HEMATOLOGY, TRANSFUSION AND CELL THERAPY

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ORAL PRESENTATIONS

ADULT HEMATOLOGY ABSTRACT CATEGORIES

ACUTE LEUKEMIA

OP 01

THE ACUTE LYMPHOBLASTIC LEUKEMIA OF DOWN SYNDROME

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Objective: Down syndrome (DS) is a genetic disorder caused by the presence of a third copy of chromosome 21.It is usually associated with physical growth delays, mild to moderate intellectual disability, and characteristic facial features .Children with DS are at an elevated risk of leukemia, especially myeloid leukemia. On the other hand, children with DS are at a 20-fold increased risk for acute lymphoblastic leukemia (ALL).In our case, we presented a patient with DS who was diagnosed with ALL. **Case report:** 19-year-old male was admitted to the emergency department due to abdominal pain.On his physical examination,splenomegaly was detected.In laboratory examinations; kidney and liver function tests were normal,lactate dehydrogenase:372 U/L,uric acid: 5.4 mg/dl, white blood cell:25000 × 106/L,lymphocyte: 15780 × 106/L, neutrophil:1140 × 106/L,hemoglobin:10 gr/dl, thrombocyte:12000 × 106/L,coagulation tests were normal and in peripheral blood smear evaluation,90% blast cells were detected. **Methodology:** Peripheral blood flow cytometry evaluation was compatible with B-ALL(TdT,CD19,CD10,CD34, cCD79a,CD58,CD9,CD38,CD123,CD20,CD81,CD22 positivity in atypical cells).Bone marrow biopsy was hypercellular.There was diffuse blastic cell infiltration,which stained extensively with TDT,CD79a.Chromosomal analysis is 47XY,+21 and t (12,21) (p13.2;q22.12) (ETV6/RUNX1) (FISH) and 14q32.33 (IGH) FISH were positive,t(9;22) P190 -p210,t(4;11), t(1;19),11q23 were negative.The risk classification was standard risk. **Results:** AUGMENTED BFM induction chemotherapy protocol was started.Pancreatitis was developed after peg-asparaginase and chemotherapy-related hepatotoxicity(grade 1) was developed.Central nervous system prophylaxis(intrathecal methotrexate) was applied.The control bone marrow biopsy performed after induction was normocellular,the blast rate was <5%.BFM standard risk first consolidation chemotherapy protocol was started.He died of septic shock on the eighteenth day of the first consolidation treatment. **Conclusion:** Cases of DS-ALL cases are at greater risk for serious side effects from chemotherapeutics,mortality and recurrence than non DS-ALL.Because children with DS have a higher incidence of treatment-related toxicity,survival rates are lower than non-DS children.During ALL induction chemotherapy life-threatening side effects are tumor lysis syndrome,thrombosis, bleeding and infection.In the UKALL 2003 study,DS associated with a significantly increased risk of death from sepsis during chemotherapy.

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LYMPHOMA

OP 02

LOW INCIDENCE OF CENTRAL NERVOUS SYSTEM (CNS) RELAPSE OF DIFFUSE LARGE B-CELL LYMPHOMA DESPITE LIMITED USE OF INTRATHECAL PROPHYLAXIS

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Objective: Diffuse large B cell lymphoma (DLBCL) is the commonest sub type of non-Hodgkin's lymphoma (NHL) accounting for 30–50 % of NHL cases. Around 2% to 10% of patients with diffuse large B-cell lymphoma (DLBCL) experience central nervous system (CNS) relapse after initial therapy which

is associated with a poor prognosis and most often a fatal outcome. The incidence of CNS relapse can vary from <1% in younger, good-risk patients, to around 30% in patients with multiple risk factors, however, the relapse risk was reported to be lower in the rituximab era in some studies. Moreover, optimal modality of CNS prophylaxis remains to be defined, with both systemic and intrathecal (IT) chemotherapy being widely used. As the incidence of CNS relapse and type of prophylaxis used varies in different reports, it is important to study this risk in different populations to implement optimal prophylaxis strategies. The Objectives of this study was to evaluate the incidence of CNS relapse in DLBCL patients at our institution and to study risk factors and the type and role of CNS prophylaxis. **Methodology:** We retrospectively analyzed patients diagnosed with DLBCL at King Khalid University Hospital, Riyadh, from January 2011 to June 2019. Data were collected from computerized hospital information system and from the files of the patients. Variables studied included age at diagnosis, stage at diagnosis, international prognostic index (IPI) and CNS-IPI score, site(s) of extra-nodal involvement, type of chemotherapy received, CNS prophylaxis and CNS relapse. CNS prophylaxis was administered on the basis of presence of high-risk features like presence of ≥2 extranodal sites, involvement of bone marrow, bone, testes, nasopharynx and paranasal sinuses. Patients with presence of CNS involvement at diagnosis and primary CNS lymphoma were excluded. **Results:** A total of 101 patients were diagnosed with DLBCL during the study period. There were 58 males and 43 females with a median age of 56 (range: 16-87) years. Ann Arbor stage of I-IV was assigned in 9, 21, 17 and 50 patients, respectively. The lung was the most common extranodal site involved in 27 (26.7%) patients, and liver and bone marrow involved in 20 (19.8%) patients each. Gastrointestinal tract was involved in 9 (8.9%) patients, kidneys in 5 (4.95%), breast in 4 (4%), and testis and adrenal in 2 (2%) patients each. Twenty-five (24.75%) patients had high risk CNS-IPI score, 44 (43.5%) had intermediate risk score and 32 (31.7%) had low risk score. Ninety-four (93%) patients received R-CHOP chemotherapy while rest of the patients received other types of chemotherapy, mostly a milder regimen (R-CVP), because of comorbidities and poor performance status. Sixteen patients received CNS prophylaxis, which was IT methotrexate (MTX) ± cytarabine/hydrocortisone in all patients. Nine of 25 (36%) patients with high-risk CNS-IPI score did not receive CNS prophylaxis. After a median follow up of 36 months (range 4-114), 2 (2%) patients developed CNS relapse and died shortly after this diagnosis. Both the patients with CNS relapse had high risk CNS-IPI score and did not receive CNS prophylaxis. **Conclusion:** CNS relapse of DLBCL was uncommon in this patient population despite limited use of IT CNS prophylaxis in high-risk patients. Low incidence of CNS relapse in many high-risk patients despite limited use of IT prophylaxis may be related to rituximab use and/or other factors. Our data indicate that IT CNS prophylaxis may be adequate for DLBCL patients at high risk of CNS relapse.

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OP 03

AN UPDATED OF PIONEER PROJECT TO COLLECT DATA OF T-CELL NHL PATIENTS AMONG FIVE REGIONS OF BRAZIL. T-CELL BRAZIL PROJECT

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Objective: T-cell Brazil project started in April 2017 an ambispective study focusing to collecting epidemiological and clinical data from the most frequent subtypes of PTCL. Our goals are to obtain the frequency of subtypes by the five Brazilian macro regions; to investigate the clinical and biology characteristic; to create a routine pathological revision and to evaluate the OS, EFS in 5 years of follow-up. **Methodology:** Thirteen nine centers had approved by their Ethical Committee and using REDcap Platform by Vanderbilt are registering their cases. Descriptive and bivariate analyses, then it was applied Kaplan-Meier method and log-rank test to obtain survival estimates, using IBM-SPSS v.24 **Results:** The median age was 55 years (19-95); 56% male; Almost 72% had advanced stages, 28% ECOG ≥ 2; the distribution of main subtypes was: 31% PTCL-NOS; 18% ALCL, ALK-; 16% ATL; 13% ENKTL nasal and nasal type; 11% AITL; 7% ALCL, ALK+; 6% others (Table 1). 50% of patients were alive and the 24-month PFS and OS was 36% and 50%, respectively. OS by main subtypes was 48% PTCL-NOS; 61% ALCL, ALK-; 33% ATL; 46% ENKTL nasal/nasal type; 48% AITL; 80% ALCL, ALK+. **Conclusion:** This is the first experience cover all over the country, focusing also an educational and of interchanging experience network among the multidisciplinary health team in Brazil. The target of 500 was exceeded; however, the registry will go on until December as planned. All cases have been reviewed both in the registry and by pathologist Committee, and we esteem some cases

will be excluded for different reasons and anyway it will help for future analyses if the number of registers is higher.

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MYELOMA

OP 04

UPDATED PROGRESSION-FREE SURVIVAL (PFS) AND DEPTH OF RESPONSE IN IKEMA, A RANDOMIZED PHASE 3 TRIAL OF ISATUXIMAB, CARFILZOMIB AND DEXAMETHASONE (ISA-KD) VS KD IN RELAPSED MULTIPLE MYELOMA (MM)

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Objective: The anti-CD38 antibody Isa in combination with Kd is approved in various countries for patients (pts) with relapsed MM after ≥1 prior therapy, based on primary interim analysis (IA) of the Phase 3 IKEMA study (NCT03275285). Here we report updated efficacy and safety Results from IKEMA. **Methodology:** This prespecified final analysis (Isa-Kd 179, Kd 123 pts) evaluated updated PFS (primary endpoint), PFS2, CR rate, MRD- rate, and MRD- and CR rate in ITT population, and safety with 2 additional years of follow-up. Isa 10mg/kg was given IV qw for 4 wks and then q2w; Kd 20/56mg/m^2 biw, 3/4 weeks. Hydrashift Isa IF assay was used to rule out potential Isa interference in CR determination. At cutoff (14Jan2022; median follow-up 44 mo), 49 (27.4%) Isa-Kd, 11 (8.9%) Kd pts were still on treatment. **Results:** Updated PFS was consistent with primary IA Results, showing significant benefit of Isa-Kd (vs Kd): PFS HR 0.58; PFS2 HR 0.68. Final CR rate (Isa-Kd vs Kd) was 44.1% vs 28.5%, MRD- rate 33.5% vs 15.4%, MRD- and CR rate 26.3% vs 12.2% (***Table***). Serious TEAEs were reported in 70.1% Isa-Kd vs 59.8% Kd pts. The most common, any-grade non-hematologic TEAEs in Isa-Kd were infusion reactions (45.8%), diarrhea (39.5%), hypertension (37.9%) and upper respiratory tract infection (37.3%). **Conclusion:** These Results show unprecedented mPFS, CR rate, MRD- and MRD- CR rates in a non-lenalidomide containing regimen with benefit maintained through subsequent therapies and a manageable safety profile. Safety profiles and efficacy Results in both arms were consistent with prior IKEMA findings. Our findings support Isa-Kd as a standard of care treatment for pts with relapsed MM.

	Isa-Kd n=179	Kd	
Median PFS, months	35.7 (28.8-44.0)	19.2 (15.8-25.0)	HR (95.4% CI) 0.58 (0.42-0.79)
Median, PFS2, months	47.2 (38.1-NC)	35.6 (34.0-40.5)	HR (95% CI) 0.68 (0.50-0.94)
	n (%) 95% CI	n (%) 95% CI	odds ratio 95% CI
ORR	155 (86.6) 0.81-0.91	103 (83.7) 0.76-0.90	-
CR	79 (44.1) 0.37-0.52	35 (28.5) 0.21-0.37	2.09 1.26-3.48
MRD-rate	60 (33.5) 0.27-0.41	19 (15.4) 0.10-0.23	2.78 1.55-4.99
MRD and CR rate	47 (26.3) 0.20-0.33	15 (12.2) 0.07-0.19	2.57 1.35-4.88

Table: Efficacy (ITT)
CI confidence Interval, HR hazard ratio, ITT intent to treat, NC not calculable, ORR overall response rate

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STEM CELL TRANSPLANT

OP 05

PEDIATRIC ACUTE MYELOID LEUKEMIA (AML): NOTCH1 ACTIVATION INFLUENCING PROGNOSIS THROUGH TRANSFORMING GROWTH FACTOR-B (TGF-BETA) / SETBP1; REPORT OF A PILOT STUDY FROM SAUDI ARABIA

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Objective: NOTCH1 is now established to play a key role in the prognosis of several hematological malignancies. Notch proteins are multifaceted and involved in several key cellular functions with extensive crosstalk with other critical pathways; therefore, it is important to investigate NOTCH1 expression and its influence on other oncogenic pathways molecules in AML. In this pilot study, we correlated NOTCH1 and associated pathway expression patterns among childhood AML patients and correlated it with hematological parameters and overall survival (OS) data. **Methodology:** RNA from diagnostic BM biopsies (n=35) were subjected to expression analysis employing nCounter Pan-Cancer pathway panel by Nanostring technologies. Laboratory and clinical data were correlated with expression of NOTCH1 and several other oncogenic signaling pathways (n=780). nSolver software v3 and SPSS software v24.0 were utilized for statistical evaluation. Hierarchical clustering and principle component analyses were performed employing Qlucore Omics Explorer v3.2. **Results:** 35 -AML patients (median age 8 yrs., range <1-18 yrs.) were dichotomized into low NOTCH1 (17/35; 49%) and high NOTCH1 (18/35; 51%) groups based on receiver operating characteristic (ROC) curve analysis (74% AUC; 82% sensitivity /68% specificity). Age, gender, hematological data or molecular risk factors (FLT3 mutation/molecular fusion) exposed no significant differences across these two distinct NOTCH1expression groups (P > 0 .05). High NOTCH1 expression was linked with high expression of NOTCH1 legend (Dll1) (P<0.001/fold >2.5). Our data also showed that high NOTCH1 mRNA is interrelated with heightened expression of positive regulator of the NOTCH signaling pathway (DTX1/DTX3). High NOTCH1 samples also showed high expression of TGRF-b associated protein SETBP1(P<0.001/fold >2.5) (Figure 1A). The level of NOTCH1 expression did not correlate with mortality {5/17 (29%) vs. 6/17; (35%) P > 0.05}. Low NOTCH1 expressers showed better OS {740 days vs. 579 days; log-rank P=< 0.007; HR 6.3 (1.36-29.26)} **Conclusion:** Our pilot study identified high Notch1 expression through canonical pathway as an important poor prognostic marker among pediatric AML patients which is independent of conventional prognostic markers and can provide insights into novel potential therapeutic target. Our study has identified that high expression of the molecules linked with NOTCH1 pathway are an important poor prognostic marker among childhood AML patients. NOTCH1 expression also shows cross talk with several other signal transduction pathways especially TGFb / SETBP1 which are also linked with poor prognosis.

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OP 06

EVALUATION OF COVID-19 FEAR AND QUALITY OF LIFE IN PATIENTS WITH HEMATOPOIETIC STEM CELL TRANSPLANTATION DURING THE COVID-19 PANDEMIC

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Objective: The coronavirus disease 2019 (COVID-19) pandemic has an impact on physical health, but also has effects on mental health. With the COVID-19 pandemic, the level of fear increases and fear triggers many psychological diseases such as depression. We aimed to determine the COVID-19 fear situation in hematopoietic stem cell transplantation (HSCT) patients and to examine its relationship with the quality of life. **Methodology:** In this prospective study, 64 patients who underwent HSCT during the pandemic (between 11 March 2020 and 31 December 2020) were included. The COVID-19 fear situation was evaluated with the Fear of COVID-19 Scale (FCV-19S). Quality of life was evaluated with the European Organization for Quality of Life Research and Treatment Core Questionnaire (EORTC QLQ-C30) (version 3). **Results:** The median FCV-19S score was 16.5 (12.0-22.0). The FCV-19S score was significantly higher in urban residents than rural residents (19.0 (15.0-23.5) vs 14.0 (9.0-22.0) (p=0.44). The general health score was 59.64 ± 20.04. The strongest positive correlation between fear level and quality of life was found in emotional function (r=0.474, p <0.01). In addition, a weak, significant, positive correlation was observed between role function, nausea-vomiting, pain, anorexia, and fear level. **Conclusion:** FCV-19S is a short, safe and valid tool that can be used to determine the COVID-19 fear level in vulnerable patient groups such as HSCT patients and to direct them to the necessary psycho-oncological support.

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OP 07

UMBILICAL CORD BLOOD (UCB) AND BONE MARROW (BM) AS A SOURCE OF NATURAL KILLERS (NK) FOR KIR-ALLOREACTIVE ADOPTIVE IMMUNOTHERAPY (KIR-AI)

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Objective: NK are innate lymphoid cells with the ability to rapidly recognize and exhibit cytotoxicity toward tumor and virus infected cells in HLA-independent manner without prior activation. KIR-AI is the next promising step after KIR-alloreactive NMAC alloBM transplantation (not only in hematology). We evaluate NK amount, the balance of activating and inhibitory receptors (rp) of different sources, outcomes of KIR-AI UCB/BM. **Methodology:** NK UCB, BM, peripheral blood (PB) were evaluated by flow cytometry (CD3, 7, 16, 56, 94, NKG2A),

KIR by PCR. Mathematical model was developed for evaluation the balance of activating and inhibitory rp as an index of cytotoxic activity (**ICA**) of mature NK. To select donor (dn) for KIR-AI we investigate med 3 samples (range 3-8) BM/UCB. The indication - salvage therapy, ECOG>3. BM-dn with low ICA were excluded. Lymphodepletion included CyFlu (up to 3 d), both BM (12 pts) and UCB (11 pts). **Results:** NK UCB ranged 5-56% (med 16) of lymphocytes. No any differences between NK -UCB and BM (similar to PB). For dn and pts no ICA differences by sex and age, ICA depend on depression and virus. For pts no ICA difference by type of cancer, germinal mutations, but strong correlation with nearest outcome of cancer. FU med 9 mo (2-52). OS (11 pts, 14 UCB-transfusions) med 6 mo (2+ -10), comparable to BM med 8 mo (2-48). AI outcomes depend on the intensity of lymphodepletion and ICA UCB/BM. **Conclusion:** Considering acceptable toxicity of lymphodepletion and good AI tolerability, including poor pts, the indications for cellular anticancer treatment could be expanded. We start pilot using UCB for KIR-AI for overcome chemoresistance and to achieve complete remission of disease after finishing anticancer treatment of solid tumors and for MRD-eradication in hematology. Additional undeniable advantage of UCB KIR-AI is quick availability of UCB from a KIR-typed UCB register.

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OP 08

HUMORAL IMMUNITY RESPONSES AFTER VACCINATION FOR HEPATITIS B VIRUS IN AUTOGRAFTED PATIENTS: A SINGLE CENTER EXPERIENCE

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Objective: The effectiveness of vaccinations post hematopoietic stem cell transplantation (HSCT), is a reliable marker for immune system's functionality assessment. In autologous HSCT (AHSCT) setting, the general aspect is that the immune system recovers quite soon and patients (pts) are considered to be immunocompetent in a period of approximately 3-6 months post AHSCT. We evaluated the hepatitis B virus (HBV) vaccination responses in autografted pts who were in remission and off chemotherapy post AHSCT. **Methodology:** 27 autografted pts aged 51,6 (22-67) ys, who had antiHbs titers <10 IU/ml before AHSCT and at the time of vaccination, were studied. After a successful engraftment the median absolute lymphocytes count at +3 months was 1740(450-4090)/mm^3. In 4,3(0,6–8,5) ys post AHSCT, 3 doses of recombinant HBV vaccine were given monthly. The response rates for pts who completed 3 vaccine doses, compared with an internal group of healthy individuals, vaccinated in the same period with the same product. **Results:** After the 1st, 2nd and 3rd dose the response rates in the study group were 11%, 81% and 88% respectively. No factor statistically significantly influenced the achievement of protective antiHbs titers. The responses were lower as compared to product's efficacy profile (19%, 86% and 100% after the 1st, 2nd and 3rd dose respectively), while in the comparative analysis with the internal control group, a trend for inferior responses in autografted pts was also noticed (88% vs 100%, p=0,07). **Conclusion:** This study, in a relatively homogenous group of pts, to our knowledge, is the only one that directly compares the HBV vaccine responses in autografted pts with healthy individuals. Although vaccination was offered late post AHSCT, the responses were lower compared to healthy individuals, indicating a possible long lasting immune impairment post AHSCT highlighting the necessity of prolonged surveillance and intensified vaccination programs for autografted pts.

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OP 09

ANTIBODY RESPONSES AND SAFETY OF THE COMMERCIALLY AVAILABLE VACCINES AGAINST SARS-COV-2 VIRUS IN ALLOGRAFTED PATIENTS: REAL WORLD DATA FROM A SINGLE CENTER

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Objective: Patients (pts) who have undergone allogeneic stem cell transplantation (alloSCT) are at high-risk for life-threating complications post SARS-CoV-2 infection, and the mortality rates has been reported of approximately 30-35%. The currently available vaccines proved their effectiveness in the general population by reducing the severity of the COVID-19 infection however, scant data exist regarding the safety and efficacy of the commercially available vaccines in allografted pts. **Methodology:** After a median of 2,7 (0,3-6,7) ys post alloSCT, 20 pts received within a median of 42 days, 2 vaccines of either Pfizer (n=17) or combinations of Pfizer with Moderna (n=2) or AstraZeneca (n=1). Off immunosuppression without evidence of active GvHD were 14 pts, 1 was only on Cyclosporine (CSP) while 5 were on steroids plus CSP or MMF or Ibrutinib for GvHD treatment. Automated commercial chemiluminescence immunoassay (CLIA) against spike (S1/

S2) protein was used for antibody responses detection. **Results:** During vaccination program no side effect grade ≥3 (including allergy, thrombosis, heart dysfunction or laboratory abnormalities) was reported. The commonest complains were fatigue (20%), bony pain (10%) and fever <38.5 oC (10%). Satisfactory antibody responses were observed in 66% and 95% of pts after the 1st and 2nd dose respectively. Importantly, active GvHD and intensive immunosuppression, did not negatively affect the antibody responses. None of the vaccinated pts developed COVID infection **Conclusion:** Our retrospective study although with small number of patients and with short term follow-up, in agreement with others, confirms that the current commercially available vaccines against SARS-CoV-2 are safe and highly effective in producing effective humoral responses in allografted patients. Prospective studies with longer follow-up are needed to elucidate the proper timing and the number of necessary doses for a safe and effective approach in preventing severe COVID-19 infection

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OTHER DISEASES

OP 10

THE MENTAL HEALTH STATUS OF INPATIENTS WITH NEWLY DIAGNOSED HEMATOLOGICAL CANCER DURING THE COVID-19 PANDEMIC

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Objective: There is limited data in the literature on the mental health of newly diagnosed hematological cancer (HC) patients in COVID-19 pandemic. This study evaluates the mental health statuses of HC inpatients diagnosed during the COVID-19 pandemic in comparison to the statuses of patients diagnosed with HC before the pandemic. **Methodology:** A cross-sectional survey collected the mental health measurements of 77 inpatients with HC between March and May 2021. The levels of depression, generalized anxiety, distress, sleep disorder, health anxiety, trait anxiety, coronaphobia, and resilience in HC patients newly diagnosed during the pandemic (NDHC) (n=38) and HC patients diagnosed before the pandemic (BPHC) (n=39) were compared. The relationships between predictive factors and cancer patients' mental health statuses were evaluated. **Results:** Depression (63.2% vs. 35.9%, p=0.017) and sleep disorder (67.8% vs. 38.5, p=0.016) were significantly higher, while generalized anxiety (57.9% vs. 38.5%, p=0.088) and distress (52.6% vs. 33.3%, p=0.087) were higher in NDHC.Health anxiety was more common in BPHC (53.8% vs. 31.6%, p=0.048).Among NDHC, women had more anxiety symptoms than men (76.5% vs. 42.9%, p=0.037).Diagnosing newly increased the risk of severity of depression and sleep disorders, bu decreased the risk of health anxiety. **Conclusion:** Our data indicate that patients with HC are vulnerable to mental health problems in the COVID-19 pandemic. This vulnerability is higher in newly diagnosed HC patients than in patients diagnosed before the pandemic. These findings may help develop interventions that reduce the vulnerability to adverse psychological effects by identifying risk factors for HC patients under pandemic conditions.

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OP 11

CORONAVIRUS ANXIETY LEVEL AND COVID 19 VACCINE ATTITUDE AMONG HEMATOLOGICAL MALIGNANCY PATIENTS

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Objective: The COVID-19 vaccine is the most essential tool for altering the pandemic's trajectory. The pandemic's control is complicated by society's unwillingness to vaccination. The aim of this study was to evaluate the attitudes of patients with hematological malignancies towards vaccination and to determine the relationships between vaccination hesitancy and patient characteristics. The secondary aim was to identify the pandemic-related anxiety level of this patient group and to investigate whether anxiety influences vaccination propensity. **Methodology:** This cross-sectional study was conducted with hematological malignancy patients at Hematology Clinic of the Erciyes University Hospital from Kayseri, Turkey, from 1 May 2021 to 1 December 2021. Patients who (1) were 18 years old or older, (2) voluntarily agreed to take part survey, and (3) could understand and perform the questionnaire met the inclusion criteria. 165 patients with hematological malignancies were included. The questionnaire consisted of three parts. The patients' sociodemographic characteristics, such as age, gender, diagnosis, disease and HSCT status, education level, marital status, location of residence were all asked about in the first section of the study. COVID-19 anxiety situation was evaluated with the Coronavirus Anxiety Scale (CAS). COVID- 19 vaccine attitude was evaluated with the Vaccine Attitudes Review (VAX) Scale. **Results:** The median age was 48 (18 - 86) years, 61 (37%) of whom were female. Most of the participants (37%) had been diagnosed with acute myeloid leukemia and were undergoing chemotherapy. In addition, 21% of patients reported having comorbidities. At the time of the survey, 70% of patients had not been infected with COVID-19, whereas 44% had been vaccinated. The mean CAS score was 2.42 (0 - 17). There were 22 (13%) participants with a mean CAS score of ≥9. Half of the participants had a CAS

score of 0. The CAS score was higher in females (p= 0.023). Similarly, it was significantly higher in patients who were not in remission for hematological malignancy and who received active chemotherapy (p= 0.010). The mean VAX score was 49.07 ± 8.76 (27-72). Most of the participants (64%) had a neutral attitude towards COVID-19 vaccination. In a survey of 165 patients, 55% said that they were skeptical about vaccination safety, and 58% said that they were concerned about unintended side effects. In addition, 90% expressed moderate concerns about commercial profiteering. Natural immunity was preferred by 30% of the participants. There was no statistically significant correlation between CAS scores and Vaccine Attitudes Review (VAX) Scale. **Conclusion:** This study draws attention to the level of anxiety in patients with hematological malignancies of the COVID-19 pandemic. Negative attitudes towards the COVID-19 vaccine are worrisome for at-risk patient groups. We think that patients with hematological malignancies should be informed to eliminate their hesitations about COVID-19 vaccines.

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OP 12

TREATMENT OF A PATIENT DIAGNOSED WITH ERDHEIM CHESTER'S DISEASE IN COOPERATION WITH PLASTIC SURGERY AND HEMATOLOGY

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Objective: Erdheim Chester disease (ECD) is a rare non-Langerhans histiocytic multisystem disorder. ECD is most commonly manifested as multifocal sclerotic long bone lesions. Orbital and intraocular manifestations are rare. We report an unusual bilateral orbital presentation as xanthomatous infiltration of ECD. **Case report:** A 56-year-old male was admitted due to papular lesions on both eyelids. Eyelid tissue histology showed histiocytic infiltration consistent with ECD. BRAF V600E mutation (-). In the first year, PET-CT showed new lesions on the lymph node, eyelids, knees and elbows. Laboratory investigation was within normal apart of mild increased CRP. The disorder was unresponsive to pegylated interferon alfa. With cladribine of 3 courses and surgical intervention he achieved a nearly normal facial appearance. **Conclusion:** Uncontrolled cell survival, differentiation, and proliferation of histiocytes in ECD result in soft tissue thickening and progressed to chronic fibrotic disease which may be unresponsive to medical treatments and requires surgical interventions.

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OP 13

A RARE PRESENTATION OF SYSTEMIC AL AMYLOIDOSIS; PULMONARY AL AMYLOIDOSIS

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Objective: Involvement of the lung is common in systemic AL amyloidosis in post-mortem series. However, the diagnosis is challenging. Histology is the gold standard but may result in bleeding. Consequently, diagnosis during life is rare. **Case report:** A 58-year-old female was admitted with chest pain, weight loss and cough. Thorax CT showed diffuse ground glass opacities, increased nodular density, and conglomerated mediastinal lymph nodes. Lung biopsy revealed Congo red (+) and anti-amyloid A (-). Bone marrow showed clonal plasma cell increase as 15% of kappa type. No other organ involvement or lytic lesions on PET-CT were documented. Cardiac involvement was detected. Daratumumab-bortezomib-based treatment with doxycycline was started. **Conclusion:** Clinical symptoms and laboratory testing cannot specially confirm the diagnosis of pulmonary amyloidosis. The usual presentation is diffuse-alveolar septal involvement. Diffuse parenchymal involvement is one of the least common forms of respiratory amyloidosis. It should be considered in the differential diagnosis in elderly patients.

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PP14

REAL-LIFE STUDY OF BIO-CLINICAL FOLLOW-UP AFTER BNT162b2 mRNA COVID-19 (BNTCV) VACCINATION IN 235 PATIENTS (PTS) INCLUDING 225 WITH HEMATOLOGICAL MALIGNANCIES (HM).

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Pts with HM may have low or delayed specific immune response after usual vaccination due to immune deficiency, associated to the disease or to the therapy. In this real-life study, 235 pts vaccinated with BNTCV (BioNTech Pfizer) were monitored for 2 years, starting 06/20 in a single Institution. Patients 'population and follow-up. 235 patients including 225 with HM initially received 2 doses of BNTCV (IM) with 3 weeks between the 2 first doses, including 98 lymphomas (L), 28 monoclonal gammopathies with undetermined significance (MGUS), 34 multiple myelomas (MM), 34 myeloproliferative disorders (MPD), 27 chronic lymphocytic leukemias (CLL), 4 acute leukemias and 10 non-malignant hemopathies. The first 43 pts had initial follow-up by telemedicine system connecting the pt to the Institute, developed by La Valeriane Inc. (Montpellier, France), 24/24h, 7 days. Seroconversion was assessed by analyzing IgG anti-Spike protein antibody (AcAS) every 3-4 weeks after the first vaccination and then, every 3-4 months, by SARS-CoV-2 IgG II Quant® Assay (Abbott, France) and Elecsys® Anti-SARS-CoV-2 S (Roche Diagnostics, France), in duplicate with the 2 assays, by 2 independent labs. Additional boosts of vaccine were administered in case of seronegativity or when the level of antibody was <7 BAU/mL. Pts not seroconverted after 4-5 doses of vaccine received tixagevimab/cilgavimab (EVUSHELD®, AstraZeneca). Tolerance using telemedicine application. Local pain (<1 day) was common and transient, particularly after the 2nd dose. 4/43 pts reported significant adverse events through telemedicine, followed by a medical call, including severe asthenia for ≥2 days, fever (>38° C) for at least 2 days, headache, or general pain. The satisfaction survey of monitoring system was good. Adherence to vaccination was excellent (only one refusal/235 pts). AcAS follow-up 15 Results were discordant (12 with Abbott +, Roche -, and 3 with Abbott - Roche +). Semi-quantitative rapid test (BIOSIS HEALING, Beijing China) was compared to Abbott with good concordance on 97 samples. After 2 doses of BNTCV, 72% of the pts were seroconverted, (median, range) (59, 3-319) BAU/mL, Abbott), including 62% CLL (121), 66% L (39), 91% MGUS (204), 61% MM (15) and 81% SMD (50). 50% of the pts receiving daratumumab (median 8 BAU/mL, 1-20) and only 38% of the pts receiving rituximab (median 0, 0-20) were seroconverted, as compared to 71% of the pts receiving other treatment or 80% (42, 2-210) with no therapy (161, 29-637) ($p<0.001$). Low gammaglobulin levels (<5g/L, $p=0.019$), similarly to the IgG level were associated with reduced seroconversion. Median levels of AcAS were 1679 BAU/mL post 2nd dose if seroconverted after the 1st dose and 308 if seronconverted only post 2nd dose. 68% of the pts negative after the 2nd dose were positive after the 3rd dose. 16 pts received tixagevimab/cilgavimab, 6 having symptomatic non-severe COVID-19 in the 15-40 days after the injection. There is a need to follow AcAS (including with rapid test) for pts having HM after BNTCV to adapt vaccine strategy including boosts or EVUSHELD. The usage of telemedicine connecting system may help to follow the early tolerance and to improve the pts' adherence.

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ONCOLOGY

PP15

IMMUNOPHENOTYPIC FEATURES OF MOLECULAR SUBTYPES OF BREAST CANCER

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Introduction: Currently, immunotropic drugs are used in the modern strategy of cancer treatment. Importance is given to immunological markers of the tumor, which may be associated with the prognosis of the disease, the effectiveness of treatment. Therefore, the study of tumor immunophenotype is one of the leading scientific directions. Of particular interest is the study of the immunophenotypic characteristics of breast cancer depending on its biological subtype. **Purpose:** to evaluate the frequency of expression of HLA-I, HLA-II, CD71, MUC1,0 Pgp170 molecules by breast cancer cells and determine their relationship with the molecular biological subtype of the tumor. **Materials and methods:** This study included 120 patients with breast cancer who received treatment at the Federal State Budgetary Institution "N.N. Blokhin" Ministry of Health of the Russian Federation. Tumor stages II and III prevailed: 56.7% and 33.4%, respectively. A moderate degree of differentiation (G2) was more often noted. The luminal subtype was 58.3% (n=70), non-luminal - in 41.7% (n=50). Immunophenotyping of the primary tumor was performed by immunofluorescence on cryostat sections. The reaction was evaluated using a ZEISS luminescent microscope (AXIOSKOP; Germany). The frequency of expression of HLA-I and class II molecules was studied depending on the clinical and morphological characteristics of breast cancer. The frequency of expression of HLA-I, HLA-II, CD71, MUC1.0 Pgp170 molecules depending on the molecular subtype of breast cancer was studied. **Results:** The absence of molecules of the major histocompatibility complex of class I and II on breast cancer cells was found in 89.6% of the samples. In 23.4% of cases, their monomorphic expression was observed. In the luminal subtype, HLA-II class molecules were expressed somewhat more often: in total, mosaic and monomorphic types of reactions were observed in 30.5% (20/65) of cases. With non-luminal - 20.0% (10/47) of cases. The frequency of expression of the transferrin receptor is significantly higher in the luminal subtype than in the nonluminal subtype: 85.9% (n=5) and 65.2% (n=30), p=0.011. Luminal breast cancer cells express transferrin receptors predominantly

monomorphically: 75.4% (n=49) versus 43.5% (n=20) in the non-luminal subtype, p=0.003. The percentage of monomorphically expressing MUC1 tumors is higher in luminal cancer: 83.3% (n=35) versus 65% (n=26) in the non-luminal subtype. Expression of Pgp70, namely monomorphic, is more often observed in luminal breast cancer. **Conclusion:** . Luminal breast cancer is characterized by unfavorable prognostic immunophenotypic features. In the luminal subtype, expression of CD71 is more often observed, predominantly monomorphic. In the non-luminal subtype, expression of Pgp 170 is observed less frequently. No statistically significant differences between the molecular subtypes in terms of the level of expression of HLA-I and class II molecules were found.

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CHRONIC LEUKEMIAS

PP16

INFECTIOUS COMPLICATIONS IN CHRONIC LYMPHOCYTIC LEUKEMIA – CHALLENGING ISSUES OF HEMATO-ONCOLOGY

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Objective: The aim of the study was to identify the diagnosis features and origin of the infectious complications in chronic lymphocytic leukemia (CLL). **Methodology:** Our observational study enrolled 82 patients (pts) with different CLL phases, who were managed at the Institute of Oncology of Moldova from 2000 to 2022. The pts age ranged between 45-86 years (median age 66.2 years). There were 47 (57.3%) males and 35 (42.7%) females. The diagnosis was proved by histopathological, immunohistochemical, cytological and immunophenotyping examinations. We used IWCLL criteria on a basis of lymphoid cells rate in the blood count and bone marrow aspirate. **Results:** According to Binet classification, stage A was revealed in 54 (65.9%) pts, stage B – in 28 (34.1%). Infectious complications developed in 36 (43.9%) cases. Respiratory bacterial infections were diagnosed in 29 (80.6%) pts, commonly comprised the relapses of chronic bronchitis - in 11 (30.6%) and acute pneumonia - in 10 (27.8%). Herpetic infection was diagnosed in 2 (5.6%) cases. Other infectious complications included nephro-urinary tract in 3 (8.2%) pts and acute otitis in 2 (5.6%). Fatal outcomes occurred in 16 (19.5%) pts, including 6 (37.5%) with infections, 5 (31.3%) with CLL progression. **Conclusion:** The infectious complications proved to be the common manifestations and causes of death in CLL, especially in stage B.

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PEDIATRIC HEMATOLOGY ABSTRACT CATEGORIES

COAGULATION AND FIBRINOLYSIS DISORDERS

OP 17

THE EFFECT OF THE COVID-19 PANDEMIC PROCESS ON TREATMENT COMPLIANCE IN HEMOPHILIA PATIENTS

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Objective: It is known that there were transportation problems to the hospital and treatment experienced in many disease groups during the pandemic process. The negative impact of the pandemic is particularly evident in chronic diseases and in situations that require continuous treatment. In this study, data on access to treatment and disease status in patients with bleeding diathesis were collected by questionnaire method, and the effects of the pandemic on these patients were determined. **Methodology:** Fifty patients who were followed up in Istanbul Medical Faculty Pediatric Hematology-Oncology Department between 2010-2022 with the diagnosis of bleeding diathesis and accepted to participate in the survey were included in the study. Questions were answered by telephone. Responses were analyzed using SPSS. **Results:** The mean age of the patients in our study was 13 years, the age range was between 2-26 years. The median age was 13. Of these patients, 44 (88%) were male and 6 (12%) were female. 88% of the patients were diagnosed with Hemophilia A, 12% with Hemophilia B. While 56% of the patients were receiving prophylaxis for the treatment of hemophilia, 44% were receiving treatment in case of bleeding. Sixtyfour percent of the patients went to a health institution or doctor once every 1-3 months, 18% every 6 months, 6% once a year for control and follow-up purposes. The last drug or dose change was made 0-6 months ago in 16% of the patients, 7-12 months ago in 4%, and 22% 1-2 years ago. However, in 6%, more than 2 years had passed since the last change, and 42% did not change. Serious psychiatric problems were observed in our two patients. Fear of death and anxiety disorder has been seen in a 10-year-old patient. During this period, severe hyperactivity developed in 1 patient. While 10% of the patients interrupted their treatment in the last 3-4 months, 90% did not. The reason for the disruption of the patients who interrupt their treatment is Covid infection in 20% and the drug cannot be obtained in 40%. While 94% of the patients had no problem in the supply of the drug due to the Covit-19 pandemic, 6% had a problem in the supply of the drug. While 33% of the patients who had problems in the supply of the drug received support from their doctor, 33% from the patient association to solve the problem, 33% did not receive any support from anyone. Among the reasons for having problems in

the administration of the drug, 33% of the patients did not go to the hospital because they were afraid of the pandemic, 33% of them could not get treatment even though they went to the hospital, and 33% of them other reasons were reported. While 48% of the patients want an experienced health personnel to go to their home to perform their treatment, 52% do not want it, stating that they do not need it. None of the patients whose treatment was interrupted did not complain of bleeding during this period. **Conclusion:** It was seen that the patients experienced disruptions related to access to medication and treatment during the pandemic process. However, there were no major problems in this process, thanks to the help of their physicians and other institutions. It is important to emphasize the importance of treatment in hemophilia patients and to have easy communication with the center followed in order to overcome the pandemic process without complications.

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LEUKEMIA

OP 18

EVALUATION OF MRD-STATUS IN POST-INDUCTION PERIOD IN PEDIATRIC PATIENTS WITH ACUTE LYMPHOBLASTIC LEUKEMIA.

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Objective: The need to study the significance of minimal residual disease (MRD) at the induction therapy in patients with acute lymphoblastic leukemia (ALL) is beyond doubt. This has been confirmed by many years of work by many research groups. The role of MRD in the late stages of treatment and the impact of these values on patients survival requires research and discussion. **Aim:** To evaluate the influence of MRD-status in post-induction period on survival in patients with acute lymphoblastic leukemia. **Methodology:** From 2010 to 2022, 135 patients with primary B-ALL enrolled in ALL-IC BFM 2009 protocol. Median age was 5.4 year (range 1-17). Male was 62 (49,5%) and female 73 (54,1%). The diagnosis was based on WHO 2016 criteria. Stratification on prognostic risk groups was carried out according to protocol criteria. Prednisone response evaluated at day 8 of treatment. The 15th, 33th, and 78th (as post-induction) day response was assessed by bone marrow cytology and level of MRD by flow cytometry. **Results:** 5y-overall survival (OS) for patients with MRD-negative status on day 15 was 94,4±5,4% and 87,0±3,4% for MRD-positive (p=0,5). On day 33 patients with MRD-negative status achieved 5y-OS in 86,7±5,8% and 89,6±3,5% for MRD-positive (p=0,6).5y-OS for patients with MRD-negative status on day 78 was 90.8±4.0%, MRD-positive - 90,4+6.5%. DFS for MRD-negative status was 88.5±4.5%, for MRD-positive - 66.3±11.8% (p=0,1). EFS for MRD-negative patients was 87.2± 4,6% and for MRD-positive 66.3±11.8% (p=0,09). **Conclusion:** We have found a tendency between MRD status on day 78 and the frequency of relapses in patients. At the moment, there are no reliable data on the effect of post-induction MRD status on survival. The assessment of MRD in the post-induction period has prognostic prospects and requires further study.

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INHERITED BONE MARROW FAILURE DISEASES

OP 19

GHOSAL HEMATODIAPHYSEAL DYSPLASIA (GHDD) DIAGNOSIS AND TREATMENT: CASE REPORT

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Objective: Ghosal hematodiaphyseal dysplasia syndrome (GHDD) is a rare authosomal ressesive disorder characterized by increased bone density and regenerative corticosteroid-sensitive anemia.We describe GHDD in an 11-year old Azerbaijani boy with refractory anemia,mild thrombocytopenia and radiological metadiaphyseal dysplasia.The diagnosis was made based on clinical and laboratory examinations and genetic analysis.We have observed a significant improvement of anemia after administration of steroids. **Case report:** An 11-year-old boy with long-standing anemia, complained of fatigue,delayed physical development,and limited range of motion in the joint.Physical examination did not reveal LAP and hepatosplenomegaly.Among the dysmorphic craniofacial changes mentioned in the literature, has a tower-shaped skull,micrognotia,drooping ears,a long and wide philtrum, and a thin upper lip.Skeletal X-ray imaging showed fibrotic changes and varying degrees of osteopenia in the metaphysis of the long tubular bones. **Methodology:** The blood count: Hb 7.0 g/dl,HCT 24.5%,reticulocytes 5.6%,MCV 78fL,MCHC 28.6 g/dl,WBC count 6860/mm3,platelets 165000/mm3,ESR 75 mm/h,anisocytosis in erythrocytes and platelets were observed in a peripheral blood smear.Hemoglobin electrophoresis,iron studies,vitamin B12 and folic acid were normal. Coombs test was negative.Bone marrow examination showed hypoplasia in erythroid and megakaryocytic series and dysgranulocytopoiesis. **Results:** After detection of exon 12 ((p. Gly473Trp),rs149988492,CM215867) in the genetic panel analysis of anemia,steroid treatment at a dose of 1 mg/kg/day was started and anemia improved at 1-month follow-up (Hb level 6.8 g/dL to 11.9 g/dL),but mild thrombocytopenia was noted to persist.The clinically insignificant CRP elevation normalized during the treatment. **Conclusion:** GHDD should be

considered in patients with clinical and radiographic evidence of diaphyseal dysplasia as well as hematological abnormalities. In addition, bone dysplasia should be investigated in treatment-resistant hematological pathologies of unknown origin. Although GHDD is rare, clinicians should be informed that it responds well to steroid therapy.

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HEMOGLOBINOPATHIES (SICKLE CELL DISEASE, THALASSEMIA ETC...)

OP 20

COMPARISON OF THE QUALITY OF LIFE OF PATIENTS WITH A BETA-THALASSEMIA MAJOR, REGULARLY RECEIVING PARENTERAL AND ORAL CHELATORS

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Objective: Patients with β-thalassemia major (Mβ-th) are transfusion-dependent, which affects their quality of life . To maintain a safe level of iron in the body, patients with Mβ-th require adequate regular therapy with chelation drugs (CP). Currently, for the correction of iron overload in patients with Mβ-th, along with oral CP, parenteral CP continues to be used. However, oral and parenteral CP are perceived by patients ambiguously. Comparative assessment of the quality of life of transfusion-dependent children with Mβ-th receiving various CPs: parenteral deferoxamine and oral deferasirox. **Methodology:** For 2 years, a survey and clinical observation of 201 children with Mβ-th aged 2 to 18 years (boys 128, girls 73) was conducted. The control group consisted of apparently healthy children from preschool and school institutions (n=30). Patients with Mβ-th underwent a quality of life study (PedsQL- Pediatrics Quality of Life Inventory, Generic Core Scales and PedsQLTM4.0) and a psychological examination. The survey was conducted after obtaining the informed consent of the parents of older children at the beginning and at the end of the study. Once a month, the necessary clinical and biochemical analyzes were carried out.Patients with Mβ-th regularly prescribed various CP regimens: deferoxamine subcutaneously; deferasirox, orally. **Results:** All studied patients with Mβ-th were divided into four age groups: group 1 - children under 4 years old according to parents (n=41); group 2 - children 5-7 years old according to the assessment of children and parents separately (n=62); group 3 - children 8-12 years old according to the assessment of children and parents separately (n= 47); Group 4 - children aged 13-18 years old according to the assessment of children and parents separately (n=51). Each of the 4 groups of Mβ-th patients was divided into a subgroup taking only deferiprone and a subgroup taking only deferasirox. **Conclusion:** According to the Results of the survey, the indicators of the quality of life and the psychological state of children with Mβ-th receiving parenteral and oral CP differed. So, in sick children with Mβ-th of different age groups, when taking parenteral CP in comparison with those taking oral CP, the quality of life was reduced, and the psychological state worsened significantly. This was especially impacted patients in the group of 8-13 years. In this group, there were more complex relationships with peers, parents, there was an increase in anxiety and aggressiveness, which is associated with the need for hours of use of the pump for subcutaneous injection of the drug, the presence of pathology that limits the use of oral chelators. In children of 4 different age groups, there is a significant difference in the values given by patients and their parents to the quality of life in patients receiving parenteral and enteral chelator therapy.

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LYMPHOMAS

OP 21

LABORATORY AND CLINICAL FEATURES OF TUMOR LYSIS SYNDROME IN CHILDREN WITH HIGH-GRADE NON-HODGKIN LYMPHOMA AND EVALUATION LONG-TERM RENAL FUNCTIONS IN SURVIVORS

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Objective: Tumor lysis syndrome (TLS) describes biochemical and clinical abnormalities resulting from spontaneous or treatment-induced necrosis of rapidly proliferating tumors such as Burkitt's lymphoma (BL). TLS can lead to complications like acute kidney injury (AKI) which can be fatal. In patients who had AKI in childhood, the frequency of kidney problems increases in later ages. Therefore, there is a need to examine long term kidney functions in patients with TLS. The purpose of our study is to investigate the laboratory and clinical features of tumor lysis syndrome in childhood non-Hodgkin lymphomas (NHL) and to reveal its impact on long term kidney function in survivors. **Methodology:** Our study was a single center retrospective study. 107 patients (0-18 years of age) admitted to our hospital between 1998-2020 years with a diagnosis of NHL and who received chemotherapy were included in the study. Clinical and laboratory characteristics of the patients at the time of diagnosis and within 14 days from the start of chemotherapy were examined. The presence of TLS and its laboratory and clinical features were examined according to the Cairo-Bishop criteria. The relationship between TLS and age, gender, histopathological subgroup, tumor stage, lactate dehydrogenase (LDH) level at presentation, bone marrow and kidney involvement were investigated. The presence of AKI was determined according to the Kidney Disease: Improving Global outcomes criteria.

Long-term renal functions of the patients were investigated. **Results:** 80.3% of the patients with a median age of 9.8 years were male. The most common histopathological subgroup was BL (77.5%), while the majority of patients (76.7%) had advanced disease. Clinical TLS (CTLS) was observed in 12.1% of the cases, and isolated laboratory TLS (LTLS) was observed in 18.7%. Hyperhydration±alkalinization and allopurinol were used in first-line treatment and prophylaxis. A significant correlation was found between young age, advanced stage, high lactate dehydrogenase level at presentation and LTLS. Bone marrow involvement was found to be significantly higher in the group with CTLS. AKI was observed in 12.1% of the patients. Out of a total of 103 patients whose treatment was completed, 93 (90.3%) patients survived and 10 deaths were observed. No death due to TLS was observed. The mean survival time was 215.55±7.502 months. After an average of 6.9 years, when the glomerular filtration rate values of the patients at the first admission and at the last admission were compared, a mean decrease of 10 mL/min/1.73 m2 was detected. However, it was not found to be statistically significant. **Conclusion:** In our study, lower age, advanced stage, high LDH level at presentation were found to be risk factors for TLS. Long-term renal function loss was not detected in the survivors, for whom early and careful prophylaxis/treatment approaches were applied for TLS. The survivors are still being followed up.

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SUPPORTIVE CARE AND PALLIATIVE CARE

OP 22

IMPACT OF COVID-19 PANDEMIC ON DELAY OF CHILDHOOD CANCER DIAGNOSIS AND THE OUTCOMES IN A PEDIATRIC HEMATOLOGY/ ONCOLOGY DEPARTMENT

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Objective: Restriction of access to healthcare during COVID-19 pandemic is undoubtedly a major problem for patients with cancer. Although childhood cancers are highly curable, it is obvious that diagnostic and treatment disruptions will lead to poor Results. In this study we investigated the effects of pandemic on diagnosis and treatment delays of children with cancer along with their consequences. **Methodology:** We searched all pediatric patients treated for cancer between March 2020 and January 2022 for COVID-19 infection. Data were collected collected from medical files of patients diagnosed with COVID-19, confirmed by polymerase chain reaction (PCR), who received active antineoplastic treatment. **Results:** Fifty-eight patients developed COVID-19 infection at different stages of their anticancer treatment. Twenty-five had an asymptomatic COVID-19 infection, twenty-six had mild symptoms, three had moderate symptoms and four had severe disease. All of them recovered from COVID-19 infection. Chemotherapy courses were continued during active infection in four patients and interrupted in other patients. **Conclusion:** While strict measures are required to control the pandemic, patients with severe critical illness such as cancer should be carefully evaluated and treatment delays that may have vital consequences should be avoided. In pediatric patients with cancer whom infected by COVID-19, continuation of anticancer treatment may be considered by evaluating the clinical status of the patient.

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TUMOR BIOLOGY, IMMUNOLOGY AND IMMUNOTHERAPY

OP 23

INTRAPLEURAL THERAPY TO DISRUPT IL-6/IL-8 JUXTACTINE SIGNALLING TO BLOCK TUMOR EMT AND TO DRIVE SYSTEMIC ANTI-TUMOR IMMUNITY

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Objective: The goal of this study was to determine whether antiIL-6Rα block (tocilizumab) will alter the pleural secretome and will diminish tumor-specific immune responses. **Methodology:** Pleural T cells were isolated from freshly drained pleural effusions (n=6). Autologous pleural tumor was expanded in vitro using the Mammary Epithelial Growth Medium (Lonza). Pleural T cells were stimulated using anti-CD3/CD28 Dynal beads and low dose IL-2 (60 Cetus U/ml) for 2,4,7, 14 or 21 days in the presence of tocilizumab for the last 48h (0, 0.35, 0.72, 1.43, 2.86 and 5.72ug/ml). Pleural T cell effectors were counted and plated on tumor targets at 12.5:1 E:T in the presence of tocilizumab. **Results:** Ex vivo expanded pleural T cells were effector-memory phenotype (CD45RA-CD27-) and were highly cytotoxic against autologous tumor (89-100%). The majority of CD8+ T cells were central memory (CD45RA-/CD27-) or effector memory (CD45RA+/CD27-); the majority co-expressed granzyme B, perforin, 20-60% expressed PD-1. Most CD4+ co-expressed granzyme B and perforin and were PD-1+, suggesting cytotoxic CD4+ T cells. The presence of tocilizumab reversed tumor EMT but did not alter cytotoxicity. **Conclusion:** We show that the IL-6/IL-6Rα axis is prominent in MPE, drives tumor growth and inhibits anti-tumor immunity. Pleural T cells are neither exhausted nor dysfunctional but are suppressed by the pleural environment. Ex vivo expanded MPE CD8 and CD4 T cells are highly cytotoxic against

autologous tumor. Anti-IL-6Rα block reverses tumor EMT but does not inhibit effector responses.

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OP 24

NIVOLUMAB EXPERIENCE IN PEDIATRIC MALIGNITIES

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Objective: Nivolumab is a human monoclonal antibody to programmed cell death receptor 1 (PD-1) that acts as an immune checkpoint inhibitor and is used in the immunotherapy of various types of advanced or metastatic cancer. The aim of this study is to evaluate the efficacy of nivolumab in pediatric patients with various highly malignant tumors and to share the experience of Ankara University Pediatric Oncology Department. **Methodology:** Eight patients were included in the study. Median age at diagnosis is 11.3 years (min 4.9- max 13.9). Treatment indications were malignant mesothelioma (1), rectal adenocarcinoma (1), malignant melanoma (1), ewing sarcoma (2), osteosarcoma (1), non-hodgkin lymphoma (1) and hodgkin lymphoma (1). **Results:** Four patients died due to progressive disease. Complete remission was achieved in four patients diagnosed with malignant mesothelioma, rectal adenocarcinoma, malignant melanoma and Hodgkin lymphoma. **Conclusion:** Immune checkpoint inhibitors are one of the greatest advances in oncological therapy and improve the overall survival of patients with advanced and resistant malignancies. More studies are needed to evaluate the efficacy of immune checkpoint inhibitors in pediatric tumors.

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PEDIATRIC LEUKEMIAS

OP 25

MRD IN BLASTIC PLASMACYTOID DENDRITIC CELL NEOPLASM

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Objective: Blastic plasmacytoid dendritic cell neoplasm (BPDCN) is an extremely rare disease with an aggressive course. Plasmacytoid dendritic cells (PDCs) are a component of the innate immune response: they secrete large amounts of type I interferons. There are several fractions of PDC in normal bone marrow: (CD123+CD4+CD56+) and (CD123+CD4+CD56-). PDC fraction CD123+CD4+CD56+ is a non-tumor analogue in BPDCN. Normally, the ratio of CD56+PDCs to CD56-negative PDCs is 0.129±0.144. **Methodology:** AIM. Determination of the principles for assessing minimal residual disease (MRD) in the bone marrow by flow cytometry in BPDCN. **Materials and methods:** In the following case, the diagnosis of BPDCN with lesions of the skin, bone marrow, and spleen was established using the IHC study of the skin biopsy, morphological, flow cytometric studies of the bone marrow, as well as CT of the chest and abdomen. In a diagnostic flow cytometric study of the bone marrow, tumor cells expressed CD56, CD4, CD123 **Results:** At the end of the treatment stages,MRD was determined by flow cytometry.Isolation of CD56-positive PDCs was carried out on the basis of light scatter parameters, nucleotropic dye SYTO41,weak expression of CD45,co-expression of CD4,CD56,CD123.In the analysis,the ratio of CD56-positive PDCs to CD56-negative PDCs increases from 0.063 to 8.9, while the number of blasts (1.2%) and the proportion of CD56-positive PDCs among myelokaryocytes (0.06%) changes slightly.One month later,the relative content of CD56-positive cells was 81.2% of the PDCs,while the morphological study showed an increase in the number of blasts to 5.2%.One more month later,blast cells numbered 85% in the bone marrow punctate. **Conclusion:** In the described case, the dynamics of the ratio between CD56-positive and CD56-negative PDCs showed an increase in the tumor clone in the relapse of the disease. The change in this ratio became noticeable in the analysis of hypocellular bone marrow in the absence of an increased number of blasts in the morphological study of this sample. Measurement of the ratio of CD56+CD123+CD4+ cells to CD56-CD123+CD4+ cells is an effective strategy for Objective assessment of tumor burden and the likelihood of bone marrow tumor recurrence of blastic plasmacytoid dendritic cell neoplasm.

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OP26

EVALUATION OF MICROBIOLOGICALLY DOCUMENTED BLOODSTREAM INFECTIONS IN PEDIATRIC HEMATOLOGY/ONCOLOGY PATIENTS: RESULTS OF TEN YEARS

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Objective: In pediatric hematology/oncology patients, infections are the main cause of prolonged hospital stay, increased mortality and high cost following relapse or progression. In this patient group, infections caused by multidrug resistant bacteria are common and affect morbidity and mortality rates. We aimed to determine the frequency and antibiotic susceptibility of bacteria isolated from blood cultures of the patients with malignant and non-malignant diseases in our hospital over a ten-year period. **Methodology:** patients admitted to the Pediatric Hematology/Oncology Service between January 2011- June 2021 were evaluated. The most common disease was acute lymphoblastic leukemia (27%). The first isolated bacteria of same species for each patient were included, contaminated cultures were not included. Blood cultures incubated in the Bactec FX automated blood culture system for five days. Bacteria were identified by conventional methods or automated systems. Antibiotic susceptibility tests were performed by disc diffusion or gradient test and were evaluated according to guidelines. **Results:** A total of 4631 blood culture samples from 296 patients were analyzed. Positive signal was seen in 620 samples. Blood culture posivity was 13.4%. Total 298 blood culture samples were evaluated. Gram positive bacteria rate were 59% and 41% gram negative. The most frequently (58.7%) isolated gram positive bacteria were methicillin-resistant coagulase negative *staphylococci* and gram negative bacteria were *Klebsiella pneumoniae* (28,5%). The rate of bacteria producing extended spectrum beta lactamase (ESBL) was detected as 74% for *Escherichia coli* and 69% for *Klebsiella pneumoniae*. **Conclusion:** It is important for each center to determine its own causative agents and their resistance patterns in bloodstream infections. Gram positive bacteria were found dominantly in our study. The high ESBL rate in E.coli and K.pneumoniae isolates is remarkable. Early detection of the causative agents in bloodstream infections of the pediatric hematology/oncology patients and initiation of prompt treatment are important to reduce mortality.

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NURSING

PSYCHOLOGICAL SUPPORT FOR CANCER PATIENTS

OP 27

INFLUENCE OF CANCER NEWS ON QUALITY OF LIFE OF PATIENT'S FAMILIES: AN OBSERVATIONAL STUDY

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Objective: Malignant disease diagnosis brings great psychological suffering to the patient, and the sickness might have catastrophic ramifications for the relatives. The Objective of this study is to assess influence of cancer news on quality of life of patient's families. **Methodology:** This study was prospective cohort study conducted at the oncology department of a tertiary care Hospital, Pakistan for the duration of one year. The quality of life was assessed as per pre-defined questionnaire both from two first degree relatives at each clinical visit during treatment every week and every month for six months after completion of treatment. Data analysis was done by employing SPSS version 21. **Results:** 180 family members were included. QOL of family members was 1.54±0.57 (p=0.001). Anxiety/depression score of the family members was 1.67±0.64 while in control group it was 1.50±0.64 (p=0.031). The EQ VAS score in control group was 66.5±16.7 whereas in caregivers group, it was 71.3±18.8 (P=0.023). Stress was observed in 98 (54.44%) participants in caregivers group. Moderate-severe depression was observed in 45(25%) vs 21(11.67%) participants in caregivers vs control group, respectively (p=0.041) **Conclusion:** Our findings reveal that family caregivers of cancer patients face mental health issues and a decline in health-related quality of life. To reduce the effect of caring on the mental health and health related quality of life of family caregivers in Pakistan, culturally suitable caregiver support programs are required.

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