

4.9% used herbal medicine. 17.1% of the patients consumed two meals/day a day, 70.7% three meals/day, 7.3% meals/day, 4.9% 4≤ meals/day; 34.1% were fed mostly with carbohydrates, 7.3% mostly with protein, 17.1% with mostly fat-containing food, 4.9% with mostly processed food and 36.6% were fed with a balanced diet. In their daily diets, 51.2% of the patients consumed processed food, and 48.8% did not consume any processed food. Of the patients, 80.5% were not involved in any kind of sports activity. 14.6% of patients stated that they spend > 5 hours/day, 12.2% 3-5 hours/day, 70.7% 1-3 hours/day, and 2.4% < one hour/day in front of a screen. In 73.2% of patients' vitamin D level was <12 ng/mL and in 26.8% between 12 and 20, ng/mL. In 19.5% vitamin B12 level was < 200 pg/mL. Selenium deficiency was detected in 12.2%, zinc deficiency in 29.3%, vitamin C deficiency in 12.2%. **Conclusion:** Nutritional disturbances are not uncommon in survivors of pediatric acute lymphoblastic leukemia. It is important to closely monitor and raise awareness of these children in terms of unbalanced nutrition, inactivity, and the development of a tendency to gain weight.

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OP 24

ACUTE MEGACARYOBLASTIC LEUKEMIA IN CHILDREN: DIAGNOSTICS AND MRD MONITORING

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Objective: Acute megakaryoblastic leukemia (AMKL) is a rare subtype of acute myeloid leukemia (AML) associated with poor prognosis for all patients except children with t(1;22) or Down syndrome. The frequency of complete remission in case of AMKL is comparable to the frequency of it in other variants of AML but the median survival is much lower. This determines the necessity of more thorough evaluation of treatment effect using flow cytometry assessment of minimal residual disease (MRD). **Methodology:** The clinical and immunological profile of 8 girls and 9 boys with de novo AMKL between the ages of 3 months–11 years old was analyzed. The primary leucocytosis median was 10,25; only one patient had hyperleukocytosis (53x10⁹/l) at presentation. The measurement of MRD was performed in 6 patients using multiparameter flow cytometry. The measurement of MRD performed after induction therapy on the basis of megakaryocytic markers, weak CD45 expression using the initial immunophenotype patterns. **Results:** Adequate measurement of the level of MRD had required extensive diagnostic immunophenotyping in order to determine the aberration of megakaryoblasts. CD9(83,3%), CD33(75%), CD34(60%), CD13(50%) apart from megakaryocyte markers (100%) were most

common for blast cells in case of AMKL. The expression of CD7 antigen was as frequent as of CD117-40%. The MRD level ranged from completely negative (0%; 0.006%) to evident (1.05%). **Conclusion:** The detection of residual tumor megakaryoblasts in AML M7 using flow cytometry is a promising method for assessing the effect of therapy. Adequate measurement of MRD requires detailed immunophenotyping in the diagnosis to determine the aberrations of megakaryoblasts immunophenotype.

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OP 25

JUVENILE MYELOMONOCYTIC LEUKEMIA SINGLE CENTER EXPERIENCE

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Objective: In the 5-year follow-up of patients diagnosed with Juvenile Myelomonocytic Leukemia (JMML) in a single center; reveal treatment and survival analyzes **Methodology:** In this study, clinical and laboratory data of 12 JMML patients followed in Ankara Pediatric Hematology Hospital and Ankara City Hospital Pediatric Hematology Clinics between 2015-2020 were analyzed retrospectively. **Results:** The median age at diagnosis was 1.7 years (0.23-5.7). Monosomy 7, 4 PTPN11, 2 NRAS, 4 KRAS, 1 CBL mutations were detected in 2 of the patients. Hematopoietic stem cell transplantation was performed in 8 of the patients. Before transplantation, 7 patients had received a median of 4 cycles of azacitidine treatment. The mean time from diagnosis to transplantation was 15 months (1-29 months). The 5-year overall survival at median 15-month follow-up was 50%. **Conclusion:** With hypomethylating agents and HSCT, survival in JMML improves compared to historical control groups. However, further multicenter prospective studies are needed to prevent long-term mortality and morbidity.

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OP 26

MYSTERY OF iAMP

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Objective: Intrachromosomal amplification of chromosome 21 (iAMP21) is defined as the presence of three or more RUNX1 signals on a single chromosome, or a total of five or more RUNX1 signals per cell. It occurs in 2% of pediatric B-cell

acute lymphoblastic leukemia (ALL), but is associated with older age, low white blood cell count, and high risk of relapse. In our study, it was aimed to review our patients with ALL in terms of possible iAMP21 at the time of diagnosis and to evaluate the clinical features. **Methodology:** The results of the patients who were diagnosed with B-cell ALL between 2012 and 2019 and whose treatment was completed, and whose signal increase in the RUNX1 region in the t(12;21) FISH analysis were detected, were reviewed together with the medical genetics section in terms of possible i amp. Those with 5 or more signal increases on a single gene in RUNX1 were considered as i amp. **Results:** In the t(12;21) FISH analysis, signal increases were observed in the RUNX 1 region in 15 (8.3%) of 180 B-cell ALL patients included in the study. Although these signal increases varied between 3-4 in 14 patients, 4-7 signal increases were detected in only 1 patient and were considered as iamp. The patient with iamp was a 6-year-old patient with a white blood cell count of 7600/mm³ at presentation and followed in the intermediate risk group. Bone marrow relapse developed in 2 years. **Conclusion:** The presence of iAMP21 is associated with a delay in treatment response and increased recurrence in the late period. Patients should be carefully evaluated for iAMP21.

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MYELOYDYSPLASTIC SYNDROMES

OP 27

DIAGNOSTIC APPLICATION AND CLINICAL SIGNIFICANCE OF FCM WELLS SCORING SYSTEM IN MYELOYDYSPLASTIC SYNDROMES

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Objective: Myelodysplastic syndromes (MDS) are group of clonal diseases of the hematopoietic system characterized by ineffective hematopoiesis, dysmyelopoiesis, a high frequency karyotype abnormalities and the risk of transformation into acute leukemias. Cytopenic and dysplastic changes are not pathognomonic for MDS, and there are many diseases that can imitate MDS. According to various sources, clonal karyotypic abnormalities are present only in 20-60% of MDS. The diagnosis of MDS is not difficult if blasts or sideroblasts are present in the bone marrow, or there are chromosomal aberrations as evidence of clonal hematopoiesis. The diagnostic problem arises in cases of MDS without sideroblasts, with normal karyotype and/or bone marrow hypoplasia. Since 2012, the ELNet Working Group has proposed and subsequently supplemented guidelines for Flow Cytometry as a complementary diagnostic tool. The aim of the study was to compare the results of the FCM Wells score MDS with the results of the IPSS-R score MDS **Methodology:** The study included 30 patients initially diagnosed with MDS. The classification was carried out according to the WHO Classification of MDS 2016: MDS SLD-6 (20%), MDS-MLD-5 (16.7%), MDS RS-MLD-2 (6.7%), MDS-EB1-9 (30%), MDS EB2-8(27%). According to the IPSS-R, patients

were scored based on blasts, cytogenetic examination, hemoglobin/platelet/absolute neutrophil count and scored as very-low, low, intermediate, high, very-high. **Results:** Using the Wells evaluation criteria, which takes into account cytometric analysis of the cells of the main myelopoiesis lines, changes were found in the compartment of granulocytes in 93%, monocytes in 40% and erythrocytes in 73% of cases. High scores on the Wells scale (> 4) were obtained in 89% of (8/9) MDS-EB1, 100%(8/8) MDS-EB2, 80% (4/5) MDS MLD patients, 17% (1/6) MDS –SLD, 50%(1/2) MDS RS-MLD. According to IPSS-R, MDS patients received a score <1.5 very low risk group include 50%(3/6) MDS –SLD, 20%(1/5) MDS-MLD, score > 1.5-3 - Low risk group include MDS –SLD 50%(3/ 6), MDS-MLD-80% (4/5), MDS RS-MLD 50% (1/2), MDS-EB1-78%(7/ 9), score > 3- 4.5-intermediate risk qroup got MDS-EB1 22%(2/ 9), MDS EB2-25% (2/8), MDS RS-MLD- 50%(1/2), Score > 4.5 respectively high risk group got patients MDS –SLD- 17%(1/6), MDS EB2-50%(4/8), Score > 6 very high risk group got MDS EB2- 25%(2/ 8). The Pearson's correlation coefficient (PCC) showed high correlation between IPSS-R and FCM Wells score was 0.83, p<0.002. **Conclusion:** In our study, the FCM score had a positive correlation with the IPSS-R prediction. Expanded analysis of the main compartments of the bone marrow (early precursors of myelopoiesis, the population of granulocytes and monocytes, erythrocytes) using the Wells scale as an additional tool improves the diagnosis and distinguish low-grade MDS from non-clonal cytopenias.

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

OP 28

THE FREQUENCY OF HLA-A, B AND DRB1 ALLELES IN PATIENTS WITH BETA THALASSEMIA

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Objective: HLA class I and II alleles are shown to be associated with certain diseases. A restricted numbers of alleles were found to be related to alloimmunisation in thalassemia population. The role of human leucocyte antigens in thalassemia is trend topic. In this study, the aim was to evaluate the differences in HLA frequencies of beta thalassemia patients comparing with healthy controls. **Methodology:** The data were collected of 100 patients who were diagnosed with beta thalassemia and 100 healthy controls were included in the study. The low resolution HLA-A, -B, -DRB1, tissue group data were performed Istanbul University, Faculty of Medicine, Medical Biology Department HLA typing laboratory. All data were