Original Research Paper

Volume - 10 | Issue - 11 | November - 2020 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Haematology

HAEMATOETIOLOGICAL EVALUATION OF SPLENOMEGALY

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ABSTRACT **BACKGROUND:** Splenomegaly is usually the result of an underlying disorder.Causes ranging from infections to haematological malignancies.

AIMS AND OBJECTIVES : Present study aims to find out the frequency of various haematological causes of splenomegaly and to study its haematological parameters .

MATERIAL AND METHODS: This descriptive case series study was carried out at Department of Medicine at Nri General Hospital from 1st March 2019 to 31st August 2019,over a period of six months. 100 patients older than 13 years of age with clinically enlarged spleen were selected for this study. Sampling technique is Non propability convinient sampling. After getting informed consent from the patients proforma filled elaborating history, important clinical findings and investigations like abdominal ultrasound , complete blood picture , liver function tests , virals were performed.

RESULTS: Males (57%) are most commonly affected than females (43%). The most common age group in males was 41-50 yrs and females was 21-30 yrs. The maximum cases were identified with moderate splenomegaly.Among the haematological causes 57% were leukemias,of which 30% were chronic and 27% were acute .

CONCLUSION : Splenomegaly in a symptomatic person should always be investigated thoroughly as most of the cases are treatable. Haematological parameters with enlarged spleen is utmost important as an additional tool in evaluating the etiopathogenesis of splenomegaly.

KEYWORDS : anemia,acute leukemia,chronic leukemia,haemoglobin,splenomegaly.

INTRODUCTION:

Splenomegaly is defined as enlargement of spleen measured by weight or size. [1]

Spleen is usually not palpable in healthy people, it often becomes palpable due to some underlying disease. [2]

A variety of diseases can lead to splenic enlargement of which most of the chronic conditions like chronic malaria, haemolytic anemias lead to massive splenomegaly while on most acute conditions, patients present with a mild enlargement of spleen. [3]

The etiology of splenomegaly thus differs with the grade of splenomegaly at presentation,the age of the patient,clinical features and associated signs and symptoms, in spite of advances in haematology, immunology,radiology and ultrasonography, there remains a group of patients of enlarged spleen with a final diagnosis of " Splenomegaly of Indeterminate Origin" or "obscure splenomegaly" where a definitive diagnosis cannot be reached even after possible investigation both invasive and non-invasive. [4]

When the spleen grows in size, it filters large number of blood cells and platelets leading to cytopenia . [5]

Hypersplenism may present without splenomegaly and vice versa. [5]

Splenomegaly becomes more significant when associated with hepatomegaly and lymphadenopathy. [6]

Spleen combines the innate and adaptive immune system in a uniquely organised way. [7]

In most of the cases ,splenomegaly is the first and the only sign of an underlying serious disorder which makes it important to regard a palpable spleen a significant physical sign and it also makes it important to investigate such a case. [3]

Splenomegaly may be diagnosed clinically or radiographically using Ultrasound,Computarised Tomography,Magnetic Resonance Imaging. [8]

Ultrasonography is a non-invasive, highly sensitive, specific imaging technique for the evaluation of splenic size,it significantly improved the sensitivity of physical examination alone in diagnosing splenomegaly in a prospective study of 39 adult hospatilised patients. [9]

The causes of splenomegaly is often found outside the spleen and therefore an extensive diagnostic medical workup is frequently required. [10]

Haematological diseases have been reported to account for 16-66%,hepatic diseases for 9-14%,infectious diseases for 1-6% and remain idiopathic. [11]

AIMS AND OBJECTIVES- Present study aims to find out the frequency of various haematological causes of spleenomegaly, to study its haematological parameters and to find out the role of these parameters as a tool in evaluating the etiopathogenesis of spleenomegaly.

MATERIALS AND METHODS:

INCLUSION CRITERIA

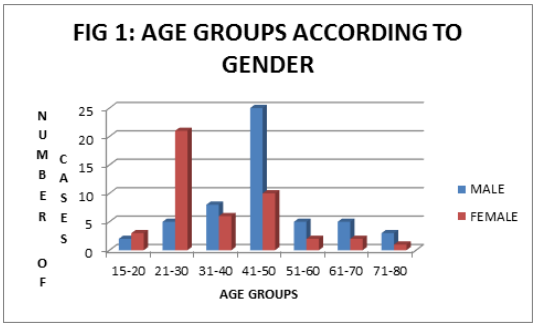
1. All cases having splenomegaly were included.
2. Cases not having palpable splenomegaly but ultrasonographically detected splenomegaly were included

EXCLUSION CRITERIA

1.All cases below 13yrs were excluded from this study.
2.All non-haematological causes of splenomegaly were excluded.

RESULTS:

Fig 1: Classification Of Various Age Groups According To Gender



The sujects were divided into various age groups according to gender in which high number were seen in age group of 41-50 yrs in males and 21-30 in females respectively.

Table 1 : Haematological Causes Of Splenomegaly

CAUSES	PERCENTAGE
CHRONIC MYELOID LEUKEMIA	30
ACUTE MYELOID LEUKEMIA	12
IRON DEFICIENCY ANEMIA	7
MYELOFIBROSIS	6
ACUTE LYMPHOBLASTIC LEUKEMIA	5
NON-HODGKINS LYMPHOMA	5
AUTOIMMUNE HAEMOLYTIC ANEMIA	5
MEGALOBLASTIC ANEMIA	4
DIFFUSE LARGE BCELL LYMPHOMA	3
CHRONIC LYMPHOBLASTIC LEUKEMIA	3
IMMUNE THROMBOCYTOPENIC PURPURA	3
HODGKINS LYMPHOMA	3
APLASTIC ANEMIA	2
PROMYELOCYTIC LEUKEMIA	2
SIDEROBLASTIC	1
MULTIPLE MYELOMA	1

Among various haematological causes of splenomegaly,chronic leukemia patients were found to be having high proportion of splenomegaly and myeloma patients having less portion of splenomegaly.

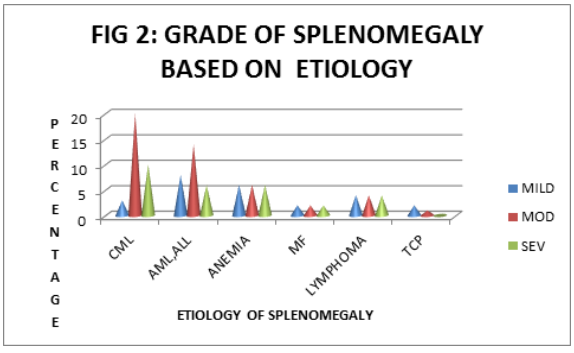
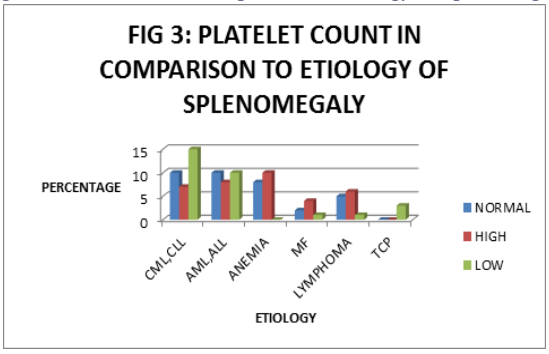


Fig 2: Grade Of Splenomegaly Based On Etiology

Among various etiologies chronic leukemic patients were found to be having higher grade of spleenomegaly.

Fig 3 : Platelet Count In Comparison To Etiology Of Splenomegaly



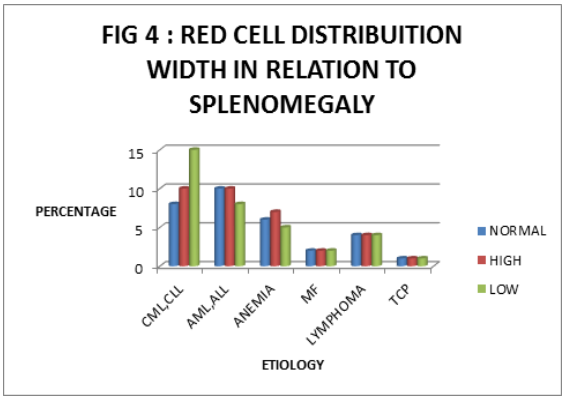
Among various etiologies of splenomegaly, chronic leukemic patients were found to have more thrombocytopenia than other cases

Table 2 : Mean Corpuscular Volume,mean Corpuscular Haemoglobin, mean Corpuscular Haemoglobin Concentration In Relation To Cause Of Splenomegaly

CAUSE	NORMAL	HIG	LOW
CHRONIC LEUKEMIA	6	12	15
ACUTE LEUKEMIA	8	12	8
ANEMIA	2	4	12
MYELOFIBROSIS	0	0	6
LYMPHOMAS	4	4	4
THROMBOCYTOPENIAS	3	0	0
TOTAL	23%	32%	45%

Among various etiologies of splenomegaly, chronic leukemic patients were found to have low mean corpuscular volume, low mean corpuscular haemoglobin,low mean corpuscular haemoglobin concentration than other cases.

Fig 4: Red Cell Distribuition Width In Relation To Splenomegaly



DISCUSSION:-

Spleenomegaly in symptomatic patients is a considerable clinical significance. In this cross-sectional study,we analysed haematological parameters of 100 cases of spleenomegaly and correlated with clinical findings. Very few similar studies have been conducted in past.

In our study,males are commonly affected than females and most common age group 41-50 yrs and females 21-30 yrs.

In maximum cases,moderatespleenomegaly is present in our study possibly because more number of cases in chronic stage of disease. Similar observations were made by Nadeem.A.et.al had reported a large majority of patients with mild spleenomegaly probably because of early stage of disease.

There is an associated hepatomegaly in 36% of cases followed by lymphadenopathy in 14% and concomitant hepatomegaly and lymphadenopathy in 6% of cases.

The 20 % of spleenomegaly cases in our study had decreased haemoglobin concentration ,Varsha .et.al. reported 21% cases of anemia while Yimite .KM.et.al reported 72% cases of anemia in their study.

The red cell indices are quite helpful in morphological classification of anemia .MCV,MCH,MCHC are reduced in 45% of the cases.

Leukemia constituted the most common cause among which chronic leukemia is more than acute one.

RDW is increased in 35% of cases among which common is leukemia followed by iron deficiency anemia.

Hypersplenism is a condition in which spleen becomes increasingly active and removes the blood cells. It can result from any spleenomegaly.

The present study shows that out of 100 cases of splenomegaly,30 cases presented with hypersplenism, among which leukemia is most common followed by anemia.

Bone marrow examination and biopsy is helpful in the diagnosis or in excluding primary marrow involvement and suggested alternative etiology.

In present study most of the cases with hypersplenism presented with moderate spleenomegaly.

CONCLUSION:

we coclude that spleenomegaly in a symptomatic person should always be investigated thoroughly as most of the common cases are treatable.

Given the multitude of functions of spleen , it is not suprising that spleenomegaly occurs in wide variety of conditions.

Haematological causes out number the non- haematological causes and are utmost important.

Haematological profile in cases with spleenomegaly are important as a diagnostic or additional tool in eluciding the etiogenesis of spleenomegaly.

ACKNOWLEDGEMENT:
We gratefully acknowledge the contribuition of the study participants,the staff for their valuable role in this study.

CONFLICTS OF INTREST:
There are no conflicts of intrest.

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