Objective: Next-generation sequencing (NGS)-based technologies are novel methodologies for the diagnosis, prognostic assessment and decision of individualized treatment strategy in hematological neoplasia. NGS led to a more comprehensive understanding of the mutational landscape, especially in the myeloid neoplasms. Herein, we present the results of the patients who underwent NGS with the suspicion of myeloid neoplasia. **Methodology:** Retrospective data from a total of 13 patients were analyzed who were diagnosed between 01.10.2018 and 01.06.2021. There were four myeloid panels in the NGS. Panel 1 consists of ASXL1, CALR, CBL, CEBPA, CSF3R, and DNMT3A mutations. Panel 2 consists of EZH2, FLT3, IDH1, IDH2, JAK2, KIT, KRAS, and MPL mutations. Panel 3 consists of NPM1, NRAS, RUNX1, SETBP1, and SF3B1 mutations. Panel 4 consists of SH2B3/LNK, SRSF2, TET2, TP53, U2AF1, ZRSR2 mutations. **Results:** Median age was 48. Diagnoses were AML (n=7), AA (n=1), MDS (n=2), DLBCL (n=1), MM (n=1), and Evans syndrome (n=1). Seven cases with malignant diagnoses were eligible for intensive therapy. There were no mutations detected by NGS in MM, AA, DLBCL, and Evans syndrome cases. Biallelic CEBPA mutation accompanied FLT3 mutation in 1 case. IDH1 and NPM mutation were detected in 1 APL case. MPL, SRSF2, ASXL1, CBL, U2AF1, SF2B1, and TET2 were mutations detected in cases with dysplasia. **Conclusion:** In our cohort, NGS did not add any significant information in the lymphoid malignancies and benign hematological cases. NGS helped to define the allelic ratio of FLT3+ mutations and helped to accurately define the ELN risk of AML. Mutations that were detected in the cases with dysplastic bone marrow findings were concordant that were reported in the literature. Larger case series are needed in order to define the therapeutic and prognostic implications.

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PP 08

INAPPROPRIATE ADH SYNDROME OCCURING DURING B-ALL TREATMENT

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Case report: Inappropriate ADH syndrome is a cause of hyponatremia with increased ADH secretion despite normal plasma osmolality and euvolemic state.There are many related drugs in its etiology.Inappropriate ADH syndrome occured in two B-ALL diagnosed patient during cyclophosphamide and vincristine treatment regimen.The detection of inappropriate ADH syndrome in both patients with euvolemic hyponatremia shows the importance of reviewing the drugs used by the patient in the etiology of hyponatremia.

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PP 09

T-ACUTE MYELOID LEUKEMIA CASE THOUGHT TO BE ASSOCIATED WITH RADIOIODINE (I^{131}) TREATMENT

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Case report: Ionizing radiation and chemotherapeutic agents can cause carcinogenic effects by causing DNA damage.A 40-year-old female patient diagnosed with thyroid papillary carcinoma in 2016 and subsequently administered 150 mCi radioiodine (I^{131}). Leukocytosis was detected in the examinations performed due to urinary system infection. She was diagnosed t(9:22) p210 positive AML M1-2. The patient had a history of Stargardt Syndrome.Development of t-AML after radioiodine treatment is very rare.

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PP 10

FLT3-ITD POSITIVITY IN AML; CASE SERIES

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Objective: Diagnosis of AML requires additional procedures, including pathological examination, immunophenotyping, cytogenetic examination, and molecular diagnosis. The determination of the specific cytogenetic abnormality is important for the selection of appropriate treatment and prognostic analysis.The 2 most common mutations of the FLT3 gene are FLT3-ITD and FLT3-D835. Here, we will present FLT3-ITD positive AML cases admitted to our clinic between 2019-2021. **Case report:** We have 5 cases of AML FLT3-ITD heterozygous. In all our cases, Midastaurin was given with 7+3 chemotherapy (CT) in the initial treatment. While 1 of our cases went into remission, the other 4 relapsed. All of the patients who relapsed were given FLAG CT, no remission was achieved and they were switched to ADE CT. Remission was achieved in 2 of 4 patients, 2 of them were refractory. One patient was given gilteritinib. HSCT was performed in 2 patients. While 2 of our

patients are dead, 2 of them are in remission and 1 of our patients is still under treatment. **Results:** FLT3 gene mutations are strongly associated with leukocytosis and poor prognosis in patients with AML(1-3). Patients with any of these mutations have a higher risk of recurrence and a lower survival rate[3]. All of our patients had leukocytosis at the time of diagnosis. Four of our patients relapsed and all of these patients were refractory to chemotherapy. Our patients who were refractory to treatment had a high mortality rate (50%) and a lower survival time (8-12 months). **Conclusion:** FLT3 signaling inhibitors have been used both alone and in combination to improve clinical outcomes in patients with AML with FLT3 mutations. While inhibitor monotherapy provides clinical response, its efficacy is usually temporary and resistance develops rapidly. Various combination therapies are used to enhance efficacy and prevent or overcome resistance. More studies are needed to evaluate its efficacy and explain the development of resistance.

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PP 11

EXPERIENCE OF GLASDEGIB IN PATIENTS WITH ELDERLY ACUTE MYELOID LEUKEMIA

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Aim: Acute myeloid leukemia (AML) is characterized by the increase of high levels of myeloid cells in the bone marrow. In general, AML is a disease of older adults. Many adults with AML are unable to receive intensive chemotherapy because of its toxicity.In this study, it was aimed to retrospectively evaluate patients with AML who were treated Glasdegib-based regimens in our center. **Case 1:** A 75-year-old male patient was diagnosed with congestive heart failure + AML, and idarubicin and cytarabine chemotherapy protocol was started. The patient started to receive covid treatment due to covid lung involvement. The patient, whose treatment was interrupted for 1 month, received the second course as LDAC + glasdegib. In the bone marrow biopsy performed after the 5th cycle, it is observed in remission. **Case 2:** An 82-year-old male patient was diagnosed with chronic renal failure. With a diagnosis of AML intermediate risk LDAC+glasdegib treatment was given to the patient who did not go into remission after 4 cycles of decitabine treatment. The patient, who was followed in remission after 4 cycles, died due to pneumonia. **Case 3:** A 76-year-old male patient has a diagnosis of cerebrovascular disease. The patient, who was followed up in remission after 2 courses of azacitidine with a diagnosis of medium risk AML, was approved for glasdegib in the 3rd course of treatment, and he is being followed up with the 3rd course of LDAC+glasdegib therapy. **Material and method:** The data of the patients who were treated Glasdegib-based regimens with the diagnosis of AML in the Bozyaka Training and Research Hospital Department of Hematology were scanned retrospectively from their files. **Results:** In our 3 patients, 1 person died due to pneumonia, but the patient was being followed in remission. Our other 2 patients are still being actively followed up with LDAC + glasdegib treatments. **Discussion:** In 2018, the FDA approved glasdegib, a Hedgehog signaling pathway inhibitor, in adults 75 years of age or older with a diagnosis of AML or those with comorbidities that preclude the use of low-dose cytarabine plus intensive induction chemotherapy. Approval is based on interim results from the phase 2 BRIGHT 1003 study evaluating glasdegib in combination with LDAC or LDAC alone. The median OS was 4.9 months for LDAC versus 8.8 months in patients treated with glasdegib+LDAC. This difference represented an approximately 50% reduction in mortality in patients treated with glasdegib+LDAC. The final result of the BRIGHT 1003 study confirmed that glasdegib LDAC significantly improved OS compared to LDAC alone (hazard ratio, 0.495 [95% CI, 0.325-0.752]; P =0.0004). Also, the addition of glasdegib to LDAC did not cause a significant increase in adverse events.

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CHRONIC LEUKEMIAS

PP 12

SYNTHETIC BIOLOGY MEETS PRECISION MEDICINE: DRUG REPURPOSING FOR BLOOD CANCER PRECISION MEDICINE

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Objective: Optimizing Drug discovery and Translation is one of the key tracks in Global Challenges Annual meeting 2019 and is the critical factor in achieving UN Sustainable Development Goals 3 Good Health and Well Being. WHO reports Cancer is the second leading cause of death globally. The aim of the proposal is to establish robust drug screening platform which can identify drugs and drug combinations that are effective in precision medicine for relapsed individual South African Leukemia patients. **Methodology:** Here, cancer cell will be either directly analyzed using high-throughput drug screening or single cell drug screening will be performed using flow cytometry /microfluidics to provide datasets on drug sensitivity for individual patientsI. WP1: Establishing the culture setting for CLL/MM and high-throughput drug screening on CLL/MM.II. WP2: “Signaling pathway-only” limited drug screening for CLL/MMIII. WP3: Establishing setting for Precision Microfluidics-driven single cell drug screening; **Results:** Expected Results are using full-library drug screening results, we will identify effective drugs and drug combinations that inhibit cancer cell proliferation either through cytostatic or cytotoxic effects. These results will provide the basis for identifying effective drug combinations using our predictive analytics, which will be packaged as preclinical information for a precision clinical trial. Thus, we would establish cutting-edge platform that can handle blood cancer and also solid tumor. **Conclusion:** Using this pipeline, we aim to identify drug combinations that can overcome relapse stage and ultimately provide tailored-specific therapy options for