/ml)		412 ± 104	384	314 ± 102	314	**0.013**	t
Reticulocyte (%)		6.6 ± 7.1	3.2	1.1 ± 0.6	1.2	**0.001**	m
Adjusted reticulocyte count (%)		4.4 ± 4.0	2.3	0.9 ± 0.4	1.0	**0.001**	m
Transfusion rates (/year)		0.9 ± 1.6	0.0	0.2 ± 0.6	0.0	0.150	m
Total bilirübin (mg/dl)		4.8 ± 4.7	3.3	3.2 ± 5.1	0.4	0.124	m
İndirect bilirübin (mg/dl)		4.0 ± 4.6	2.3	1.5 ± 3.0	0.2	0.065	m
Ferritin (ng/ml)		295 ± 186	236	144 ± 356	23	**0.005**	m

Abbreviations: Hct: Hematocrite, Hb: Hemoglobin, MCV: Mean cell volüme, MCHC: mean cell hemoglobin concentration, RDW: red cell distribution width, [t]t test / [m] Mann-whitney u test / X^2 Ki-kare test

Patient	Gen	Nucleotide Protein Change	Zygosis	dbSNP	Effect	Variant Classification	Disease (Dominance, OMIM#)
1	ANK1	NM_001142446.2:c.747 C>G p.Tyr249*	het	-	stop gain	-	Sferocytosis type 1; AD:18900
1	SPTB	NM_001024858.3:c.4891 C>T p.Arg1631Cys	het	rs372503030	nonsynonymous-SNV	VUS	Spectrin Beta Erythrocytic; 182870)
2	SPTB	NM_001024858.3:c.4 355C>T p.Ala1452Val	het	rs768609633	nonsynonymous-SNV	VUS	Spectrin Beta Eritrocytic; 182870

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Pediatric Hematology Abstract Categories

Immunodeficiencies / Neutrophil Diseases
OP 20

A NEXT-GENERATION SEQUENCING TEST FOR CONGENITAL NEUTROPENIA IN PEDIATRIC PATIENTS

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Objective: Congenital neutropenia (CN) is a rare inherited hematological disease and its phenotypic, histologic and molecular aspects are heterogeneous. Congenital neutropenia can manifest as isolated neutropenia or neutropenia with extra-hematopoietic abnormalities, immunodeficiency or metabolic diseases and results in recurrent, life-threatening bacterial infections. Mutations in more than 20 genes have been demonstrated to cause CN, some of which cause complex phenotypes. **Case report:** Usually caused by ELANE mutations although mutations in other genes like HAX-1, G6PC3, and GF11 have also been reported. Identifying the causative mutation aids in the diagnosis and ruling out other secondary causes of neutropenia. In this study we aimed to identify the molecular defects in CN patients by next generation sequencing (NGS). **Methodology:** Next generation sequencing test was performed on peripheral blood specimens of 17 patients diagnosed with congenital or chronic neutropenia and bone marrow failure and hematological malignancy ruled out from January 2021- June 2023. The genes in the NGS panel were; LAMTOR2, CLPB, HAX1, USB1, SBDS, JAGN1, TAZ, ELANE, G6PC3, WAS, CXCR4, GFI1, VPS45, VPS13B. **Results:** The median age at presentation of neutropenia was 28.9 months. Mean neutrophil count at diagnosis was 380± 259/mm3. Bone marrow aspiration was performed in ten patients and myeloid maturation arrest was observed five. Granulocyte colony stimulating factor was given for seven patients and all had a response. In the NGS panel TAZ mutation was detected in one patient compatible with Barth Syndrome and VPS13 double heterozygous mutation was detected in one patient compatible with Cohen Syndrome. **Conclusion:** Considering the heterogeneity of CN in terms of genotypes and phenotypes expanded next generation sequencing panel would be necessary. The early onset of the disease, clinical severity and associated high risk of malignant transformation in CN strongly suggests the need for early diagnosis and therapeutic intervention.

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Pediatric Hematology Abstract Categories

Leukemia
OP 21

BK-VIRUS INFECTIONS IN PEDIATRIC LEUKEMIA PATIENTS DURING LEUKEMIA TREATMENT

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Objective: Polyoma BK virus (BKV) infection/reactivation is an important underlying condition that provokes hemorrhagic cystitis (HC) in hematopoietic stem cell transplantation (HSCT) recipients. However, BKV associated infections can rarely occur in acute leukemia patients without receiving HSCT. Here we present 12 pediatric acute leukemia patients with BKV infection during leukemia treatment. **Methodology:** Between September 2019 and July 2023, in Ankara Bilkent City Hospital, BKV by quantitative polymerase chain reaction (PCR) detected in the urine of 12 pediatric leukemia patients who had not got HSCT but receiving intensive chemotherapy. The clinical characteristics of these infections were retrospectively evaluated. **Results:** Ten of the 12 patients had acute lymphoblastic leukemia (ALL). Seven of the 10 ALL cases were T cell ALL. Ten of the patients were male and 10 of the patients' age were 10 years and older. Eleven patients experienced HC and one patient had epididymitis. The copy number of BKV varied between 470 to 1.3 trillion /mL. Seven patients had got treatment ranging from hydration, ciprofloxacin to bladder irrigation. Except a refractory T cell ALL patient, all of the patients had clinical improvement. **Conclusion:** Although it is a major complication of HSCT and solid organ transplantation, BK virus infection can also occur in pediatric acute leukemia patients during treatment. As in HSCT recipients, male gender and older age seems as risk factors in leukemia patients. Due to complete loss of virus specific T lymphocytes, T cell ALL patients may be more prone BK virus activation.

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OP 22

MOLECULAR CHARACTERISTICS AND TREATMENT RESPONSE TO COG ALL PROTOCOL IN CHILDREN; A 16-YEAR SINGLE-CENTER STUDY

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Objective: Acute Lymphoblastic Lekumia is the most prevalent cancer type in children. While most data from Turkey primarily focuses on BFM protocols, our study uniquely concentrates on the COG ALL protocols. In this study we aimed to analyze the molecular characteristics and outcomes of the patients diagnosed with ALL who were treated at the Pediatric Hematology and Oncology department of Acıbadem Mehmet Ali Aydınlar University Faculty of Medicine, Altunizade Hospital. **Methodology:** We have reported all the cases that have achieved complete treatment of ALL. Patient risks were assessed by diagnosis, demographics, and clinical settings, followed by protocol selection. Analysis of risk stratification involved immunophenotyping, and genetic characteristics. **Results:** 46 patient participated in the study. Standard risk, high risk and very high risk was observed in 60.5%, 27.9% and 11.6% patients respectively for B ALL and all T-ALL patients were admitted to the high risk group. 28.3% had negative prognostic genetic mutations. At the end of the induction therapy (At the 29th day), 80.4 % of the patients had MRD level below 0,1%. Mean survival time was 71,6 months. 4,3% of patients had bone marrow relapse, and after second-line treatment, are now relapse free. **Conclusion:** This study assesses the pediatric ALL patients treated with COG protocols from Turkey in a single center over a span of 16 years. Follow up processes and therapy responses taking into consideration their demographical characteristics, clinical attributes, genetic profiles, complications and outcomes. COG ALL Protocols in Turkey are being used only by the COG international corresponding members and are as promising as the BFM protocols.

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Pediatric Hematology Abstract Categories

Inherited Bone Marrow Failure Diseases

OP 23

INVESTIGATION OF SALİVARY MIR-9 AND SERUM CIP2A LEVELS IN FANCONI ANEMIA PATIENTS AT HIGH RISK OF DEVELOPING ORAL SQUAMOUS CELL CARCINOMA

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Objective: Fanconi anemia (FA) is a rare bone marrow failure syndrome caused by mutations in DNA repair genes, and the risk of developing Oral Squamous Cell Carcinoma (OSCC) in FA patients is higher than in the normal population and is seen at younger ages. mi-RNAs and proteins associated with signaling pathways such as PI3K and Wnt, which play a role in cancer pathogenesis, are important biomarker candidates for OSCC development. Tumor suppressor miR-9 have been reported that abnormally expressed in many different cancers and OSCC. Cancerous inhibitor of protein phosphatase 2A (CIP2A) is a characterized human oncoprotein that has been studied in the most of human malignancies. Squamous cell cancers frequently develop in FA patients. Therefore, in this study, we aimed to evaluate the salivary miR-9 and serum CIP2A levels of our FA patients who are likely to develop cancer, and to evaluate them in terms of the risk of developing OSCC and compared them with the healthy control group. **Methodology:** Saliva and serum samples were collected from 25 OSHK patients, 24 FA patients and 40 healthy volunteers, and total RNA was isolated from saliva samples and quantitative Real-Time PCR was performed with the miRCURY LNA miRNA PCR Assay (Qiagen, Hilden, Germany). miR-9 saliva levels were normalized and calculated by the Livak Method. ELISA (Bioassay Technology Laboratory, Shanghai, PRC) method was used to measure serum CIP2A levels. **Results:** According to our data, salivary miR-9 levels of both OSCC and FA patients were lower than healthy controls (p=0,01 and p=0,017). In OSCC patients, miR-9 level was related to lymph node metastasis (p=0,04). Serum CIP2A levels in OSCC patients and were higher than in healthy controls (p<0,001). **Conclusion:** Our findings indicate that miR-9 and CIP2A may be remarkable biomarkers in the development of OSCC. Since FA patients have a high risk of developing OSCC, close follow-up of the physical examination findings of miR-9 and CIP2A levels can be beneficial.

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Pediatric Hematology Abstract Categories

Stem Cell Transplantation
OP 24

BUSULFAN-CYCLOPHOSPHAMIDE OR TREOSULFAN-FLUDARABINE-THIOTEPA-BASED MYELOABLATIVE CONDITIONING FOR CHILDREN WITH THALASSEMIA MAJOR, SINGLE CENTRE EXPERIENCE

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Objective: Hemoglobinopaties are the most common genetic disorder worldwide. Patients with transfusion-dependent thalassemia major (TDT) are deficient in β-globulin chain production, resulting in ineffective erytropoiesis and hemolysis. Consequently, patients with TDT suffer from primary and secondary iron overload, leading to severe organ dysfunction. In despite of significant improvements in supportive care, especially monitoring and treatment of iron overload and its complications, organ dysfunction progresses in adulthood, resulting in significant morbidity and mortality. Allogeneic haematopoietic stem cell transplantation (HSCT) is the current standart of care for patients with thalassemia major, except clinical trials on gene therapy and gene editing as alternative curative options. Despite improvements in supportive care, blood transfusions and organ damage from iron overload situation before HSCT, predict worse outcome. Recent studies have reported a rate of graft rejection of 8 to 12 % in pediatric patients with TDT undergoing HSCT. Furthermore, the role of conditioning regimen in the outcome has been extensively investigated. Busulfan, treosulfan, fludarabine, thiotepa, cyclophosphamide are common agents of the conditioning regimen for HSCT. Busulfan is an alkylating agent that is mainly eliminated through the liver. Busulfan is associated with sinusoidal obstruction syndrome, pulmonary toxicty, seizures, chronic gonadal dysfunction, and late mortality. Treosulfan is the prodrug of L-epoxybutane, a water-soluble, bifunctional alkylating agent. Treosulfan-containing regimens achieve a high rate of stable donor engraftment, reduced transplant-related mortality and low rate of GVHD. Therefore, treosulfan has been considered to replace busulfan in conditioning regimens in patients with TDT. Experience with treosulfan-based conditioning in pediatric patients is more limited than studies in adult series. However, the data has promising results. Thus, here were reported a retrospective study of patients with TDT undergoing HSCT, in which we compared those with busulfan and those with treosulfan in their conditioning regimen. **Methodology:** We retrospectively evaluated all the consecutive cases of pediatric patients underwent allogenic HSCT and busulfan-based or treosulfan-based conditioning regimens between 2015 and 2021 at Istanbul Medipol University Pediatric Bone Marrow Transplantation Unit. 47 patients were included to the study. Patients between 0 and 18 years of age that unerwent allogenic HSCT for TDT with a treosulfan or busulfan base conditioning regimen during the period of the study were included. In our center, Busulfan-Cyclophosphamide was the conditioning regimen between 2015-2017. Busulfan dose was adjusted according to patient's weight (3-15 kg: 5,11mg/kg/d; 15-25 kg: 4,9mg/kg/d; 25-50 kg: 4,1mg/kg/d; 50-75 kg: 3,3mg/kg/d; 75-100 kg: 2,7mg/kg/dd), and then recalibrated according to AUC. Cyclophosphamide dose was 50mg/kg/d, 4 days. We started using treosulfan-based conditioning in patients with any risk factor for busulfan toxicity in 2018. Conditioning regimen is; treosulfan 10-12-14 g/m^2/d (based on age) 3 days, fludarabine 40 mg/m^2/d 4 days, thiotepa 10mg/kg/d 1 day. GVHD prophylaxis was administered as ATG, methotrexate and cyclosporine. Prophylaxis of venoocclusive disease (VOD) with defibrotide was administered whether the patient had a risk factor or not. **Results:** A total of 47 patients undergoing 49 allogenic HSCT were included: 32 HSCT (65%) with busulfan and 17 (35%) with treosulfan based conditionings. Median age was 7,16 years (2,15-15,9), with no significant difference between the busulfan and treosulfan cohorts (7,9; 7,15). There were 22 (47%) girls and 25 (53%) boys. In the total study population, an HSCT was received from a matched sibling donor (MSD) by 31 patients (65%) and from a 10/10 matched unrelated donor (MUD) by 14 patients (29%). One patient had an 6/6 matched mother and one patient had a 6/6 matched father. There was a significant difference between busulfan and treosulfan cohorts: An HSCT was performed with a MSD by 26 patients (86%) in the BU-Cy group versus 5 (33%) in the TREO-FLU group. The stem cell source was bone marrow (BM) for 75% (n=37) of transplantations and peripheral blood stem cells (PBSC) for 22% (n=11). In one transplantation, both BM and PBSC were used. There was a significant difference between the groups: BM in 87% of transplantations for BU-Cy group; and 47% of transplantations in TREO-FLU group. Thirteen patients experienced acute graft versus host disease (GVHD): 8 patient with skin GVHD (17%: 5 in BU-Cy group, 15%; 3 in TREO-FLU group, 15%), 3 patients with gastrointestinal (GIS) GVDH (6%: 1 in BU-Cy group, 3%; 2 in TREO-FLU group, 11%), 2 patienst with both skin and GIS GVHD (4%, both of two were in the BU-Cy group). However, there were significant differences in donor types and stem cell sources between two groups. There are 3 patients following-up with chronic GVHD: 2 with bronchiolitis obliterans (1 in BU-Cy group and 1 in TREO-FLU group) and 1 patient with ocular GVHD (in BU-Cy group) Ten patients had VOD and all of them were in BU-Cy group (21% of whole population, 30% of BU-Cy group) .Four of 10 patients were followed-up in intensive care unit, and 3 of them had seizures therewithal. We did not have mortality due to VOD. In the total study population, primer engraftment failure number was 3 (6%: all in BU-Cy). We performed second HSCT in 2 of 3, and 1 of 3 died. Number of secondary graft rejection was 2 (4%: 1 in BU-Cy, 1 inTREO-FLU). Their bone marrow turned into TDT with normal series of granulocytes and platelets and parents did not prefer the second transplantation. Number of prolonged isolated thrombocytopenia was 2 (4%: both in BU-Cy): One had platelet recovery with eltrombopag treatment and the other died due to severe GIS GVHD. The median follow-up of all patients was 6 years (2-7 years). OS was 93,75% in the BU-Cy group and 100% in the TREO-FLU group. We had 2 transplant-related mortality: One patient was 15-year-old boy, underwent BU-Cy based allogenic HSCT

from his MSD. He had primer engraftment failure with aplasic bone marrow. The other was 12-year-old boy, underwent BU-Cy based allogenic HSCT from his MSD. He had severe GIS GVHD and prolonged isolated thrombocytopenia. **Conclusion:** Despite busulfan based conditionings used to be more common approach in pediatric patients underwent allogenic HSCT for TDT, treosulfan-based conditioning is gaining acceptance. Our retrospective study confirms the efficiacy and safety of both agents. Treosulfan, fludarabine and thiotepa seem to be appropriate for minimizing the risk of complications, particularly for VOD.

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OP 25

EFFECT OF GRAFT VERSUS HOST DISEASE PROPHYLAXIS ON THE LEUKEMIA FREE SURVIVAL IN PEDIATRIC PATIENTS WHO HEMATOPOETIC STEM CELL TRANSPLANTED FOR LEUKEMIA

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Objective: Hematopoietic stem cell transplantation (HSCT) is an important treatment modality for leukemia, the most common childhood malignancy. Graft versus host disease, one of the most important complication of transplantation, is the most important cause of morbidity and mortality. In our study, we aimed to show the effect of methotrexate doses given in transplants due to leukemia, the development of acute or chronic GVHD, on leukemia-free survival. **Methodology:** Patients who underwent HSCT due to leukemia, between April 2010-October 2020 at a pediatric transplantation unit were included in the study. Methotrexate doses given to patients; were grouped as 10mg/m^2 on day 1,3,6; 10mg/m^2 on day 1,3, 5mg/m^2 on day 6; 10mg/m^2 on day 1, 3; 10mg/m^2 on day 1 and 5 mg/m^2 on day 3,6; 10 mg/m^2 on day 1 and also 5 mg/m^2 on day 1. The effects of these groups on event-free and overall survival were evaluated. **Results:** Recurrence was not observed in 72 of 93 patients evaluated in the ALL group (77.4%). The conditioning regimens were considered TBI-Busulfan-based regimens. No significant difference was observed in terms of LFS. The absence of aGVHD in the ALL patient group significantly prolongs LFS, when evaluated according to CR1-2-3 groups, CR2 significantly extended the LFS time. Effect of GVHD prophylaxis on LFS was evaluated no significant effect of methotrexate dose on LFS was observed. **Conclusion:** The most important factor affecting leukemia-free survival is the state of remission. The longest duration of LFS was detected in CR1. The effect of methotrexate dose as GVHD prophylaxis has not been determined. There was no consensus in the studies on methotrexate doses in the literature. It is necessary to study with a larger cohort.

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Pediatric Oncology Abstract Categories

Rare Tumours and Histiocytosis
OP 26

LANGERHANS CELL HISTIOCYTOSIS IN TURKISH CHILDREN; 30 YEARS OF EXPERIENCE FROM A SINGLE CENTER

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Objective: Langerhans-Cell Histiocytosis, the most common histiocytic disorder, is characterized by inflammatory lesions with infiltrating CD1a+/CD207+ pathologic dendritic cells. The extent of disease is highly variable, from single lesion disease to life-threatening disseminated multisystem disease. We aimed to determine the demographic characteristics and the clinical outcomes of children with LCH. **Methodology:** The files of 81 patients diagnosed with LCH in Ankara Oncology Hospital, Dışkapı Children's Hospital and Ankara City Hospital between 1993 and 2023 were retrospectively analyzed. Data collected from the files included characteristics, age, sex, symptoms, physical examination findings, site of involvement, laboratory findings at diagnosis, procedure applied, treatment type used, and outcome. **Results:** The median age was 5 (0.1-17) with a median follow-up of 3 years (0.1-14) (Table1). The most common complaint was a bone lesion-related symptom; swelling (31%), pain (19%). Surgery was the only treatment in 19, chemotherapy in 22, radiotherapy in 1, surgery + chemotherapy in 35 (43%). Vinblastine + prednisolone was most commonly (36%) used. A patient with BRAF600VE was treated with vemurafenib. Recurrence was detected in 13 (16%) patients. Three patients died (3.7%) with refractory disease. **Conclusion:** Bone and skin were the most frequently involved systems in our study. Prognostic factors affecting event-free survival (EFS) were multisystem disease (5-year EFS 62% versus 87%, p=0.01) and hematologic system involvement (5-year EFS 42% versus 82%, p=0.02). Consistent with the literature, our overall survival (OS) rate was found to be high (5-year OS 95%). Patients with single-system disease had excellent survival (100%).

	No (n=81)	%
Median age at diagnosis (range)	5 (0,1-17 years)	
Age distribution		
≤24 ay	22	27
>24 ay	59	73
Sex		
Male	55	68
Female	26	32
Staging		
Single-system disease	57	70
Multisystem disease	24	30
Sites of involvement		
Bone isolated	38	47

Bone multiple	28	35
Skin	18	22
Lymph node	13	16
Lung	13	16
Liver	8	10
Hematologic	6	7
CNS/neurodegenerative	6	7
Diabetes İnsipidus	6	7
GIS	2	3
Chemotherapy protocol		
DAL-HX 83	31	38
LCH-III	19	24
LCH-IV	8	10

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Pediatric Oncology Abstract Categories

Supportive Care and Palliative Care
OP 27

EVALUATION OF VIRAL RESPIRATORY TRACT INFECTIONS IN PEDIATRIC HEMATOLOGY-ONCOLOGY PATIENTS BEFORE COVID-19 PANDEMY

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Objective: Respiratory viruses are an important cause of morbidity and mortality in pediatric hematology oncology patients. We aimed to determine the infection rate, clinical and epidemiological characteristics of respiratory viruses in pediatric patients with hemato-oncological malignancy, aplastic anemia and congenital neutropenia and to show how these viruses affect the primary disease course and treatment. **Methodology:** Between August 2015 and December 2018, 97 patients aged between 5 months and 215 months who were admitted to Istanbul University, Istanbul Faculty of Medicine, Department of Pediatric Haematology-Oncology with acute respiratory tract infection findings and diagnosed with Haemato-Oncological Malignancy, Congenital Neutropenia, Aplastic Anaemia and who had viral respiratory panel were retrospectively analysed. In the viral respiratory panel test, nasal swab samples of the patients were evaluated by RT-multiplex PCR method. SPSS (Statistical Package for the Social Sciences) 22.0 programme was used for statistical analyses **Results:** A total of 97 patients, 52 males (53.6%) and 45 females (46.4%), aged between 5 months and 215 months (78.81±60.17 months, median 60 months) were included in the study. The most common viral respiratoty panel (VRP) positivity was observed between 5 months and 208 months and the mean age was 85.49±61.73 months (median=81 months). Although 44.3% (n=43) of the patients presented in winter and 23.7% (n=23) in autumn, VRP positivity was more common in patients presenting in spring (n=43, 70%) and winter (n=22, 51.2%) seasons. When the VRP results of the patients were analysed; 50.5% (n=49) were positive; 39.2% (n=38) were monoinfection, 11.3% (n=11) were co-infection) and 49.5% (n=48) were negative. When we looked at the VRP results, rhinovirus (hRV) was the most common virus with a frequency of 22.4% (n=11). Other viruses were Respiratory Synsititial Virus (RSV) A/B (14.2% n=7), Parainfluenza (14.2% n=7), Influenza (8.2% n=4), Coronavirus (8.2% n=4), Metapneumovirus (2.1% n=1), Mycoplasma pneumonia (6.1% n=3). Among the co-infections seen in a total of 11 patients, hRV and RSV A/B were the most common viruses accompanying other viruses with a rate of 63.6% (n=7). Among a total of 67 patients who were in various stages of CT and whose treatment was completed, the most common VRP positivity was seen in patients in the induction phase with a rate of 28.3% (n=19). Of the 12 patients with co-infection, 5 (41.6%) were in the induction phase. Cough (n=59 60.8%) and fever (n=47 48.5%) were the most common presenting complaints, accompanied by wheezing (n=17 17 17.5%), respiratory distress (n=11 11.3%), diarrhoea/vomiting (n=9 9.3%) and muscle pain (n=9 9.3%). VRP was positive in 43.9% of patients presenting with fever. The most common hRV virus was found most frequently in spring and winter seasons. Viral respiratory infection positivity was most frequently seen in ALL (n=16 33.3%), second most frequently in Hodgkin's Lymphoma (n=5 10.5%) and Neuroblastoma (n=5 10.5%). Among the patients, upper respiratory tract infection (URTI) (74.2%, n=72) was more common than lower respiratory tract infection (LRTI) (25.8%, n=25). The rate of LRTI in co-infections (28.0%, n=14) was higher than the rate of URTI (6.9%, n=5) and was statistically significant (p=0.021). When hemogram and biochemistry results were analysed, although neutropenia (50.5%) and lymphopenia (50.5%) were observed at a high rate in patients with positive VRI, they were not statistically significant when compared with VRP positivity. Of the patients with VRP positivity (50.5% n=49), 34.6% (n=17) required hospitalisation due to viral respiratory infection. Of the patients included in the study, 4 patients need intensive care unit due to bacterial pneumonia (Mycoplasma pneumonia and Pneumocystis jireovici), bleeding into a mass (hepatoblastoma) and pericardial effusion (peripheric T cell lymphoma). In 7 patients whose chemotherapy duration was prolonged, the duration of treatment prolongation ranged between 4 and 60 days (mean 19.29±20.69 and median 10 days). No VRI-related mortality was observed among the patients during the follow-up period. **Conclusion:** Identification of respiratory viruses in pediatric hematology oncology patients contributes to the management of their primary disease.

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Pediatric Oncology Abstract Categories Survivorship and Late side effects
OP 28

LONG-TERM EVALUATİON RESULTS OF OUR PATİENTS DİAGNOSED WİTH NASOPHARYNGEAL CARCİNOMA: A SİNGLE CENTER EXPERİENCE

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Objective INTRODUCTION: Nasopharyngeal carcinoma represents less than 1% of all childhood cancers. It is most common between 10-20 years with male predominance. Patients most often come with complaints of sizeable cervical lymph nodes, epistaxis, and headache. Since it is unsuitable for surgery due to its anatomical localization, the diagnosis can be made with tru-cut or lymph node excisional biopsy. The most common type of undifferentiated is seen in childhood. It is the type most closely associated with the Epstein-Barr virus. The mainstay of treatment is radiotherapy and chemotherapy. Survival rates are over 75%. However, surviving patients have to cope with the side effects of long-term radiotherapy and chemotherapy. Therefore, studies are ongoing to reduce treatment-related toxicities. **OBJECTIVE:** In this study, our aim was to examine the demographic data, long-term survival results, and late treatment-related side effects of our patients with nasopharyngeal carcinoma. **Methodology:** The data of patients diagnosed with nasopharyngeal carcinoma who were treated at Uludag University Faculty of Medicine, Department of Pediatric Oncology were analyzed retrospectively. **Results:** Twenty-four cases admitted to the pediatric oncology outpatient clinic between 2003 and 2023 were included in the study. The female/male ratio of the cases was 11/13. The mean age at diagnosis was 14.4±1.7. The most common complaints at admission were cervical lymphadenopathy and headache. Two of the cases were sibling cases diagnosed in different years. One patient was diagnosed with papillary adenocarcinoma and received only surgical treatment. Other 23 cases were diagnosed as non-keratinized undifferentiated carcinoma and received radiotherapy and chemotherapy. The patients were given a protocol consisting of bleomycin, epirubicin, and cisplatin. ICE protocol consisting of ifosfamide, etoposide, and carboplatin was given to relapsed cases. Radiotherapy was given after 3 cycles of chemotherapy. In the follow-up of the cases, one case died due to refractory disease, three cases due to relapse, and one case due to sepsis. The cases were followed up for an average of 5.8 years (min: 1 year, max: 19 years). The survival of our cases was 79.2% in the 20-year follow-up. The most common long-term side effects developing secondary to treatment were xerostomia (n=12), dysphagia (n=12), and malnutrition developing secondary to these. Six cases had hypothyroidism and one case had hyperthyroidism. Fibrosis secondary to radiotherapy was seen in 10/24 patients. Apart from these side effects, seven cases had hearing loss, recurrent otitis, and nascent speech. **Conclusion:** Nasopharyngeal carcinoma is a rare tumor in childhood. Because it is rare, treatment approaches have been created based on adult patients. Depending on the doses of radiotherapy, and chemotherapy taken at an early age, many side effects that reduce the quality of life are seen in patients who live for a long time. Studies are needed to reduce these side effects. We wanted to contribute to the literature by publishing the long-term results of our cases.

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HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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POSTER PRESENTATIONS

Adult Hematology Abstract Categories

Acute Leukemias
PP 01

CYTARABİNE-İNDUCED NEUROTOXİCİTY WELL-RESPONDİNG TO METHYL PREDNİSOLONE

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Objective: Neurotoxicity is a well-recognized complication of high-dose cytosine arabinoside (HIDAC). We describe a patient with AML who suffered cerebellar toxicity following high-dose cytarabine and showed excellent response to methylprednisolone. **Methodology:** A 34-year-old male with acute myeloid leukemia (AML) M1 presented with dysarthria in the inpatient clinic. He had been previously diagnosed with myeloblastic leukemia with maturation type AML, negative for t(8:21), t(9:22), CEBPA and FLT3-TKD mutations by PCR. Cytogenetics were 46, XY. Prior to her presentation, he was treated with induction chemotherapy, which consisted of cytarabine 200 mg/m^2 on days 1–7, idarubicin 12 mg/m^2 on days 1–3. After induction chemotherapy, he had complete morphologic and immunophenotypic remission of her leukemia on bone marrow biopsy, which was followed by one consolidation cycle of high-dose cytarabine (3 gm/m^2 on days 1, 3 and 5). After the first cycle of consolidation therapy, on day six he began to complain of dysarthria, dizziness, gait disorder and balance loss. His cumulative dose of cytarabine at that time was 37.400 g. On physical exam, he had not be able to walk in a straight line, he had dysarthria but he had not dysmetria and dysdiadochokinesia. Gait was ataxic and the rest of neurologic examination was generally normal. MRI and CT of the brain showed no acute pathologic findings. His neurologic symptoms were presumed to be secondary to cytarabine neurotoxicity. He was started on prednisone 80 mg daily over 7 days with rapid resolution of his symptoms within a few days of starting corticosteroids. The steroids were tapered by halving the dose each 3 days over the following 2 weeks. The patient did not receive any additional consolidation treatments with cytarabine, though he remained on maintenance allogeneic hematopoietic cell transplantation (HCT), donor was his brother. He is currently doing well and remains in remission from his disease, without neurologic deficits. **Results:** An excellent response to methylprednisolone in our patient strongly suggests an immune mediated mechanism of neurotoxicity. The patient's improvement in symptoms may have been spontaneous or due to the steroid effect but suggests a possible treatment approach. **Conclusion:** There are no standardized treatments for cytarabine- induced neurotoxic effects, besides discontinuation of the drug. There are only a few cases in the literature.(1) We choice treatment with corticosteroids in this case. The patient presented with neurologic deficits soon after followed by rapid resolution of symptoms after initiation of corticosteroids.This case support the theory of an immune-mediated mechanism and will hopefully serve as a potential treatment for those experiencing neurotoxicity with cytarabine in the future

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Adult Hematology Abstract Categories

Chronic Leukemias
PP 02

REACTIVATION OF HEPATITIS B IN A PATIENT WITH UNTREATED CHRONIC LYMPHOCYTIC LEUKEMIA

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Objective Introduction: The natural course of hepatitis B virus (HBV) infection is determined by the interaction between viral replication and the host's immune response. HBV persists in the body of all infected patients, even those with evidence of serological recovery. Therefore, individuals with a history of HBV infection receiving immunosuppressive therapy are at risk for HBV reactivation. HBV reactivation can result in increased serum aminotransferase levels, fulminant liver failure, and/or death. HBV reactivation has been described in patients receiving chemotherapy for various hematological and solid tumors. We present our patient with a diagnosis of chronic lymphocytic leukemia (CLL) who was spontaneously reactivated during follow-up without treatment. **Case report:** A female patient, who had been followed up with the diagnosis of chronic lymphocytic leukemia for 13 years without treatment, presented in August 2022 with complaints of loss of appetite, weight loss, and jaundice in the eye. It was learned in her history that she had not received chemotherapy or radiotherapy before, had no known disease, and did not use any medication. On physical examination, sclera icteric, multiple lymph nodes with a size of 1 cm in the cervical region and splenomegaly were detected. The patient's Rai stage 2, CLL-IPI score of 3, 17p(-), mutation in the IGHV gene was detected. Detection of leukocyte count 157,000/mm^3, lymphocyte count 149.660/mm^3, hemoglobin 13.5 g/dL, platelet count 117.000/mm^3, alanine aminotransferase (ALT) 2045 U/L, aspartate aminotransferase (AST) 2252 U/L, total bilirubin 10.72 mg/dL, direct bilirubin 9.62 mg/dL, protrombin time 18.7 sec, active partial thromboplastin time 30 sec. While IgG was normal, IgA and M were low. HBsAg positive, anti-HBs negative, anti-HBc IgM negative, anti-HBcIgG positive, HBV-DNA 28,000,000 IU/mL were determined to explain liver dysfunction. One year ago, HBsAg was negative, anti-HBs negative, anti-HBc-IgM negative, while anti-HBc-IgG was positive. The patient was accepted as HBV reactivation and tenofovir disoproxil was started. In the first month of treatment, AST-ALT and bilirubin values returned to normal limits. In the 3rd month of the treatment, HBsAg and HBV-DNA became negative and anti-HBs became positive. The patient was followed up without treatment for CLL. Long-term use of tenofovir disoproxil was planned, despite the possibility of spontaneous HBV reactivation again. **Methodology detected:** Detection of leukocyte count 157,000/mm^3, lymphocyte count 149.660/mm^3, hemoglobin 13.5 g/dL, platelet count 117.000/mm^3, alanine aminotransferase (ALT) 2045 U/L, aspartate aminotransferase (AST) 2252 U/L, total bilirubin 10.72 mg/dL, direct bilirubin 9.62 mg/dL, protrombin time 18.7 sec, active partial thromboplastin time 30 sec. While IgG was normal, IgA and M were low. HBsAg positive, anti-HBs negative, anti-HBc IgM negative, anti-HBcIgG positive, HBV-DNA 28,000,000 IU/mL were determined to explain liver dysfunction. One year ago, HBsAg was negative, anti-HBs negative, anti-HBc-IgM negative, while anti-HBc-IgG was positive. The patient was accepted as HBV reactivation and tenofovir disoproxil was started. In the first month of treatment, AST-ALT and bilirubin values returned to normal limits. In the 3rd month of the treatment, HBsAg and HBV-DNA became negative and anti-HBs became positive. The patient was followed up without treatment for CLL. Long-term use of tenofovir disoproxil was planned, despite the possibility of spontaneous HBV reactivation again. **Results:** determined to explain liver dysfunction. One year ago, HBsAg was negative, anti-HBs negative, anti-HBc-IgM negative, while anti-HBc-IgG was positive. The patient was accepted as HBV reactivation and tenofovir disoproxil was started. In the first month of treatment, AST-ALT and bilirubin values returned to normal limits. In the 3rd month of the treatment, HBsAg and HBV-DNA became negative and anti-HBs became positive. The patient was followed up without treatment for CLL. Long-term use of tenofovir disoproxil was planned, despite the possibility of spontaneous HBV reactivation again **Conclusion:** tenofovir disoproxil was planned, despite the possibility of spontaneous HBV reactivation again. Discussion: HBsAg positive individuals are at greater risk for HBV reactivation compared to HBsAg negative individuals. It has been reported that HBV reactivation rate is up to 70% in HBsAg-positive individuals receiving standard chemotherapy.For those with cured infection (defined as HBsAg-negative, anti-HBc-positive, HBV DNA-negative), reactivation ranged from 0.3% to 9.0%.

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PP 03

ESTABLISHMENT OF EX VIVO DRUG SENSITIVITY SCREENING PLATFORM FOR LEUKAEMIA AND MULTIPLE MYELOMA USING A SOUTH AFRICAN PATIENT COHORT

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Objective: Our objective is to develop a functional precision medicine platform designed to directly identify tailored drug regimens that target individual patient cancer cells and give benefit to the same donors by supporting clinical decision-making. We demonstrate our *ex vivo* drug sensitivity screening platform for precision medicine using Leukaemia and Multiple Myeloma samples from a South African patient

cohort as proof of concept. **Methodology:** Through collaboration with Chris Hani Baragwanath and Donald Gordon Hospitals, Johannesburg, South Africa, we performed patient sample collections of n=80. Collected patient samples include Acute myeloid leukaemia (AML) (n=7), Chronic lymphocytic leukaemia (CLL) (n=4), Chronic myeloid leukaemia (CML) (n=30), Multiple Myeloma (n=40) and health donor (n=5). For each patient sample, peripheral blood mononuclear cell (PBMC) isolation was performed and cryopreseved in liquid nitrogen. **Results:** Our preliminary demographic analysis results show that we can group patients based on diagnosis, staging, exclusion and inclusion criteria. From our demographic analysis, we have also identified highly frequent chemotherapy drugs used in the cohort. Further, we can identify the most frequent chemotherapy drugs given as medication to the patient cohort. We then selected 30 drugs that are relevant for leukemia and multiple myeloma for Ex vivo drug sensitivity screening test. **Conclusion:** Using our results we will then select effective drugs for monotherapy and also drug combinations. Selected drug combinations will then be validated on patient samples using our ex vivo drug sensitivity test. These results will be analyzed using our statistical capabilities and developed as a packaged product of preclinical information for precision clinical trials. Thus, we are progressing our cutting-edge translational platform from technology readiness level (TRL4) to TRL6 on blood cancer.

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PP 04

IBRUTINIB RELATED NEUROPATHY: A CASE REPORT

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Case report Introduction: Chronic lymphocytic leukemia (CLL) is the most common leukemia seen in adulthood and mostly affects the older age group. The treatment of CLL has completely changed in recent years with the discovery of new agents. Today, ibrutinib, an oral inhibitor of the Bruton kinase signaling pathway, has become one of the commonly used agents in the treatment of CLL. Ibrutinib, a generally well tolerated agent, has manageable side effects. However, life-threatening side effects such as major bleeding, AF, and infections can be seen. Here, we present a case of CLL who developed peripheral sensorimotor neuropathy during ibrutinib treatment. **Case Report:** A 62-year-old female patient who was diagnosed with CLL 5 years before her admission was followed up in remission after R-FC chemotherapy. The patient, who received his last chemotherapy about 2 years ago, applied to the polyclinic with complaints of weakness and pallor for 2 weeks. Hepatosplenomegaly and diffuse (cervical, axillary, inguinal) lymphadenopathies were found in the outpatient clinic examination. In his abdominal ultrasonography, the liver was 16 cm, and the spleen was 14 cm. There were paratracheal and mediastinal LAPs on thorax tomography. Bicytopenia was detected in whole blood examination.The patient was thought to have CLL recurrence and Ibrutinib treatment was started at a dose of 420 mg/day. The patient presented with the complaint of weakness in the legs that started after ibrutinib treatment and continued to increase 3 weeks later. There was no significant finding in the patient's lumbar MR imaging. EMG examination of the patient revealed motor sensory axonal neuropathy. Ibrutinib was discontinued due to neuropathy thought to be related to ibrutinib. Neuropathy symptoms regressed in the patient's follow-up. After about 6 weeks, the patient's neuropathic symptoms regressed. Venetoclax treatment was started in the patient with persistent lymph nodes and B symptoms. The patient, whose neuropathic symptoms regressed, continues to be followed up. **Discussion:** With the introduction of new agents in the treatment of CLL, the chance of treatment in relapsed refractory patients has increased. In the treatment of CLL, standard R-FC (Rituximab-Fludarabine, Cyclophosphamide), and R-Bendamustine regimens were previously used as first-line therapy. Today, these treatments have been replaced by BTK inhibitors (Ibrutinib, Acalabrutinib), PI3K protein inhibitors (Idelalisib), BCL-2 inhibitors (Venetoclax) and CD-20 antibodies (Obinituzumab, Ofatumumab). The reason for this drastic change in the CLL treatment algorithm is that the newly discovered agents have less side-effect profiles, ease of use, and positive effects on mortality. Although these new treatments have less side effect profile, each newly reported side effect is very important for the follow-up of patients after treatment. Ibrutinib is a Bruton Tyrosine kinase inhibitor and is the first-line therapy for CLL. Among the side effects of ibrutinib, diarrhea, cough, nausea, HT, AF, major bleeding can be counted. It is mentioned in the literature that ibrutinib may cause neuropathy. In our case, motor neuropathy also developed, and symptoms regressed after discontinuation of the drug. The side effect of motor neuropathy should also be considered in patients given ibrutinib, and if this side effect develops, the treatment plan should be reconsidered.

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PP 05

RİCHTER SYNDROME TRANSFORMATİON UNDER VENETOCLAX TREATMENT: A CASE REPORT OF A 51-YEAR-OLD FEMALE WİTH CLL

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Background: Richter syndrome (RS) is typified by the emergence of an aggressive lymphoma in individuals who have been previously or simultaneously diagnosed with chronic lymphocytic leukemia (CLL) or small lymphocytic lymphoma

(SLL). Although it is relatively rare, appearing in 2% to 10% of CLL patients, RS often proves to be lethal due to its rapid progression and the scarcity of specific therapies. Venetoclax, a BCL2 inhibitor, has demonstrated efficacy in CLL but its role remains less explored in RS. Hence, there is a paucity of information regarding the direct employment of Venetoclax in the treatment regimen for RS. This study presents a case of Richter transformation being managed under treatment with Venetoclax. **Case report: Case:** A 51-year-old female patient, diagnosed with CLL with negative 17p deletion following investigations in 2015 due to autoimmune immune thrombocytopenia (ITP) and lymphocytosis, was given 6 cycles of FCR (fludarabine, cyclophosphamide, rituximab) due to steroid-resistant autoimmune thrombocytopenia, and complete response (CR) was achieved according to iwCLL criteria. After remission, the patient was monitored without treatment, and in 2020, full blood count, biochemical analysis, and peripheral smear were performed due to fatigue symptoms. The complete blood count showed leukocytes: 44600/mm3, lymphocytes: 39000/mm3, MCV: 86 fl, and hemoglobin: 9.5 g/dL. The patient, with no signs of hemolytic anemia, had no nutritional (Fe, B12, folate) deficiency, and normochromic normocytic anemia was detected. There were no mutations in the immunoglobulin heavy chain variable region (IGHV) genes. The patient, evaluated as relapsed stage 3 disease, was started on venetoclax-rituximab treatment. In the 11th month of the treatment, due to symptoms of fatigue, fever, night sweats, and weight loss, a bone marrow biopsy was performed after pancytopenia was observed, and a diagnosis of diffuse large B-cell lymphoma was made. Due to Richter transformation, DA-R-EPOCH (dose-adjusted rituximab, etoposide, prednisolone, vincristine, cyclophosphamide, doxorubicin) treatment was initiated. After 4 cycles of DA-R-EPOCH treatment, single-agent ibrutinib was started due to treatment-resistant disease and an ECOG performance score of 2. The patient, whose disease continued to progress under ibrutinib treatment, died from septic shock. **Conclusions:** This case underscores the complexities in treating Richter syndrome, particularly with venetoclax, and emphasizes the need for careful monitoring and understanding of potential transformations. The development of Richter transformation under venetoclax treatment highlights an area that requires further investigation and consideration in the management of CLL. Prospective studies and a comprehensive approach are vital to enhancing treatment strategies and improving outcomes for patients with this aggressive form of lymphoma.

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Adult Hematology Abstract Categories

Chronic Myeloproliferative Diseases
PP 06

BIOMEDICAL ANALYSIS OF RED BLOOD CELLS IN POLYCYTHEMIA VERA, APPLICATION OF RAMAN SPECTROSCOPY

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Objective: Polycythemia vera (PV) is a chronic myeloproliferative neoplasm characterized by increased red blood cell mass. Excess erythrocytosis leads to elevated hematocrit, resulting in increased blood viscosity, a condition that promotes thrombosis. For years, red blood cells (RBCs) in PV were considered to be morphologically and functionally normal. This analysis aimed to check whether there are biochemical alterations in RBCs in PV that may be associated with thrombotic complications. **Methodology:** We included 5 patients with PV and 5 healthy individuals in the preliminary analysis of the biochemical properties of isolated RBCs focused on different forms of hemoglobin and heme. The analysis was conducted using Raman spectroscopy. **Results:** The results of the Raman spectra obtained from isolated RBCs suggest a larger contribution of ferrous heme iron in the sample of a patient with PV compared to a control sample. In the PV sample, a greater contribution of the high-spin heme iron, a molecular state typical for deoxyhemoglobin, was observed, which stays in line with higher ferrous content. The effect may indicate a weaker linkage of the protein with oxygen. **Conclusion:** Our analysis suggests the occurrence of biochemical alterations in RBCs in PV, together with RBC overproduction. Changes in the structure of hem and hemoglobin affect oxygen affinity. Our future study will focus on determining if described alterations in RBCs may contribute to the pathogenesis of thrombotic complications in PV.

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PP 07

DISCONTINUATION OF TYROSINE KINASE INHIBITORS IN TUNISIAN CHRONIC MYELOID LEUKEMIA PATIENTS

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Objective: Some patients who achieve deep molecular remission (DMR) can successfully discontinue tyrosine kinase

inhibitors (TKI). TKI discontinuation in chronic phase CML is being implemented in the clinical routine. To investigate the outcome of the patients with chronic myeloid leukemia (CML) discontinued tyrosine kinase inhibitors (TKI) therapy **Case report:** TKI was prospectively discontinued in patients who were diagnosed with CML in the chronic phase treated with TKI for ≥5 years, and sustained molecular response 4.5 (MR4.5) for ≥2 years. Molecular relapse was defined as a single loss of major molecular response (MMR) (BCR-ABL1^{IS} >0.1%). **Methodology:** Standard qRT-PCR techniques were performed to evaluate minimal residual disease (MRD) **Results:** Twenty-one patients with chronic-phase CML were enrolled. The median duration of TKI treatment before discontinuation was 117 months (49-177) months. The median follow-up time after TKI discontinuation was 20 months (range: 1-117 months). The estimated TFR rate was 62% and 47.6% at 12 and 24 months after discontinuation respectively. Five patients experienced loss of MMR within 7 months after TKI discontinuation. All relapsed patients promptly resumed TKI therapy and regained at least major molecular response. **Conclusion:** Our data on the Tunisian population may provide a basis for the safety and feasibility of TKI discontinuation particularly in CML patients who are in sustained deep molecular response with longer TKI treatment duration.

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Adult Hematology Abstract Categories

Coagulation Diseases
PP 08

AZERBAIJAN EXPERIENCE OF HAEMOPHILIA CARE

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Objective: As the management of haemophilia is complex, it is essential that those with the disorder should have ready access to a range of services provided by a multidisciplinary team of specialists. There is a State Program aimed at solving this problem in Azerbaijan. The purpose of the study to learn complex epidemiological characteristics which are necessary for justification of strategy on treatment and prevention of haemophilia. **Methodology:** For planning of prophylactic treatment in Baku city, there was obtained the database of all patients (by sex, age, diagnosis, severity)registered in the city (625 persons). The main group consisting of 52 patients with severe and 40 patients with moderate haemophilia-A was formed.Different variant treatment of 162 patients was organized in HTC:chemical synovectomy with rifampicin (44); phonophoresis with refined naftalan oil (44); phonophoresis with hydrocortisone (28);electrophoresis with KJ (35). **Results:** 77.9% of patients observed in treatment and prophylaxis facilities in Baku were men, 59% were diagnosed with haemophilia A, 18.8% with severe and 31.5% with moderate haemophilia.Prophylactic treatment reduces the average annual number of bleeding episodes by 2.2 times in severe haemophilia and 2.1 times in moderate haemophilia. The model of prophylactic treatment of hemophilia can be applied in the infusion model 2 or 3 times a week as far as possible. **Conclusion:** The role of physiotherapeutic methods of hemarthrosis treatment was assessed and positive results were obtained. Due to the prevalence of polymorbidity in patients with hemophilia the complexity of their observation and treatment and the participation of specialists from several specialties is necessary. As the duration of haemophilia is proportional to the frequency of its complications, starting the prophylactic treatment at the stage when patients are first diagnosed is recommended.

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PP 09

CHARACTERIZATION AND MANAGEMENT OF PATIENTS WITH HEREDITARY FACTOR X DEFICIENCY: A RETROSPECTIVE SINGLE CENTER EXPERIENCE

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Objective: Factor X deficiency (FXd) is a rare coagulation disorder that can be either hereditary or acquired. **Case report:** We characterized patients with FXd and evaluated their bleeding patterns and treatment strategies. **Methodology:** This retrospective review includes patients with FXd managed at Ege University Medical Faculty Hospital Ege Adult Hemophilia and Thrombosis Center. We analyzed demographic characteristics, laboratory results, bleeding scores, and treatments of five patients with FXd (Table). Patient 1 was admitted for further evaluation of menometrorrhagia and prolonged postpartum bleeding. She required treatment following birth, tooth extraction, and fractional curettage during follow-up. Coagulation tests were run as a part of in vitro fertilization in patient 2 and were abnormal. Family history was significant for a history of thrombosis in her mother. Blood tests were positive for Prothrombin 20210 G/A heterozygous mutation and lupus anticoagulants. The patient has never had any bleeding episodes in the follow-up. Patient 3 has a history of menometrorrhagia, gingival bleeding, and prolonged bleeding after an abortion. The sister of the patient has FXd. In follow-up, she was treated for subcutaneous hematoma, gingival, and post-cesarean bleeding. Patient 4 presented for evaluation of menometrorrhagia. She was treated for polypectomy, two cesarean sections, tooth extraction, intermittent recurrent ecchymosis, and epistaxis. Patient 5 was diagnosed at age one and was referred to us for further management of his condition. His initial presentation was consistent with subdural hematoma. In the follow-up, he was treated for

epistaxis, hematuria, subcutaneous hematoma, and gastrointestinal and gingival bleeding. He continues to take Factor X concentrate prophylactically. All the patients are currently healthy and regularly follow up in our center. **Results Conclusion:** Since there is no FX concentrate in our country yet, FFP is used. Patients should be treated with the appropriate FX preparation and a prophylactic approach should be applied in necessary patients.

Table. Patient Characteristics and Diagnostic Laboratory Results

Patient No	Age at analysis	Gender	FX %	PT sec 10.9-14.7	PTT sec 22.5-31.3	Bleeding score*	Treatment
1.	41	F	0.2	60.4	64.1	11	FFP, ES, PCC
2.	25	F	12.3	31.5	57.9	0	Not need
3.	18	F	0.8	37	19.3	11	FFP, ES, PCC
4.	34	F	34.4	13.9	28.3	15	FFP
5.	1	M	1	180	138	10	FFP, FXC, PCC

*- *International Society for Thrombosis and Hemostasis/Scientific and Standardization Committee Bleeding Assessment Tool (ISTH-BAT), FFP- fresh frozen plasma, ES- erythrocyte suspension, PCC- prothrombin complex concentrate, FXC- Factor X concentrate, F- female, M-Male*

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Adult Hematology Abstract Categories

Lymphoma
PP 10

REACTION OF THE CIRCULATING REGULATORY T CELLS AFTER CHEMORADIATION THERAPY OF HODGKIN LYMPHOMA

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Objective: Purpose of the research is to determine the reaction of regulatory T cells after chemoradiation therapy of Hodgkin lymphoma. **Methodology:** 29 samples of peripheral blood of patients with Hodgkin lymphoma (before treatment – 10; after chemotherapy – 9; after consolidation radiotherapy – 10). Chemotherapy was carried out according to the following schemes: ABVD, BEACOPP with the addition of 1-2 courses of CVPP or COPP. The subsequent consolidation of radiation therapy was accomplished to a dose of 20-24 Gy. Treg-cells were identified by phenotype CD45+CD4+CD25+CD127-. Control group consisted of 40 practically healthy people. The group data were compared using the Mann-Whitney U test. **Results:** At the onset of Hodgkin lymphoma the percentage and absolute count of regulatory T cells corresponded to normal values (5.19%/0.036*10^9 cells/l - Hodgkin lymphoma vs 3.69%/0.031*10^9 cells/l - control level, $p>0.05$). After chemotherapy the percentage of regulatory T cells increased to 9.09%, $p<0.05$; the absolute count remained at the same level (0.037*10^9 cells/l, $p>0.05$). After consolidation of radiation therapy the percentage of regulatory T cells was determined at the level of 9.19%, $p>0.05$. The decrease of absolute count of regulatory T cells was statistically significant difference and was near 0.019*10^9 cells/l. **Conclusion:** There is a relative redistribution of cells within a subpopulation of activated CD4+CD25+T cells towards an increase in the level of regulatory T cells after chemotherapy of Hodgkin lymphoma. The subsequent radiotherapy consolidation at a dose of 20-24 Gy continued to increase the sensitivity of regulatory T cells to the radiation component of chemoradiation therapy.

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PP 11

CUTANEOUS RICHTER TRANSFORMATION IN THE 16TH YEAR OF FOLLICULAR LYMPHOMA DIAGNOSIS

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Case report: Richter transformation may develop in lymph nodes or rarely extranodally. A 70-year-old male with an exhausted appearance had a large malodorous wound progressing to necrosis on the left chest wall. He received two treatment lines 5 years apart for follicular lymphoma and was in remission. Histological evaluation showed triple hit diffuse large B cell lymphoma. PET-CT showed localized cutaneous and lymph node involvement. Two treatment lines did not control the disease. He passed on progression.

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PP 12

AUTOLOGOUS HEMATOPOIETC CELL TRANSPLANTATION (HCT) FOR HODGKIN LYMPHOMA, REAL WORLD EXPERIENCE OF A SINGLE CENTER EXPERIENCE

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Objective: Hodgkin's Lymphoma (HL) during the years became a high curable hematology malignant disease.

Despite high curable rates, up to 30% of patient will relapse or will be refractory to first line therapy (R/R). In this scenario, hematopoietic cell transplantation (HCT) is an important treatment modality to reverse the poor prognosis of these R/R HL patients. Hence, our goal was to evaluate the outcomes of R/R HL pts who underwent an autologous HCT. **Methodology:** Pts who underwent an autologous or allogeneic HCT for R/R HL at the University of Campinas, Bone Marrow Transplantation Unit of Clinical Hospital, from 1994 to 2023, had their charts revised, retrospectively. 144 procedures were performed, 121 autologous HCT, and 23 allogeneic HCT, It was analyzed 119 (95%) patients for the first autologous HCT. Descriptive analyses, Kaplan-Meier Method, Log-Rank test to compare groups and Cox Regression were applied by IBM-SPSS 24.0. **Results:** The median age was 27 years (9-72), 60% male. Nodular sclerosis (63%) was the most common histology. The time from diagnosis and HCT was 23 months (6-96); 44% pts had chemoresistant disease (CT_R) and 56% chemosensitive (CT_S); the OS and PFS pts with CT_R were worse and Cox Regression analyzes confirmed as worst prognosis (OS: HR 2.29, 95%CI 1.29-4.07, p=0.004), besides that for PFS the time from diagnosis and HCT (PFS: HR 0.98, 95%CI: 0.97-0.99, p=0.007) was also another factor. **Conclusion:** Despite the small number of enrolled pts, our data can be compared to literature regarding OS and PSF. Chemosensitivity disease at HCT was associated with better outcome, and Autologous-HCT allows for long-term survival in R/R HL.

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PP 13

SYNDROME OF INAPPROPRIATE ANTIDIURETIC HORMONE SECRETION AS CENTRAL NERVOUS SYSTEM LYMPHOMA RELAPSE SIGN OF NODAL DIFFUSE LARGE B-CELL LYMPHOMA

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Case report: A woman (65) with nodal diffuse large B-cell lymphoma in remission developed confusion and communication loss before the 6th chemotherapy. She had no fever and no meningeal sign.Biochemistry revealed hyponatremia consistent with the secretion of inappropriate ADH.MRI showed contrast enhancement on the mesencephalic aqueductus cerebri and on 3rd ventricle.Cerebrospinal fluid had low glucose, high protein, and lymphocytes. Central nervous system lymphoma with SIADH as a relapse sign was diagnosed.

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Adult Hematology Abstract Categories

Myeloma
PP 14

INFECTION RATES ACROSS THE AUTOLOGOUS STEM CELL TRANSPLANTATION WITH REFLECTION OF MULTIPLE MYELOMA INDUCTION STORY IN TURKEY

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Objective: This study aimed to investigate the frequency of infections after autologous hematopoietic stem cell transplantation (HSCT) in patients who were diagnosed with multiple myeloma (MM) in our tertiary center. **Methodology:** We conducted a single-center retrospective study between May 2007 and November 2016. All patients with MM diagnoses were screened on our institutional electronic database and European Society of Blood and Marrow Transplantation data-collecting forms. **Results:** Total 150 patients enrolled in the study. Nearly all patient developed fever. The median time from SCT to fever development was 7.4 ±2.8 days. The most frequently encountered infection type was pneumonia and soft tissue infections. Other clinically documented infections were oropharyngeal candidiasis, herpetic stomatitis, skin and soft tissue infections, and neutropenic colitis. One patient developed CMV colitis. Blood and urine cultures were positive in 18.6% and 20%, respectively. **Conclusion:** The number of pre-transplant treatment regimens and antimicrobial lines was not statistically significant (p=0.34). No correlation was found between the timing of the SCT and the number of antimicrobial lines after transplantation (p=0.44). There was no statistical significance between febrile neutropenia and CD34 cell count (p=0.34). Early mortality rate was 0.6%. The early mortality rate covering the first 100 days was acceptable.

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PP 15

DEVELOPMENT OF GIANT PLASMACYTOMA IN A PATIENT WITH BONE MARROW RESPONSE DURING TREATMENT: A CASE REPORT

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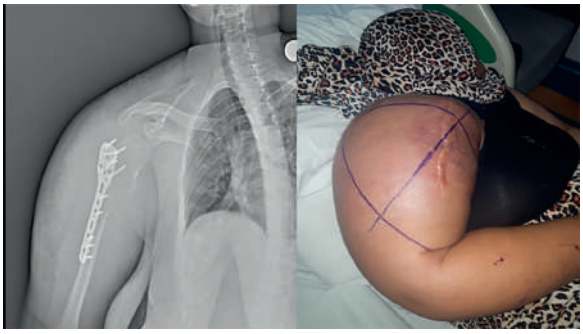
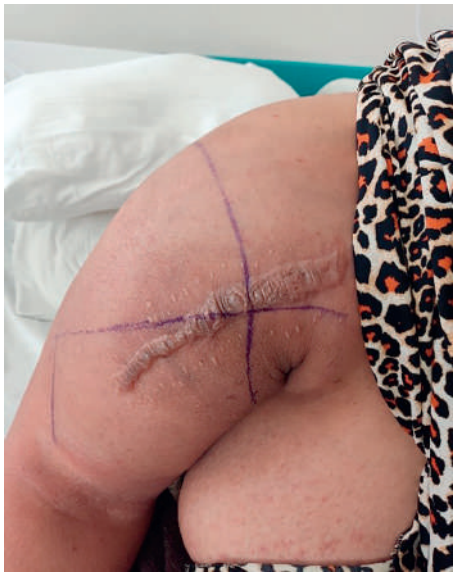
Objective: A plasmacytoma is a myelomatous mass that can develop into a widespread illness, be seen alone, or be combined with multiple myeloma (MM). Bone marrow does not always indicate MM, but over the course of 4-5 years, about 50% of cases advance to this disease. In this study, we aimed to present a patient who was diagnosed with multiple myeloma and developed giant plasmacytoma despite bone marrow response during follow-up. **Case report:** During the 4th cycle, a giant plasmacytoma developed at the patient's right arm proximal humerus level.Ultrasound imaging performed on the right upper extremity was reported as 'Diffuse skin-subcutaneous thickness, increased echogenicity and linear fluid areas were observed. A large 5 × 3 cm hypoechoic nodular lesion with markedly increased blood flow was observed in the proximal medial neighborhood of the patient's incision line. Plasmacytoma continued to shrink with radiotherapy and chemotherapy **Methodology:** At the time of diagnosis, EPs are seen in around 7% of individuals with MM and are best identified by PET/CT scans; the presence of EP is linked to a worse prognosis. Later in the course of the disease, 6% more patients will get EP. Large, crimson-colored, subcutaneous masses can be a symptom of EP. The creases on the palms and/or soles may be affected by plane xanthomas, which may be a paraneoplastic condition. Rarely, cutaneous spicules made partially of the monoclonal (M) protein may form. Results **Conclusion:** We presented a case that developed a giant plasmacytoma based on multiple myeloma. This case is important because, after the diagnosis, a giant plasmacytoma developed during the 4th cycle of chemotherapy, although the patient's laboratory examinations and clinic responded to chemotherapy after 3 cycles of chemotherapy.





https://doi.org/10.1016/j.htct.2023.09.065

Adult Hematology Abstract Categories

Platelet Diseases
PP 16

A PHASE 3 STUDY TO EVALUATE THE EFFICACY AND SAFETY OF CAPLACIZUMAB WITHOUT FIRST-LINE THERAPEUTIC PLASMA EXCHANGE IN ADULTS WITH IMMUNE-MEDIATED THROMBOTIC THROMBOCYTOPENIC PURPURA

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Objective: Caplacizumab (CPLZ) is indicated, in combination with therapeutic plasma exchange (TPE) and immunosuppressive therapy (IST), for the treatment of immune-mediated TTP (iTTP). TPE is a mainstay of iTTP treatment but is burdensome and associated with complications. Real-world data suggest efficacy of TPE-free CPLZ regimens in iTTP, but clinical trial data is unavailable. This trial evaluates the efficacy and safety of CPLZ with IST without first-line TPE in adults with iTTP. **Methodology:** MAYARI (NCT05468320) is a Phase 3 multicenter study. Adults with a clinical diagnosis of initial/recurrent iTTP are eligible pending ADAMTS13 activity level confirmation within 48 hours of enrollment. Participants will receive CPLZ and IST. CPLZ

treatment will be continued until ADAMTS13 activity level of ≥50% at 2 consecutive visits after platelet count normalization or for up to 12 weeks, whichever occurs first; follow-up period is 12 weeks. TPE may be started after 24 hours if indicated. **Results:** The primary endpoint is the proportion of participants achieving remission without requiring TPE during the overall study period (Table). Revised outcomes definitions from the International Working Group for iTTP will be utilized (Cuker et al. *Blood.* 2021;137[14]:1855-1861). An adequate number of participants will be enrolled to ensure ≥55 participants with ADAMTS13 activity levels <10% at baseline are available for primary endpoint analysis; around 61 participants are expected to be enrolled. **Conclusion:** The current standard of care in patients with iTTP includes a combination of TPE, IST, and CPLZ. This novel study will define the efficacy and safety of CPLZ and IST without first-line TPE in adults with iTTP. This regimen would avert the risks for substantial complications associated with TPE and represents a paradigm shift in the frontline management of iTTP. This content was first presented at ASH 2022 (abstract #1174).

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Adult Hematology Abstract Categories

Other Diseases
PP 17

THE CLINICAL EFFICACY OF EPOETIN ALFA AND DARBEPOETIN ALFA IN PATIENTS WITH LOW-RISK OR INTERMEDIATE-1-RISK MYELODYSPLASTIC SYNDROME: RETROSPECTIVE MULTI-CENTER REAL-LIFE STUDY

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Objective: This study aimed to evaluate the clinical efficacy of epoetin alfa and darbepoetin alfa in patients with myelodysplastic syndromes (MDS) in the real-life setting. **Methodology:** A total of 204 patients with low-risk or intermediate-1-risk MDS who received epoetin alfa or darbepoetin alfa were included. Hemoglobin levels and transfusion need were recorded before and during 12-month treatment. **Results:** Hemoglobinlevelsweresignificantlyhigherateachfollowupvisitwhencomparedtobaseline levelsinbothepoetinalfaanddarbepoetinalfagroups.Transfusionneedsignificantly decreasedfrombaselineateachstudyvisiintheepoetinalfagroupandonlyatthe12thmonth visitinthedarbepoetinalfagroup.Hemoglobin levels or transfusionneedwassimilarbetween treatmentgroups. **Conclusion:** This reallife retrospective study revealed similar efficacy of epoetin alfa and darbepoetin alfa among low risk or intermediate-1 risk MDS patients with no difference in treatment response between treatment groups, whereas a likelihood of earlier treatment response in the epoetin alfa group(figure 1).

https://doi.org/10.1016/j.htct.2023.09.067

PP 18

RETROSPECTIVE EVALUATION OF BONE MARROW FINDINGS IN AUTOIMMUNE HEMOLYTIC ANEMIAS

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Objective: Autoimmune hemolytic anemias (AIHA) are rare disorders where autoantibodies destroy self-red blood cells. AIHA includes warm AIHA (wAIHA), cold AIHA (cAIHA or cold agglutinin disease), mixed AIHA (mAIHA), paroxysmal cold hemoglobinuria (PCH), and atypical AIHA (aAIHA) based on direct antiglobulin test (DAT) results. We studied bone marrow features and their link to disease outcomes in AIHA cases with bone marrow trephine biopsies during the disease course. **Methodology:** AIHA patients, who had bone marrow aspiration and trephine biopsy between 2005-2023, were assessed retrospectively. Data included demographics, baseline/follow-up laboratory results (HB, hematocrit, reticulocyte count/percentage, corrected reticulocyte, lactate dehydrogenase, bilirubin, haptoglobin levels, DAT results), bone marrow features (cellularity, erythroid hyperplasia, dyserythropoiesis, marrow reticulin fibrosis, lymphoid infiltrates), treatment details, response, and outcomes. **Results:** A total of 43 AIHA patients were studied (32 females), with the median age at diagnosis of 55 years. Patients with grade≥1 MF received more treatment lines (p=0.012). Reticulocytosis was less frequent in ≥MF1 group (p=0.03). Grade 0-1 MF and grade≥2 MF had no difference in treatment response (p=0.089, p=0.055); grade≥2 MF had less frequent reticulocytosis than grade 0-1 MF (p=0.024). Dyserythropoiesis had no impact on treatment or relapse (p=1, p=0.453).MF grade didn't affect relapse (p=0.503).

Conclusion: Our study provides valuable insights into the relationship between bone marrow characteristics and treatment response in AIHA patients. The findings indicate a significant correlation between the degree of MF and a decrease in bone marrow reticulocyte response. Additionally, as the degree of MF increased, the number of treatment lines also increased, suggesting a potential impact on disease progression and management.

https://doi.org/10.1016/j.htct.2023.09.068

PP 19

LOCALIZED AL AMYLOIDOSIS OF THE URINARY BLADDER PRESENTING WITH PAINLESS MASSIVE HEMATURIA

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Objective: Amyloid deposits can be localized as a wall thickness or mass lesion either as AA amyloidosis or AL amyloidosis and may develop nearly on all organs. It is generally a mild, non–life-threatening entity with a good prognosis and rarely showed progression to systemic disease **Methodology:** We present two cases of urinary bladder localized AL amyloidosis that presents with painless hematuria and imaging studies mimic malignant tumors. Cystoscopic evaluation and biopsy were performed. **Results:** 63 years male presents with massive hematuria. Ultrasonography revealed a 17 × 14mm mass lesion on the bladder wall. Transurethral biopsy specimen histology showed lambda-type amyloid. The second patient was a 71-year-old male and evaluation for painless hematuria revealed a bladder wall mass lesion whose histology was consistent again with AL amyloidosis. Both patients did not have systemic amyloidosis signs and symptoms **Conclusion:** The literature did not include long-term outcomes. Usually, benign nature was depicted, and surgical removal is the preferred treatment. Since the contributing factors are not clear, we are concerned about the risk of recurrence and experienced the challenge of anti-plasma cell therapy giving or not.

https://doi.org/10.1016/j.htct.2023.09.069

PP 20

A Rare Cause Of Lymphadenopathy: Kikuchi Fujimoto

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Kikuchi Fujimoto Disease (KFD) is known as NecrotizingHistiocytic Lymphadenitis. It is a self-limiting clinicalsituation that is seen especially in women younger than 30 years of age. It is caracterized by progresses with multiplecervical lymphadenopathy and high fever, and regresses in 1-4 months. Its etiology is still not fully elucidated. It is thought tobe a hyperimmune reaction triggered by variousmicroorganisms (Herpesviruses, especially Ebstein BarrVirus). This is a disease that should be kept in mind in thepresence of fever and lymphadenopathy of unknown origin, and can be diagnosed by pathology after exclusion of otheretiological agents. Here, a case who applied to our hospitalwith swelling and pain in the neck is presented. Case: A previously healthy 13-year-old female patientpresented with complaints of swelling and pain in the neck. Inher history, it was learned that her complaint had been for 20 days. It was learned that she applied to an external center andused antibiotics with the diagnosis of acute lymphadenitis, but her complaint did not regress. There were no B symptoms. Inher resume, it was learned that she was born at term and thatshe did not have the medication she used all the time. Adenoidectomy was performed six years ago. There was nofeature in her family history. Physical examination revealedpalpable lymphadenopathy of approximately 3 cm in the rightposterior cervical region. The patient's blood count wasnormal. Sedimentation was 36 mm/hr. Acute phase reactantswere negative; peripheral smear was normal. EBV, CMV, hepatitis, toxoplasma, brucella, bartonella, tuberculosis testswere negative. The pediatric infection unit was consulted forfurther investigations. There was no mediastinal width on chest X-ray. Immunoglobulin levels were normal. The doublenegative T cell rate was 6.6%. Biopsy of the lesion andsimultaneous bone marrow was performed to the patient. As a result of the pathology, diffuse necrosis and apoptotic changeswere detected. The present findings were pathologicallycompatible with Kikuchi-Fujimoto. The patient is currentlybeing followed up with pediatric immunology. Conclusion: Clinical management of patients presenting withpalpable lymph node is very important. The diagnosis of lymphoma, which is one of the most common childhoodmalignancies, should definitely be kept in mind. Kikuchi-Fujimoto disease is extremely rare. It is very difficult toconsider them among the differential diagnoses. Our aim in presenting this case is to raise awareness about Kikuchi-Fujimoto disease in our daily clinical practice. KikuchiFujimoto disease should be among the differential diagnosesin patients with lymph node enlargement.

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PP 21

A RARE CAUSE OF CYANOSIS: HEMOGLOBIN KANSAS

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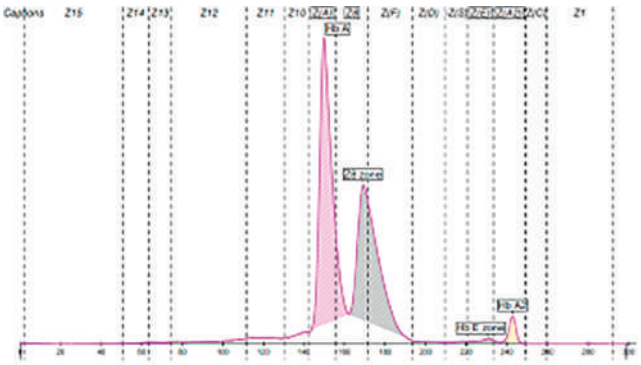
Objective: Hemoglobin Kansas is a variant of hemoglobin with low oxygen affinity and decreased heme-heme interaction. Patients with this variant may have asymptomatic cyanosis and polycythemia. We herein report a Hb Kansas case from Elazığ/Turkey. **Case report:** A 25-year-old male patient was consulted from the intensive care unit because of low oxygen saturation and peripheral cyanosis. Primary cardiac and pulmonary diseases were excluded in the tests performed before the hematology evaluation. His SpO2 was 40% in room air. Complete blood count was unremarkable except mild polycythemia (Hemoglobin (Hb), 16.9 g/dL; hematocrit, 47.6%; mean red blood cell volume, 94.4 fL; white blood cell count, 9600/mm3, and platelet count 207 × 109/L). **Methodology:** There was no evidence of hemolysis. An arterial blood gas analysis (under 8 L/min oxygen) showed that the arterial partial pressure of oxygen (PaO2) was 99.1 mmHg and the SaO2 was 61.4%. Both carboxyhemoglobin and methemoglobin levels were in normal range. Hb electrophoresis revealed an abnormal band between HbA and HBA2 in close proximity to the location of HbA (Figure A). Beta globin gene analysis was performed to determine the variant. **Results:** The HBB gene sequence analysis revealed a c.308A>C missense change resulting in substitution from asparagine to threonine at codon 103 (Hb Kansas). His daughter and father had the same clinic. **Conclusion:** Hb variants with low oxygen affinity could be considered in patients with unexplained cyanosis if there is dissociation between PaO2 and SaO2. Such patients do not require any special treatment and have a good prognosis. Considering the diagnosis will help prevent unnecessary investigations and treatments.



Haemoglobin Electrophoresis

Name	%	Normal Values %
Hb A	55.3	
Z8 zone	41.2	
Hb E zone	0.6	
Hb A2	2.9	

https://doi.org/10.1016/j.htct.2023.09.071

PP 22

CAN RADIOTHERAPY INDUCE A CLINICAL RESPONSE WITH OCCASIONAL LONG-TERM REMISSION IN RECURRENT GRANULOSA CELL TUMORS OF THE OVARY?

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Objective: Our objective was to review the impact of adjuvant radiotherapy on recurrent granulosa cell tumor of the ovary. **Case report:** Adult-type Granulosa cell tumors are uncommon neoplasms arising from the ovary's sex-cord stromal cells and account for 2-4% of all ovarian cancer. The hormonal features of AGCT explain the clinical manifestations for early diagnosis and recurrence prediction. Surgery is crucial for both initial and recurrent treatments, whereas adjuvant radiotherapy or chemotherapy therapy can induce clinical response and reasonable prevention of recurrence. **Methodology:** A 47-year-old Libyan woman had history of stage I AGCT of ovary diagnosed in 2012 after ovarian cystectomy, recure in 2016 with bilateral adnexal complex masses, fertility-sparing surgery was done followed by six cycles of chemotherapy then she starts hormonal therapy. In June 2021accedintal Para aortic lesion was discovered, but lost F/U. In January 2022, scans showed a right lateral vaginal vault lesion and other six lesions in the pelvis and abdomen, debulking of recurrent done. **Results:** Conventional radiotherapy to the whole pelvis by External beam was started using the linear accelerating machine, with a total radiotherapy dose of 45 grays (Gy) in 25 fractions for five weeks. No local recurrences, Nor lymph node, or systemic metastasis in serial CT scans of chest /abdomen /pelvis and MRI pelvis since January 2022 up to now. **Conclusion:** Local radiotherapy could be considered as adjuvant therapy in recurrent GCTS due to the high recurrence rate, especially post-incomplete surgical excision.

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PP 23

A CASE OF DAPSONE-INDUCED HEMOLYTİC ANEMİA RELATED TO G6PD ENZYME DEFİCİENCY

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Objective: Hemolytic anemia defines a group of anemias occurring due to the shortening of normal red blood cell (RBC)

lifespan due to factors extrinsic to RBCs or structural changes in RBCs. As a result of the increase in RBC hemolysis, anemia and associated clinical symptoms become manifest. Hemolytic anemias can be categorized under two broad titles: hereditary and acquired. Here, we present a case diagnosed with pemphigus vulgaris who was determined to have Glucose-6-phosphate dehydrogenase (G6PD) deficiency based on the tests performed subsequent to hemolytic anemia that occurred during dapsone therapy. **Case report:** 66 year-old female patient presented to the dermatology polyclinic with raised erythema and bullous lesions in a butterfly distribution on the face involving the eyelids. The patient was diagnosed with pemphigus vulgaris based on punch biopsy and, as treatment, was started on 2 × 50 mg dapsone (PO), 1 × 16 mg methylprednisolone (PO) and corticosteroid pomades. Blood parameters at diagnosis were as follows: leukocyte, 8.1 × 10^9/L (4.4-11); hemoglobin (Hgb), 12.3 gr/dl (12-16); thrombocyte, 270 × 10^9/L (142-424); MCV, 86 fl (80-100); LDH, 210 U/L (135-214); ALT, 22 U/L (0-33); AST, 16 U/L (0-32); direct bilirubin, 0.5 mg/dl (0-0.3); indirect bilirubin, 0.8 mg/dl (0.1-0.9); creatinine, 0.59 mg/dl (0.5-0.9); folate, 10 ng/ml (5.4-24); vitamin B_{12}, 310 ng/ml (210-910). The patient presented to the dermatology polyclinic 6 days after the onset of treatment due to fatigue, pallor, icterus of the sclerae. The patient was referred to the hematology polyclinic based on the following test results: Hgb, 3.8 gr/dl; leukocyte, 11 × 10^9/L; thrombocyte, 222 × 10^9/L; MCV, 108 fl; creatinine, 0.8 gr/dl; LDH, 810 U/L; indirect bilirubin, 6.4 mg/dl; direct bilirubin, 0.8 mg/dl. The patient's history and anamnesis did not include a similar condition that followed medication use or an operation. On physical examination; sclerae were icteric, skin was pale, and there was no organomegaly or peripheral lymphadenopathy. In addition, urine was dark in color. On peripheral blood smear; macrocytosis, anisocytosis-poikilocytosis, polychromasia and Heinz bodies were observed. Corrected reticulocyte was determined as 5.2% (0.5-2%); ANA, anti-dsDNA, direct Coombs (IgG) and indirect Coombs' tests were negative. The haptoglobulin level was determined as 8 mg/dl (30-200) and was below the reference range. As the present hemolytic anemia picture was reasoned to be associated with dapsone, the medication was stopped and 16 mg methylprednisolone was started. No pathological findings were determined on abdominal ultrasonography and lung radiography. Based on the perception that anemia was associated with dapsone, G6PD enzyme levels were examined. The patients' G6PD level was found as 3.52 IU/gHb (7.48-10.20 IU/gHb), and was below the reference. During follow-up, fatigue, subicterus and pallor improved. Hgb levels increased, LDH and indirect bilirubin levels showed a gradual decrease. Blood parameters after 10 days were as follows: Hgb 11,8, gr/dl; leukocyte, 7.6 × 10^9/L; thrombocyte, 234 × 10^9/L; MCV, 98 fl; creatinine, 0,6 gr/dl; LDH, 260 U/L; direct bilirubin, 0.42 mg/dl; indirect bilirubin, 0.44 mg/dl. **Conclusion:** Dapsone is used widely in the treatment of various disorders, most notably, dermatological disorders. In G6PD deficiency, using dapsone is risky and is associated with a high probability of hemolytic anemia occurrence. In this case presentation, we aimed to stress that hemolytic anemia encountered in a patient on dapsone would be linked to G6PD enzyme deficiency.

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Pediatric Hematology Abstract Categories

General Hemostasis / Thrombosis / Vascular Biology
PP 24

UNRAVELING BLOOD DONOR DEFERRAL TRENDS: A REAL-WORLD SINGLE-CENTER STUDY

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Backround: Enhancing blood safety and donor eligibility are vital in blood banking. We analyze our blood center's approach and Turkey's general strategy in this domain, focusing on identifying and mitigating the reasons for donor deferral. **Materials and Method:** We retrospectively evaluated data from 169,410 donors visiting Çukurova University Medical Faculty Blood Center from 2015 to 2021, including demographic, clinical, and laboratory information. We also compared this data with historical records from 2009 and 2011 obtained from Turkish conference papers. **Results and Conclusions:** Our analysis covered donors aged 18-65 years (mean 38 years) consisting of 91.1% males and 8.9% females. Blood type distribution was A Rh(+) 36.7%, O Rh(+) 29.5%, B Rh(+) 14.8%, and AB Rh(+) 7.6%. Only 3.6% of donors volunteered, while the rest had different donation reasons. A 72.3% successful donation rate was observed, but there was a 27.7% deferral rate, surpassing 2011′s 25.3% and 2009′s 18.2%. Deferrals were mostly due to anemia, recent medication use, elevated blood pressure, and vaccination history. Donor deferral aims to safeguard both donors and recipients against potential risks, underlining the importance of continual evaluation and management strategies to minimize deferral rates.

Key worlds:
Blood Donor Deferral
Blood Banking in Turkey
Donor Rejection Causes
Blood Donation Rates

https://doi.org/10.1016/j.htct.2023.09.074

PP 25

EVALUATION OF THROMBOSIS RISK FACTORS AND PROGNOSIS IN CHILDHOOD THROMBOSIS

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Objective: The aim of our study is to determine demographic data in patients with thrombosis in childhood to determine hereditary and/or acquired risk factors that cause thrombosis, to diagnose and treat thrombosis, to detect the complications related to thrombosis or treatment, to examine mortality and morbidity after thrombosis, and to evaluate the final status of the patients. **Methodology:** 160 cases diagnosed with thrombosis between the ages of 1 month and 18 years, who were followed up by the Pediatric Hematology and Oncology outpatient clinic of IstanbulSchool of Medicine, between 01-JAN-2012 and 01-JAN-2022 were analyzed, retrospectively. While obtaining the medical data of the patients, patient files and hospital information management systems were used. The obtained data were analyzed with IBM SPSS V23 computer program and $p<0.05$ was considered statistically significant. **Results:** Cerebral thrombosis was present in 33% of the cases, thrombosis in the lower extremity in 30.6% and upper extremity in 25.6%. At least one acquired or hereditary thrombosis risk factor was detected in 96.9% of the patients. Acquired risk factors were found in 81.2% of the patients, hereditary risk factors in 60.6% and both acquired and hereditary risk factors in 45% of the patients. Twenty (12.5%) patients were followed up without anticoagulant treatment.66.2% of the patients received prophylaxis **Conclusion:** In our study; the incidence of childhood thrombosis, acquired and inherited risk factors, treatment and complications of thrombosis were found to be compatible with the studies conducted in our country and in the world. Based on the frequency of inherited and acquired risk factors in every child with thrombosis, it is thought that these risk factors cannot be ignored. Conducting studies in a larger population, including the healthy control group, will contribute to the literature.

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Pediatric Hematology Abstract Categories

Red Blood Cell Disorders
PP 26

SLEEP QUALITY IN PATIENTS WITH B-THALASSAEMIA MAJOR

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Objective: INTRODUCTION AND PURPOSE: β-thalassaemia major (β-TM) is characterized by chronic anemia due to a genetic deficiency in hemoglobin production. The clinical findings of the disease include hepatosplenomegaly, enlargement and thinning of the bones with flattening of the nasal root, protrusion of the forehead and other facial bones resulting abnormal facial appearance. In this study, we aimed to examine sleep apnea and abnormal sleep quality in patients with β-TM that might occur as a result of structural facial defect. **Methodology:** METHODS AND MATERIALS: Two separate sleep-related questionnaires, pediatric sleep (PSQ) and pediatric sleep habits (PSHQ), were used to patients with β-TM who were followed in the pediatric hematology section of our hospital. Same questionnaires were applied to children in pediatric outpatient clinic who had no history of any chronic illness as a control group. The families included to the study were asked to fill questionnaires under the supervision of a clinical nurse. **Results:** FINDINGS: A total of 50 children with β-TM and 47 children as a control group were included in the study. No significant difference was found among the characteristics (age, gender, family education level) of both groups. Additionally, there was also no statistical difference between the total sleep duration of patients with β-TM and the control group. Similarly, no statistical difference was observed among the groups in the pediatric sleep apnea questionnaire. However, there were statistically significant higher scores in patients with β-TM compared to control group in the pediatric sleep habits questionnaire. In addition, the findings in the habit questionnaire scores did not change when the groups were compared by segregated age (i.e. 3-10 years old and 10-17 years old). **Conclusion:** DISCUSSION: The current study concluded that sleep apnea risk was not increased in patients with β-TM, but sleep quality was poor. No definite information exists about the cause of sleep-related disorders in patients with β-TM. Probably, the atypical facial structure resulting from nasopharyngeal extramedullary increased hematopoietic activity predisposes to sleep-related problems in patients with β-TM. It was also shown that the uvula-glossopharyngeal dimension was shorter in patients with thalassemia than in patients with no thalassemia. There is limited information in the literature with regard to sleep-related problems in children with β-TM. In a study consisted 120 patients with severe β-TM, the prevalence of obstructive sleep apnea was reported 8.3% and habitual snoring was 15.8%. Furthermore, an increase in periodic limb movement during sleep secondary to sleep fragmentation disorder had also reported in the same study.

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Pediatric Hematology Abstract Categories

Leukemia
PP 27

IS THERE AN ASSOCIATION BETWEEN PULMONARY EMBOLISM AND THE USE OF PEG-ASPARAGINASE IN CHILDREN WITH LEUKEMIA?

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We present two leukemic children who developed pulmonary thromboembolism (PTE) after using PEG-asparaginase.The first child, an eight-year-old boy, was diagnosed with T-acute lymphoblastic leukemia (ALL). The second child, a 6-year-old boy, was diagnosed with B-ALL.They developed PTE following induction phases of BFM protocol's.They were given PEG-asparaginase at a dose of 2500IU/m^2. Heparin was succesfully used in both cases.Physician may consider prophylactic anti-coagulants during induction.

https://doi.org/10.1016/j.htct.2023.09.077

PP 28

A PEDIATRIC CHRONIC EOSINOPHILIC LEUKEMIA CASE SUCCESFULLY TREATED WITH STEM CELL TRANSPLANTATION AFTER TRANSFORMATION TO ACUTE LYMPHOBLASTIC LEUKEMIA

Hasan Fatih Cakmaklı [1], Hatice Erkol Tuncer [1], Esra Pekpak Sahınoglu [2], Elif Unal Ince [1], Talia Ileri [1], Mehmet Ertem [1]

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Chronic eosinophilic leukemia (CEL) is an extremely severe and rare disease in childhood with a very poor prognosis, frequently transforms to acute leukemia in a few years, and once transformed median survival time is only 2 months. Here we present a 9-year-old boy with CEL, transformed to acute lymphoblastic leukemia 17 months after diagnosis and successfully treated with chemotherapy and unrelated stem cell transplantation, he is still in remission after 7 years without any chronic morbidities.

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PP 29

A COMPARATIVE STUDY OF CONVENTIONAL BLOOD CULTURE METHOD VS SEPSIS QPCR MX-30 ® PANEL IN PATIENTS WITH PEDIATRIC LEUKEMIA

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Objective: Acute leukemia is the most common pediatric hematological malignancy. Blood stream infections (BSI) are severe complications in these patients during chemotherapy. In patients with leukemia, early detection of the infectious agent and rapid initiation of appropriate treatment increase the success of treatment and reduce the death rate. In this study, we aimed to compare the causative microorganism and detection time with classical blood culture and sepsis qPCR MX-30 panel **Methodology:** Patients aged <18 years, diagnosed with acute leukemia from March-July 2023 were enrolled. Clinical presentations, demographic features, and microbiological findings were retrospectively reviewed. Blood culture and sepsis PCR panel were taken simultaneously from the first day of febrile neutropenia or fever persisted. **Results:** In total, 327 samples of 48 patients evaluated. No causative agent was detected in both blood culture and sepsis PCR panel in 262 (%80.2) samples. Although blood culture was negative in 19 (%5.8) samples, the sepsis PCR panel identified some microorganisms. Culture positivity was detected in 29 (%8.8) samples, while the sepsis PCR panel results were negative. Simultaneous identification was detected in 17 (%5.2) samples. **Conclusion:** In our study, we found sepsis panel sensitivity as 90% and positive predictive value as 93%. Although conventional blood culture is a more accessible, inexpensive and reliable method for detecting the causative agent in leukemia patients, it will be useful due to early results with the sepsis qPCR MX-30 panel.

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Pediatric Hematology Abstract Categories

Hemoglobinopathies (Sickle Cell Disease, Thalassemia etc. . .)
PP 30

EVALUATION OF GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY IN PATIENTS WITH SICKLE CELL ANEMIA

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Objective: The aim of this study was to evaluate patients with a diagnosis of Sickle Cell Anemia (SCA) for Glucose-6-Phosphate Dehydrogenase (G6PD) enzyme deficiency. **Methodology:** In our study, patients diagnosed with SCA who presented to the Pediatric Hematology and Oncology Clinic at the Adana Faculty of Medicine, Health Sciences University, Adana City Training and Research Hospital, between August 1, 2022, and August 1, 2023, were evaluated. G6PD enzyme data from routine tests performed for the patients were recorded from the patient files or the hospital system. **Results:** A total of 23 patients diagnosed with Sickle Cell Anemia (SCA) were included in the study. 65.2% (n=15) of the patients were female, and 34.8% (n=8) were male. The ages of

the cases ranged from 4 to 30 years, with a median age of 12. Among the cases, 20 were within the age range of 0-18 years (87%), while 3 cases (13%) were over 18 years old. The median G6PD value was found to be 26.28 U/g Hb (2.22-36.98). G6PD deficiency was detected in 2 patients (8.7%), while it was not detected in 21 patient **Conclusion:** Screening for G6PD deficiency is necessary in patients with Sickle Cell Anemia (SCA) to prevent deterioration of their condition during treatment. The co-inheritance of both diseases can worsen hemolysis in SCA patients. Therefore, caution should be exercised in drug selection for SCA patients with G6PD enzyme deficiency.

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Pediatric Hematology Abstract Categories

Stem Cell Transplantation
PP 31

VIRAL INFECTIONS IN PEDIATRIC HEAMTOPOIETIC STEM CELL TRANSPLANT PATIENTS

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Objective: The aim of this study is to determine the frequency and causative virus of viral infections seen after hematopoietic stem cell transplantation (HSCT) in pedaitric patients, the effect of the immunosuppresive agents and antiviral prophylaxis to viral infections, to evaluate the efficacy of antiviral treatment used for viral infections, the impact of viral infections on mortality after HSCT. **Methodology:** 295 pediatric HSCT patients between April 2010-August 2022 from a Children's Stem Cell Transplantation Unit were included. Patients' demographic info, HSCT-related data, GVHD prophylaxis regime, antiviral prophylaxis after HSCT, the time span of prophylaxes applied, 27 different viral infections diagnosed from serum, stool and nasopharyngeal swab samples after HSCT, their frequencies and their timespans, patients' mortalities were documented from patients' files. **Results:** 68% of 295 patients were documented with a viral infection, most common isolates are CMV 26%, EBV 11%, ADV 9%, COVID-19 9%, BKV 7%, VZV 6%. Mortality rates are CMV 27%, EBV 38%, ADV 47%. Virus detection after HSCT is 1,10 months for CMV, 2,33 for EBV, 1,16 for ADV, 11 for VZV, 1 for BKV. The most common co-infections documented are CMV/EBV. For CMV treatment 69% valgancyclovir, 54% gancyclovir, 7% foscarnet is used. 53% of VZV infections were seen after acyclovir prophylaxis is stopped. **Conclusion:** HSCT is a curative treatment for a variety of hematological diseases, immune deficiencies, solid organ tumors, some genetic and metabolic disorders. With preparations before HSCT and the GVHD prophylaxis after HSCT, patients become immunosuppressive and susceptible to opportunistic viral infections. Viral infections have an impact on mortality, and it is beneficial to know the common viral agents, when they are detected, viruses that are frequently detected together, and their treatment responses.

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Pediatric Hematology Abstract Categories

Quality improvement / Patient safety
PP 32

EVALUATION OF MENSTRUATION RELATED QUALITY OF LIFE IN ADOLESCENTS WITH ABNORMAL UTERINE BLEEDING

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Objective: Abnormal uterine bleeding (AUB) is a common menstrual problem in adolescent girls. Every adolescent with AUB should also be evaluated for bleeding disorders. This study evaluated adolescent girls with AUB, with and without bleeding disorders, as well as their coping skills and menstruation specific quality of life compared to their peers. **Methodology:** The research was conducted in Ankara Bilkent City Hospital, Department of Pediatric Hematology and Adolescent Health as a prospective cross sectional study. The aim of this study was to determine coping skills and menstruation-related quality of life of adolescent girls with AUB according to Pediatric Bleeding Questionnaire Scoring and Menstrual Assessment Chart. 167 patients with AUB and 165 control group, were included in our study. Each patient was evaluated by the hematology department in terms of bleeding disorder. The participants completed the Adolescent Coping Scale (CEIBO), the Children's Quality of Life Scale (PedsQL) and a scale developed by the researchers to determine the directly menstruation related quality of life (MRQL). **Results:** Bleeding disorder was found in 10.1% of adolescents diagnosed with AUB. When the CIBS sub-dimensions were compared between the patient and control groups, no significant difference was found between them (p=0,056). In adolescents with AUK; total quality of life score, and quality of life score related to school and physical health functionality were found to be statistically significantly lower than the adolescents in the control group (p=0,004; p=0,007). When the adolescents with AUK were compared with the adolescents in the control group, there was no significant difference between the social functionality and emotional functionality quality of life sub-dimensions (p=0,116; 0,063). Menstruation related quality of life was found to be significantly lower in adolescents with AUB (p<0,001). The quality of life of adolescents with severe AUB was found to be lower than those with moderate and mild AUB (p=0,026) .When the total PedsQL scores were compared between the patient, control, the patient group's score was significantly lower than the control group (p=0,012). However, there was no significant difference between the patients

with and without bleeding disorders in terms of quality of life and other scales. (p>0,05) Menstruation related quality of life was found to be significantly lower in adolescents with AUB than in those with bleeding disorders and the control group. (p<0,001). **Conclusion:** Although the coping skills of adolescents with AUB are similar to their peers, their quality of life is significantly impaired due to heavy menstrual bleeding. In addition to the treatment for the anemia, it is important to reduce their bleeding for their comfort in their school and social life. Also MRQL, which has been specially developed for this research, can be used for screening purposes due to its short and consistent results in primary health centers, pediatric clinics and hematology clinics.

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Pediatric Oncology Abstract Categories

Neuroblastoma
PP 33

NEUROBLASTOMA AND ASSOCIATED DISORDERS, A SINGLE CENTER EXPERIENCE

Arzu Yazal Erdem [1], Selma Çakmakcı [1], Seda Şahin [1], Derya Özyörük [1], Neriman Sarı [1], Suna Emir [2], İnci Ergürhan İlhan [1]

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Objective: The genetic factors involved in development of neuroblastoma are not yet well understood. The most common somatic genomic alterations in neuroblastomas are recurrent chromosomal copy number alterations. In addition a number of genes with germline mutations commonpolymorphisms have been identified that raise the risk of developing neuroblastoma, it is unclear what role they play. With this aim, we investigated the syndromes, diseases and abnormalities accompanying our neuroblastoma patients. **Case report Methodology:** The files of patients with neuroblastoma in Ankara Dışkapı Children's Hospital, Ankara Oncology Hospital, and Ankara City Hospital between 1993 and 2023 were retrospectively analyzed. Data collected from the files included the age, sex, pathological findings, physical examination findings, imaging findings and follow-up time. **Results:** The files of 194 patients diagnosed with neuroblastoma were retrospectively evaluated, and distinct abnormalities and syndromes were noted in 11 patients (0.56%). The patient characteristics were presented in the Table1. Heterochromia have been known in association with NB. Neuroblastomas are rare per se in the setting of NF1 (0.2% of all NBs) and even if compared to the overall frequency of malignancies in NF1 (i.e., 14.7%). Paraneoplastic syndromes including opsoclonus-myoclonus-ataxia syndro **Conclusion:** Here we report on a new patient with Kabuki syndrome and a germline variant in KMT2D who developed a neuroblastoma. Including our patient literature review identifed 19 patients with Kabuki syndrome and a malignancy. Although we found no strong arguments pointing towards KS as a tumor predisposition syndrome, based on the small numbers any relation cannot be fully excluded. As the genetics of neuroblastoma become understood in syndromic patients, steps towards intervention may be successful.

Patient no	Age at diagnosis/ gender	Syndrome/ disease	Histology	Follow-up time (year)
1	8y,F	MMR+NF type 1	GNB	3
2	1,5y, M	Heterochromia	NB	13
3	2,5y, F	Heterochromia	NB	13
4	2y, M	Hypotonic infant	GNB	6
5	12y, F	Hereditary sferocytosis	GN	12
6	1y, M	Vertebral fusion anomalies, syndactily	NB	3,5
7	9y, F	Congenital C3 deficiency	GNB	3
8	1.5y, F	Congenital adrenal hyperplasia	GNB	2,5
9	7y, F	Kabuki syndrome	GNB	0,25
10	2y, F	OMAS	GNB	5
11	1y, M	OMAS	GNB	12

Abbreviations:
GN: ganglioneuroma
GNB: ganglioneuroblastoma
NB: neuroblastoma
NF: neurofibromatosis
MMR: mental motor retardation
OMAS: opsoclonus myoclonus ataxia syndrome

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Pediatric Oncology Abstract Categories

Rare Tumours and Histiocytosis
PP 34

TWO RARE CASES OF SUBGLOTTIC HEMANGIOMA TREATED WITH PROPRANOLOL

Melda Berber Hamamcı [1], Şule Yeşil [1], Firdevs Aydın [1], Gülcan Erbaş [2], Deniz Tuğcu [2], Şifa Şahin [2], Zuhal Bayramoğlu [3], Yasin Ateş [2], Serap Karaman [2], Hikmet Gülşah Yıldız [2], Hakan Kocaman [4], Elif Dede [5], Ayper Somer [5], Ayşegül Ünüvar [2], Zeynep Karakaş [2]

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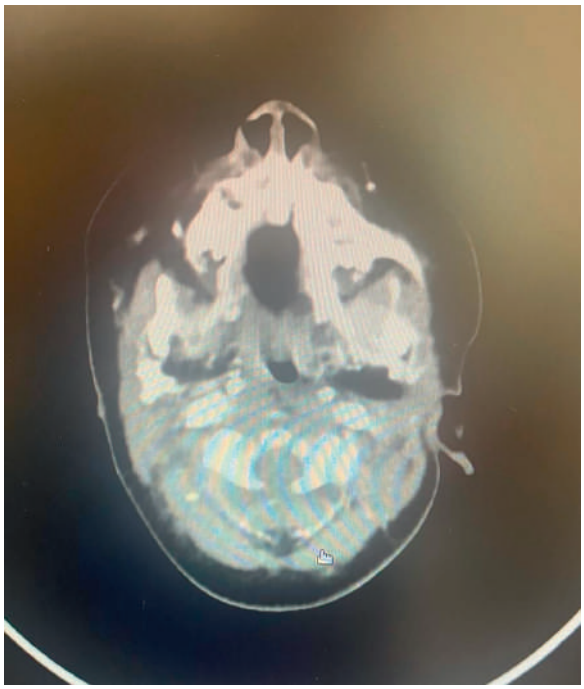
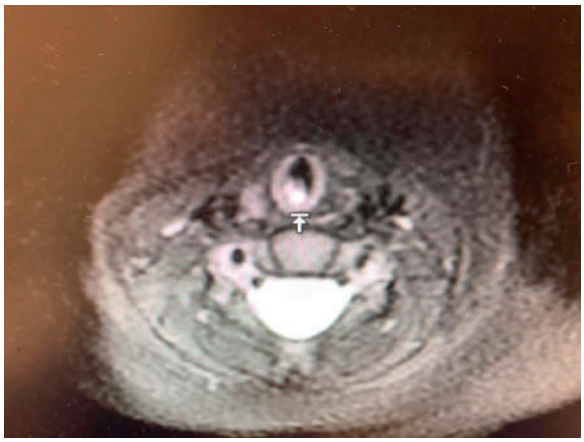
Case report: The 22-month-old male and 15-day-old female patients presented with persistent stridor since birth. Tracheoscopy of the first patient revealed a 90% obstructing hemangioma in the subglottic area, while the second patient's CT scan showed a hemangioma at the subglottic level. Both patients were initiated on propranolol therapy. These cases highlight the significance of subglottic hemangioma as a treatable cause of stridor in infants and emphasize the importance of propranolol treatment.





https://doi.org/10.1016/j.htct.2023.09.084

PP 35

A RARE INTERSECTİON: COEXİSTENCE OF BREAST CANCER AND SİCKLE CELL DİSEASE İN A 40- YEAR-OLD FEMALE - A CASE REPORT

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Background: Breast cancer, a prevalent malignancy in women, and sickle cell disease (SCD), a genetic disorder affecting red blood cells, are both well-understood individually. However, their coexistence is rare and presents unique challenges in diagnosis, treatment, and management. The complex interplay between these two conditions necessitates a tailored approach to care. The report focuses on a case of coexistence of breast cancer and sickle cell disease in a 40 - year-old female. **Case Presentation:** A 40-year-old female patient, diagnosed with SCD and managed with 20 mg/kg hydroxyurea, experiencing 1-2 mild painful crises annually and requiring 1-2 units of transfusion yearly, presented with swelling in the right breast in October 2022. Initial MRI revealed widespread edematous changes in the right breast parenchyma and multiple lymph nodes in the right axilla. Follow-up ultrasound in December 2022 detected an ill-defined hypoechoic area in the right breast and lymphadenopathies. A tru-cut biopsy confirmed invasive ductal carcinoma. PET scan showed no metastatic focus, but cranial imaging revealed an aneurysmatic dilation in the left ICA cavernous segment. The patient's biopsy material was re-examined, showing 90% positive estrogen receptor, 60% positive progesterone receptor, Cerb2:1 positive, E-cadherin positive, and a Ki-67 proliferation index of 10%. The patient underwent neoadjuvant chemotherapy followed by modified radical mastectomy surgery, and adjuvant RT was planned with radiation oncology. **Comments:** The coexistence of breast cancer and SCD in this case underscores the importance of an integrated approach to diagnosis and treatment. The rarity of this coexistence in the literature highlights the need for further research to understand the specific interactions between these diseases. The case also emphasizes the necessity of collaboration between oncology, hematology, and other specialties to develop effective therapeutic strategies tailored to the unique needs of patients affected by both conditions.

Keywords:
Breast Cancer
Sickle Cell Disease
Sicle Cell Anemia
Invasive Ductal Carcinoma
Lymphadenopathies,

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Pediatric Oncology Abstract Categories

Survivorship and Late side effects
PP 36

SECONDARY BRAIN TUMORS IN THE SURVIVORS OF CHILDHOOD LEUKEMIA

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Long term survivors of leukemia increasingly experience late effects many years after treatment. Secondary malignant neoplasms (SMNs) after ALL treatment are AML, myelodysplastic syndrome, lymphomas, CNS tumors, carcinomas and sarcomas. In the literature, CNS tumors, either meningioma or non-meningioma tumors constitute 21.5% of the SMNs in a large pediatric leukemia series. The latent period is median 15 years for meningioma and 8 years for other CNS tumors. Here in, we report three leukemia survivors of whom two developed meningiomas and one glioblastoma multiforme in the long-term period. A 3-year-old girl with T-cell ALL was treated by ALL BFM-95 protocol between 2017-2019. She also received 12 Gy of prophylactic cranial irradiation before maintenance treatment. In April 2019, at the age of 22, she developed headache, vomiting and blurred vision. CT and MRI scans revealed an extraaxial mass in the right frontal region which was compressing lateral ventricle. She, then, underwent a total excision of the tumor. The pathology was atypical meningioma (grade II). No further therapy was given. A 3-year-old with T-cell ALL was given ALL IC-BFM 2002 protocol between 2010-2012. He also received 12 Gy of prophylactic cranial irradiation before maintenance treatment. The patient remained disease-free until June 2017 when he presented with generalized tonic-clonic seizures. His MRI scan showed an intraaxial lesion in the right frontal region. He underwent a biopsy that revealed an anaplastic astrocytoma. He was started cranial irradiation and temozolomide treatment. In the follow-up, the tumor progressed and the patient deceased. A 3-year-old girl with AML-M2 was treated by AML-BFM-98 protocol between 2005-2007. Before maintenance treatment she was given prophylactic cranial irradiation as 18 Gy. In 2020, she developed headache and somnolance at the age of 19. She, therefore, underwent a cranial MRI scanning that demonstrated a frontal mass. She was operated and the mass was removed totally. The pathology was grade I meningioma. She was given no further treatment. The incidence of secondary brain tumors in ALL is higher than that in AML. The exact causative mechanism is uncertain, however irradiation itself or genetic predisposition may be responsible for the pathogenesis of these type of tumors. In our two meningioma cases, there was no clinical signs of neurofibromatosis as an underlying genetic predisposition to secondary cancer. Histopathologically, gliomas are more common tumors than meningiomas in ALL survivors. More cases of high-grade gliomas were reported than low-grade gliomas in this population. WHO grade-I meningiomas are also frequent subtypes in ALL survivors.. In a large series of AML-BFM-87 and AML-BFM-93 treatment protocols, the authors reported only one case without histology detail. The cases presented here have highlighted the importance of long-term follow-up of leukemia survivors in terms of development of secondary cranial neoplasms.

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