Cancer patients. Our intention is to develop technologies that provide clinically relevant drug combinations information to oncologists within a timeframe of 7 days. The development and validation of the screening pipeline will incorporate the first CSIR platforms for cancer translational research with respect to identifying effective cancer drugs.

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PP 13

AVASCULAR NECROSIS IN CHRONIC MYELOID LEUKEMIA: A REVIEW OF PATHOPHYSIOLOGY, PATIENTS' CHARACTERISTICS, AND CLINICAL OUTCOMES

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Objective: The exact incidence of avascular necrosis (AVN) in chronic myeloid leukemia (CML) is still unknown as the number of cases is limited. AVN was reported as an initial presenting manifestation in few CML patients. On the other hand, AVN was linked to medications used in CML treatment, specifically interferon-alpha (IFN-α) therapy and tyrosine kinase inhibitors (TKI). Our review aims to describe the pathophysiology, patients' clinical characteristics, and outcomes of AVN in CML. **Methodology:** We searched PubMed and Google Scholar for the case reports and series of patients with CML who developed AVN from inception to July 2021. We found 21 cases of AVN in CML patients,17 cases with AVNFH, and four cases with ONJ. Articles in the grey literature and non-English language publications were excluded. Patient characteristics, hematological parameters, management, and outcomes of AVN were extracted from those articles. **Results:** The median age was 39 years with an almost equal distribution between males and females. WBC counts were strikingly elevated in patients who initially presented with AVNFH (above 10,0000 in most cases). AVN related to CML management has been linked to TKIs and standard IFN-α therapies. Only 6 (out of 17) patients who developed AVNFH eventually required a hip replacement, and one (out of 17) developed a recurrent episode of AVNFH. All the reported cases of CML with ONJ were associated with TKIs **Conclusion:** Given the lack of data, we could not conclude whether AVN has an adverse prognostic effect on CML. However, the overall prognosis is comparable with AVN associated with other conditions. Clinicians should consider AVN in CML patients with either hip or jaw pain because early detection and management are essential to decrease morbidity and long-term disability in such patients. A further prospective study with a larger sample size is needed to clarify the different aspects of AVN in CML patients.

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PP 14

SECONDARY CHRONIC MYELOID LEUKEMIA FOLLOWING RADIOACTIVE IODINE (I131)

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Objective: Radioactive iodine (RAI) with I131 has an established role in managing differentiated thyroid carcinoma, namely papillary thyroid carcinoma (PTC) and follicular thyroid carcinoma. However, concerns have been raised about its possible carcinogenic effects. Papers of t-CML following I131 are increasingly reported, and thus this review is dedicated to highlighting it. **Methodology:** All reports from the 1960s to date related to CML following RAI therapy were searched on Google Scholar and PubMed. Different search terms with Boolean function to search for the relevant articles. **Results:** We identified ten articles reporting 12 cases, as presented in table 1. We found that most of the reports were for men (8/12) under the age of 60 years (10/12), and the primary tumor was of PTC characteristics (5/12 were PTC, and 3/12 were mixed papillary-follicular carcinoma). The dose of I131 ranged between 30 millicuries (mCi) to 850 mCi; the mean dose was 331 mCi. Also, t-CML developed within the first ten years (9/12), mainly between 4-7 years post-exposure. **Conclusion:** A few reports found a statistically significant increased risk of leukemia following RAI therapy; some suggested a relative risk of 2.5 for I131 vs. no I131. Observed findings from these studies include a linear relationship between the cumulative dose of I131 and the risk of leukemia, doses higher than 100 mCi were associated with a greater risk of developing secondary leukemia, and most of the leukemias developed within the initial ten years of exposure.

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CHRONIC MYELOPROLIFERATIVE DISEASES

PP 15

CONCOMITANT LATENT POLYCYTHEMIA VERA AND MGUS.

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Objective: With the introduction of changes in the diagnostic criteria for polycythemia vera (PV) in the 2016 WHO classification, it became necessary to revise the diagnosis in some patients. Cases with latent (masked) polycythemia vera (LPV) were identified. Bone marrow trepanobiopsy takes one of the most important place in the differential diagnosis of LPV with other myeloproliferative diseases.We describe a case with coexistence of LPV and MGUS in a patient at the onset of the disease. **Case report:** Patient F.I., aged 62, was admitted with complaints of burning sensation in both feet, pain in the left lower extremity, back pain, nocturia 2-3 times per night and

weight loss of 6-7 kg.Lumbar and whole spinal MRI revealed changes in the intensity of the medullary signal, mild decrease in the height of L2-L3 and T10 . EMG revealed polyneuropathy.PET showed a moderate uptake of FDG in the localization of the bone marrow. The spleen was enlarged-size-157 mm. **Methodology:** Laboratory findings: hemogram-WBC-11.15 × 103/μL, Hgb-15g / dL, HCT-48%, PLT-604 × 103/μL. Bone marrow biopsy, imprint, aspiration revealed moderately hipercellular bone marrow with increasing in all 3 series, groupings in megakaryocytes, containing limited (3-4%) kappa monoclonal plasma cell population; moderately increasing reticulin fibers (grade 1 according to WHO). Karyotype 46, XY; multiple myeloma FISH panel: translocation 4; 14 and translocation 11; 14 (+). JAK2V617F-50.48% (+). **Results:** The key point in the diagnosis was trilineage hyperplasia of the bone marrow,because the reticulin fibrosis may occurs in 20% of PV cases. Thus, the patient was diagnosed with LPV. Due to the detection of plasma cells in the bone marrow (3-4%), kappa light chains, with the diagnosis of LPV, the diagnosis of MGUS was established.The patient was prescribed ASS 100 mg per os, Hydrea at a dose of 500 mg every other day. For MGUS, the "wait and watch" tactic was chosen. **Conclusion:** In the diagnosis of LPV, along with molecular genetic research, trepanobiopsy of the bone marrow plays a leading role. The possibility of a combination of myeloproliferative and other diseases should not be ruled out.

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PP 16

THE OUTCOME OF FATHERHOOD IN PATIENTS WITH PHILADELPHIA NEGATIVE MYELOPROLIFERATIVE NEOPLASMS, A SINGLE INSTITUTION EXPERIENCE

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Objective: The aim of this retrospective study is to evaluate fertility in the Philadelphia-negative MPN male patients and the effect of treatment received on male fertility and the outcome. **Methodology:** This is a single-center, mixed-design study (retrospective + phone interviews) conducted within the National Center for Cancer Care and Research. **Results:** 120 patients were interviewed, only 19 patients (15.7%) had met the inclusion criteria. The majority of patients had lost follow-up or cannot be contacted, and 29.1% of patients had their families completed by the time of diagnosis. The treatment received includes hydroxyurea, interferon, and ruxolitinib. The mode of delivery was normal vaginal delivery in 68% of the pregnancies. The total number of conceptions was 27; three stillbirths were reported. **Conclusion:** The data showed that most MPN male patients on treatment had their offspring born normally with no delivery complications, no reported congenital anomaly or growth retardation, and no report of MPN-related cancers. Though, further studies with a larger sample size are required to fully understand the effect of medications on the outcome of fatherhood in Philadelphia negative MPN patients.

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PP 17

CONCOMITANT JAK2 AND BCR-ABL1 IN PATIENTS WITH CHRONIC MYELOID LEUKEMIA CLINICAL IMPACT AND RESPONSE TO THERAPY: A SYSTEMATIC REVIEW

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Objective: The aim of this review is to assess patients with chronic myeloid leukemia with concomitant JA2 positive for - their characteristics - response to treatment **Methodology:** We searched the English literature (Google Scholar, PubMed, and SCOPUS) for studies, reviews, case series, and case reports of patients with chronic myeloid leukemia who had JAK2 mutation. Inclusion criteria: were the presence of JAK2 mutation in CML patients with BCR-ABL1 rearrangement and, secondly, age ≥18yrs. The search included all articles published up to 20th April 2021. **Results:** A total of 25 patients met our criteria of the search. Twenty-two patients were diagnosed in the chronic phase, 2 patients in the accelerated phase, and one patient transformed to the blast phase. More females n=16 and 10 males. The mean age at the time of diagnosis was 61.3 years. 9 patients had to be switch to second-line therapy. Age and gender distribution and the presence of splenomegaly or organomegaly are almost the same. Males were slightly more than females. **Conclusion:** It is difficult to conclude that multi-kinase inhibitors are superior to imatinib in treating CML with concomitant JAK2 mutation. But the result of the reported cases showed that multi-kinase inhibitors are more likely to be successful in achieving remission and loss of JAK2 mutation. However, it is difficult to generalize the result without further studies due to the few numbers of patients and the unusual association.

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COAGULATION DISEASES

PP 18

DOUBLE HETEROZYGOTIC FV DEFECT WITH HETEROZYGOTIC FV LEIDEN MUTATION AND FV DEFICIENCY IN THROMBOSIS

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Objective: FV Leiden mutation causes activated protein C (APC) resistance and causes an increase in thrombin level.