VOLUME-7, ISSUE-12, DECEMBER-2018 • PRINT ISSN No 2277 - 8160

Original Research Paper

Pathology

ACUTE AND CHRONIC LEUKEMIAS – A RETROSPECTIVE STUDY DURING LAST TWO AND HALF YEAR IN A TERTIARY CARE CENTRE OF GREATER GWALIOR REGION

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KEYWORDS :

INTRODUCTION

Leukaemias are clonal neoplastic disorder of pluripotent hematopoietic stem cells characterized by abnormal proliferation of myeloid granulocytic erythroid megakaryocytic and/or lymphoid cell lines(1). Leaukaemias constitiute a significant form of blood disorders affecting all age groups throughout the world. Leukaemias are the 10th most common cancerin men and 12 th most common in women , constituting 3% of Global Cancer burden(2). Our study is a retrospective study carried out in tertiary care hospital during 2½ years period. Early diagnosis of leukemias and typing is mandatory for effective therapy as prognosis and survival rates are different for each type and subtype.

AIMS AND OBJECTIVES

The aim of our study is to find the Incidence of leukemias in our greater Gwalior region; To find the incidence of various types of leukemias - Myeloid and Lymphoid Leukemias ; To study the age and sex distribution of various types of leukemias , To study the various paediatric hematologic malignancy. To find various diagnostic modalities, multiparameteric evaluation to diagnose case of leukemia at earliest and its management.

MATERIAL AND METHODS

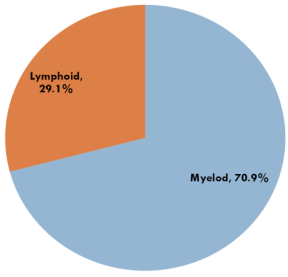
This is a retrospective 2½ years study carried out in the Department of Pathology, Gajra Raja Medical College,and JA group of Hospital , Gwalior. Data collected from the records maintained in hematology section of Pathology Department. All the cases were carefully examined, diagnosed and classified further into Myeloid and Lymphoid, Acute/Chronic by expert faculty,according to French Americal and British (FAB) classification.

A total of 230 cases of leukemia were included in our study. Peripheral blood was collected in K3 EDTA vial, Complet e Blood Counts done on fully automated hematology counters (Hemoglobin, platelet, total white blood cell were recorded, peripheral blood smear, bone marrow smear ,stained by Leishman and Leishman+Giemsa stain). All samples were thoroughly examined and reported by expert hematologists.

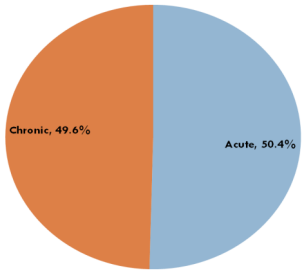
In most of the cases Myeloperoxidase, Periodic Acid Schiff was done to differentiate between Myeloid and Lymphoid Leukemias.

RESULTS

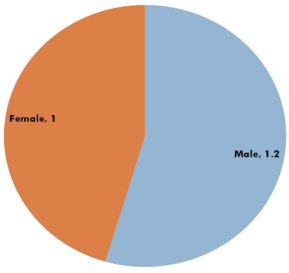
In our study the incidence of leukemia was found to be 0.07% - Out of Total 3.2 Lakh samples examined, 230 were diagnosed as Leaukemia. Among 230 cases 116 had Acute leukemia and 114 had Chronic leukemia. Among acute leukemias, A cute Myeloid to Lymphoid ratio we found is 23.9 : 25.6. AML: Among AML we had M1 -2 , M2-8, M3-28, M4-6 M5-14, M6-1, M7-0 cases. CML : CML in chronic phase – 86, Blast crisis-12 Accelerated phase -6 JMML-2 Pediatric leukemias (< 14 years of age)AML-7 (4 male, 3 female) ALL- 30 (15 male, 15 female)



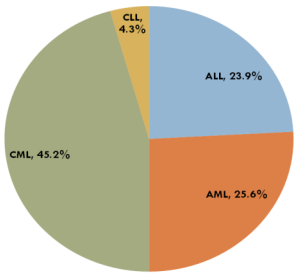
Myeloid to Lymphoid Laeukemia Ratio



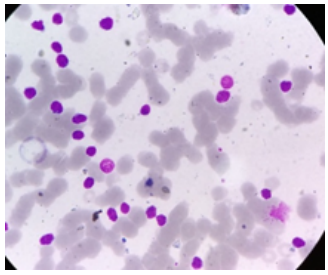
Ratio Of Acute versus Chronic Laeukaemia



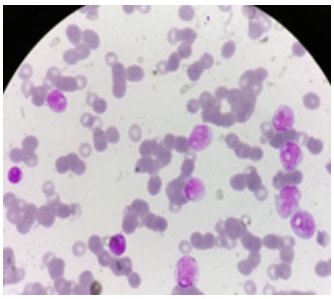
Male:Female Ratio



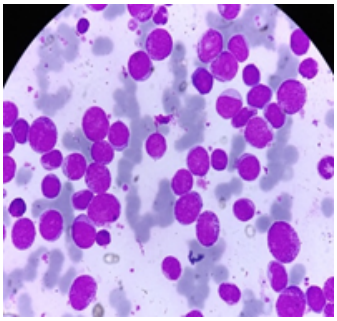
Distribution of Various types of Laeukaemia.



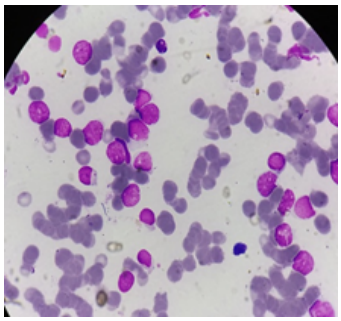
Photomicrograph showing Mature looking lymphocytes in CLL X 100oil immersion.



Photomicrograph showing Myeloblasts in AML X 100oil immersion.



Photomicrograph showing immature cells of Myeloid series X 100oil immersion.



Photomicrograph showing Lymphoblasts in ALL X 100oil immersion.

DISCUSSION

Many studies conducted on epidemiology of leukemia in the past matches with our present study in many aspects. Age of diagnosis helps in determining the type of leukemia. In our study we found ALL affects children primarily and AML effects adults. We found a significant number of cases of leukemia in pediatric age group. In India cancer is the 9th most common cause of death among children between 5-14 years of age and approximately 45,000 children are diagnosed with cancer annually leukemias continue to be the largest contribution to cancer related mortality in children followed by lymphomas and CNS tumours. Incidence of leukemias varies with gender, ethnicity, geographic regions, socioeconomic factors. In our study we found most common CML followed by AML, ALL and CLL. Our study showed the commonest leukemia as CML (45.2%) which well matches observation of Chatterjee JB et al (3) , Advani SH,Jussawala DJ et al(4) . Myeloid leukemias are more common as in previous studies carried out by Rani S et al(5) and Pradhan PK et al (6) . In our study we had 10 cases of CLL 4.3%. Few study differ showed high incidence of CLL in Denmark Poland as studied by Kwiatkowski A et al. Our study showed a male preponderance as found in previous studies as by Radha Rathi etal (7)and Ashok Kumar et al(8) in studies conducted in other parts of India. It was probably attributed to more exposure of males to occupational and environmental carcinoma.

CONCUSION

In our study we observed the incidence of different subtypes of Leukemias, their age and sex relation. We concluded that primary hematological malignancies should be targeted with multiparametric approach so as to diagnose early and manage efficiently. Median age group found to be 66 years of age and this elderly age leukemia is associated with other comorbidities. Special stains, Flowcytometry and cytogenetics are the advanced mandatory techniques specific for further typing of Leukemias so as to direct specific therapy and complete remission.

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