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RESEARCH ARTICLE

TO STUDY THE CLINICO-ETIOLOGICAL PROFILE OF PATIENTS WITH SPLENOMEGALY IN A TERTIARY CARE HOSPITAL – A CROSS-SECTIONAL OBSERVATIONAL STUDY.

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Abstract

Introduction: a palpable spleen suggests enlargement of the organ and is an important clinical sign produced by diseases affecting the spleen. The incidence and etiology of splenomegaly is strongly dependent on the geographical location. In a patient, splenomegaly should be investigated properly to ascertain the etiology. Causes may vary with diseases prevalent in that area.

Materials and methods: this cross sectional, observational study was performed in 510 adult patients with splenomegaly who reported to department of medicine gmc jammu from may 2014 to april 2015, over a period of 1 year. The patients were evaluated for their complete clinical profile & etiology of splenomegaly. Grading of splenomegaly was done by hacket's grading. Thorough relevant investigations were carried out.

Results: most patients were below 45 years of age. Most common etiological category of splenomegaly was hematological (54.7%) followed by congestive (17.6%), infectious (12.7%) and other (4.9%) causes. Most common splenomegaly patients belong to hacket's grade ii (54.7%), followed by grade iii (27.84%), grade i (12.94%) & grade iv (4.31%). Among hematological etiology chronic myeloid leukemia was the most common cause (25.3%). Malaria was the commonest etiology among infectious causes (5.9%). On clinical examination pallor was present in 33.1% cases. 10.6% of patients had gi symptoms, 5.9% of patients had icterus, lymphadenopathy was present in 7.8% patients. We compared the results of our study with other studies & concluded that clinical profile & etiological spectrum of splenomegaly varies from region to region.

Conclusion: the present study concludes that splenomegaly in a symptomatic person should be properly evaluated. In our study hematological causes (54.7%) outnumbered the non hematological cause (45.3%) of splenomegaly.

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Introduction:-

A palpable spleen suggests enlargement of the organ and is an important clinical sign produced by diseases affecting the spleen. The incidence and etiology of splenomegaly is strongly dependent on the geographical location. In a patient, splenomegaly should be investigated properly to ascertain the etiology. Causes may vary with diseases prevalent in that area (1).The causes of splenomegaly even vary between different regions in the same Country. Till date there are a limited number of studies on the frequency of various causes of splenomegaly. Of these, some have been reported from the Indian subcontinent. There appears to be a changing spectrum of splenomegaly in different regions of same country. Some of the diseases that exhibit splenomegaly include chronic myeloid leukemia, acute leukemia, lymphoma, hemolytic anemia, nutritional anemia, chronic liver disease with portal hypertension, malaria, typhoid fever, storage disorders, connective tissue disorders etc. Some studies have documented Haematological disorders to be most common while others have shown Infectious causes and some congestive causes to be more common. A variable clinical profile and etiological spectrum has been described in cases of splenomegaly. Inspite of such common finding in patients; there are limited studies in India regarding the etiological spectrum of splenomegaly. The different studies have shown different causes for splenomegaly. Therefore we have planned to study cases with splenomegaly at GMC Jammu to find the clinical profile and etiological spectrum of these cases.

Material & Methods:-

The study was carried out in the Department of Medicine GMC Jammu. The study was conducted from May 2014 upto 1 year duration. Newly reported cases of >14 yrs of age & detected with splenomegaly on per abdominal examination or on USG abdomen cranio-caudal length of spleen >13cm, were selected. Grading of splenomegaly was done by Hacket's grading(2). The written informed consent was taken prior to the enrollment in the study from each patient. All the patients were subjected to detailed history regarding recent infections like malaria, fever, weight loss, sweating, pruritis, jaundice, abnormal bleeding/brusing/joint pain, history of alcoholism, trauma, history of neonatal umbilical sepsis, history of residence and travel abroad, high risk sexual behavior, past medical history, drugs etc. Physical examination was done on every patient for size of spleen, hepatomegaly, lymphadenopathy, fever, icterus, bruising, petechiae, for stigmata of liver disease, stigmata of RA/SLE, splinter hemorrhage, retinal hemorrhage, cardiac murmur etc.

Grading was done by Hackett's grading, which is WHO accepted grading & as follows:
Class 0 - Spleen not palpable even on deep inspiration.
Class 1 - Spleen just palpable below costal margin on deep inspiration.
Class 2 - Spleen palpable but not beyond a horizontal line half way between the costal margin and umbilicus.
Class 3 - Spleen palpable more than half way to umbilicus, but not below a line running horizontally through umbilicus
Class 4 - Spleen palpable below umbilicus but not below a horizontal line between umbilicus and pubic symphysis.
Class 5 - extending more than class 4

Complete hemogram;Red blood cell indices MCV (Mean corpuscular volume), MCH (Mean corpuscular hemoglobin) and MCHC (Mean corpuscular hemoglobin concentration), USG abdomen, chest X ray were performed in every case. Further specific investigations were performed in cases to find out the cause of splenomegaly as warranted by the clinical context and the results of baseline investigations like Bone Marrow examination in hematological cases, upper GI endoscopy in cases of portal hypertension, liver function tests (SGOT, SGPT, ALP, S.Bilirubin, S.Protein) for hepatitis and chronic liver disease; serum Iron studies, vitamin B12 & folic acid assays for type of anemia; anti-nuclear factor (immunofluorescent method) for autoimmune disorder; serological tests and blood culture for enteric fever; viral serologies for HIV, hepatitis B virus, Hepatitis C virus and dengue; immunphenotyping for leukemias & lymphomas; chest X-ray, montoux test for disseminated TB; Hb electrophoresis, DCT, ICT, LDH for hemolytic anemias; BCR-ABL for chronic myeloid leukemia; echocardiography for cardiac evaluation & other investigations according to history & clinical examination of patients.

Observations & Results

The study population consisted of 510 patients with age range from 14 years. There were 320 males and 190 females in the study group with a male to female ratio (M: F) of 1.7:1 (Table 1). Out of 510 cases, 115 cases

belong to age group 15-25 years, 104 cases in age group 26-35 years, 123 cases in age group 36-45 years, 63 cases in age group 46-55years, 62 cases in age group 56- 65 years and 43 cases in age group more than 66 years. Most of the patients fall in the age group 36 – 45 yrs as depicted in Table 2.

The most common symptom was pallor in 174 (33.1%) patients followed by generalized weakness and fatigue in 90(17.6%) cases followed by fever (14.9%), GIT Symptoms (10.6%). Bleeding manifestations were observed in 10.9% of cases. Other symptoms like yellowish Discoloration of sclera & generalised lymphadenopathy were present in 5.9% and 7.8% of cases (Table 3).

Out of 510 patients with splenomegaly Hackett's grade I splenomegaly was present in 12.94% cases, grade II was in 54.7% cases, grade III in 27.84%, grade IV in 4.31% and grade V in 0.20% cases. Table 4 below shows Clinical Grading in Patients with Splenomegaly

Hematological causes constituted 279(54.7%) of cases, followed by Congestive causes constituting 90 (17.6%) of cases. Next in series were patients of Infectious causes accounting for 65(12.7%) of cases. Other causes included 25(4.9%) cases & 21(4.1%) cases remain idiopathic.

Hematological malignancies were most common cause of splenomegaly in this study. Among 279(54.7%) of 510 cases of hematological etiology, chronic myeloid leukemia constituted 129(25.3%) cases followed by 36(7.1%) cases of acute leukemia & 30 cases of lymphoma. In acute leukemia there were 27(5.3%) cases of AML & 9(1.8%) cases of ALL. In lymphoma 24(4.7%) cases were of NHL & 6(1.2%) cases of hodgkin lymphoma. Next in the series were of cases of nutritional anemia including 15(2.8%) cases of megaloblastic anemia & 9(1.8%) cases of iron deficiency anemia, Hemolytic anemia 27 (5.3%) cases. Chronic lymphoid leukemia constituted 15(2.9%) cases, myelodysplastic syndrome 6 (1.2%) cases & myelofibrosis 9(1.8%) cases. Polycythemia Vera constituted 3(0.6%) cases. 90 (17.6%) of 510 cases were of congestive etiology ,with portal hypertension constituting 30(5.9%) . Among 30(5.9%) of 65 cases of infectious etiology of splenomegaly were of malaria infection, 25(4.9%) cases were due to enteric fever, 4 (0. 78%) cases were due to disseminated tuberculosis, 4(0.78%) cases were due to HIV infection and 2(0.39) were due to Rickettsial fever. Among other causes of splenomegaly, 15(2.9%) cases were associated with SLE, 10(2%) cases of rheumatoid arthritis. In 21(4.1%) cases, the cause of splenomegaly could not be found. (Table 5)

Discussion:-

In this study, maximum cases were in age group of 36-45 years (24.12%). The male: female ratio was 1.7:1. In a study by Varsha S et al (3), the male to female ratio was 1.2:1 that was comparable to our study. In the present study, pallor were the commonest clinical symptom seen in 174(33.1%) patients followed by generalised weakness (n=90). The clinical presentation seen in this study is due to higher number of cases of hematological diseases. These findings were comparable to study by Shirish S et al (4). In our study the most common cause of splenomegaly was due to hematological diseases constituted 54.7 % of cases which was comparable to study by Shirish S et al (60%) (4) and O'Reilly et al (57%) (5). Infectious causes were most common cause of splenomegaly in studies by J Balaji et al (6) & Asif Nadeem et al (7) constituting 41% & 44.6% respectively. The most common hematological case of splenomegaly in our study was CML (25.3%) which was comparable to study by J Balaji et al (6). Data from other studies shows that cirrhosis with portal hypertension is a common cause of moderate (4-8 cm) splenomegaly (8). Among infectious cases of splenomegaly most common cases were of malaria infection (5.9%) followed by enteric fever(4.9%) that were comparable to all other studies. Some studies on dengue fever show splenomegaly in a wide range between 8.2% and 60.0%(9,10). In one study of eighty five cases of AIDS, splenomegaly was found in 59 cases (69.4 %) (11). Some cases in present study have multiple etiologies, such as alcoholic liver disease causing liver cirrhosis & portal hypertension & associated with hepatitis B or C infection. For sake of statistics, these were grouped into congestive causes.

A study by Konan et al (12) shows multifactorial etiology although this study was conducted on children which shows maximum cases of splenomegaly were in grade II. 66 of 510 cases belongs to grade I (by Hacket's grading), while 279 were grade II, 142 cases were of grade III & only 22 cases were associated with grade IV.

Conclusion:-

The present study concludes that splenomegaly in a symptomatic person should be properly evaluated. In our study Hematological causes(54.7%) outnumbered the nonhematological cause(45.3%) of splenomegaly. Among hematological causes neoplastic causes were more common. The most frequent cause of splenomegaly was chronic myeloid leukemia(25.3%).

Table 1:- Sex Distributions of Patients with Splenomegaly .

SEX	NUMBER OF PATIENTS(N)	PERCENTAGE (%)
MALE	320	62.75
FEMALE	190	37.25
TOTAL	510	100

Table 2:- Age Distribution of Patients with Splenomegaly .

AGE GROUP (YRS)	NUMBER OF PATIENTS(N)	PERCENTAGE
15-25	115	22.55
26-35	104	20.39
36-45	123	24.12
46-55	63	12.35
56-65	62	12.16
MORE THAN 66	43	8.43
TOTAL	510	100

TABLE 3:- Presenting Complaints And Physical Finding In Patients With Splenomegaly

SYMPTOMS AND SIGNS	NUMBER OF CASES(N)	PERCENTAGE (%)
PALLOR	174	33.1
GENERALISED WEAKNESS	90	17.6
FEVER	76	14.9
BLEEDING MANIFESTATIONS	56	10.9
GIT SYMPTOMS	54	10.6
LYMPHADENOPATHY	40	7.8
JAUNDICE	30	5.9
TOTAL	510	100

TABLE 4:- Clinical Grading in Patients WITH SPLENOMEGALY

GRADES	NUMBER OF PATIENTS(N)	PERCENTAGE (%)
GRADE 1	66	12.94
GRADE 2	279	54.7
GRADE 3	142	27.84
GRADE 4	22	4.31
GRADE 5	1	0.20
TOTAL	510	100

TABLE 5:- Etiological spectrum Of Patients With Splenomegaly

ETIOLOGY	NUMBER OF PATIENTS(N)	PERCENTAGE (%)
1.HAEMATOLOGICAL	(279)	(54.7)
A)CHRONIC MYELOID LEUKEMIA	129	25.3
B) ACUTE MYELOID LEUKEMIA	27	5.3
C)ACUTE LYMPHOID LEUKEMIA	9	1.8
D)HODGKINS LYMPHOMA	6	1.2
E) NON HODGKINS LYMPHOMA	24	4.7
F) MEGALOBLASTIC ANAEMIA	15	2.8
G)HEMOLYTIC ANAEMIA	27	5.3
H) IRON DEFICIENCY ANAEMIA	9	1.8

I) CHRONIC LYMPHOID LEUKEMIA	15	2.9
J) MYELODYSPLASTIC ANAEMIA	6	1.2
K)MYELOFIBROSIS	9	1.8
L) POLYCYTHEMIA VERA	3	0.6
2.Congestive cardiac failure	90	17.6
3.Infections	(65)	(12.7)
a) Malaria	30	5.9
b)Enteric Fever	25	4.9
C)Disseminated Tuberculosis	4	0.78
D)HIV Infection	4	0.78
E)Rickettsial Fever	2	0.39
4.Portal Hypertension	30	5.9
5.OTHERS	(25)	(4.9)
A)SLE	15	2.9
B)Rheumatoid Arthritis	10	2
6.Idiopathic	21	4.1
total	510	100

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