Original research article

To Study the Clinical Spectrum and Etiological Profile of Patients with Splenomegaly in IGIMS, Patna: A Tertiary Care Centre of Bihar

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Abstract

170 adult patients with splenomegaly who visited the Department of General Medicine, Indira Gandhi Institute of Medical Sciences, Patna between May 2021 and April 2022 were the subjects of this cross-sectional observational study. The patients' whole clinical profiles and the cause of their splenomegaly were assessed. Splenomegaly was graded using Hacket's grading. Investigations that were relevant and thorough were done. The majority of patients were under 44 years old. Hematological causes of splenomegaly were the most frequent etiological group, accounting for 54.6% of cases, followed by congestive (24.4%), infectious (15.87%), and miscellaneous (4.6%) causes. Hacket's grade II patients make up the majority of splenomegaly cases (54%), followed by grades III (27%), I (12%), and IV (3%).The most frequent cause among haematological aetiologies was chronic myeloid leukaemia (25.28%) The most prevalent infectious cause was malaria. In 86% of instances, pallor was visible upon clinical examination. Hepatomegaly affected 43% of patients, icterus affected 25%, and lymphadenopathy affected 12% of patients. We compared the findings of our study with those of other studies and came to the conclusion that regional differences exist in the clinical profile and etiological spectrum of splenomegaly.

Keyword: Splenomegaly, Hacket's grading, chronic myeloid leukemia, portal hypertension

Introduction

A palpable spleen is a significant clinical indication of spleen-related illnesses and signals enlargement of the organ. The location has a significant impact on the incidence and genesis of splenomegaly. Splenomegaly in a patient should be thoroughly examined to determine the cause. The diseases that are widespread there may have several causes [1]. There are clear distinctions between developing and developed nations. Even within the same country, different regions can have diverse splenomegaly causes.

There have only been a few research conducted so far on the prevalence of different splenomegaly causes. Some of these have reportedly come from the Indian continent. Different parts of the same country appear to have a shifting spectrum of splenomegaly. Chronic myeloid leukemia, acute leukemia, lymphoma, hemolytic anemia, nutritional anemia, chronic liver illness with portal hypertension, malaria, typhoid fever, storage

disorders, connective tissue disorders, etc. are a few of the conditions that cause splenomegaly. According to some studies, hematological illnesses are the most prevalent, but other investigations have found that infectious and other congestive causes are more frequent.

In cases of splenomegaly, a diverse clinical profile and etiological spectrum have been noted. Despite this widespread finding in patients, there have only been a few research done in India on the range of etiologies for splenomegaly. The various investigations have revealed several splenomegaly causes. In order to determine the clinical profile and etiological spectrum of instances with splenomegaly at Department of General Medicine, Indira Gandhi Institute of Medical Sciences, Patna, we have therefore planned to research these cases.

METHOD:

The Department of General Medicine, Indira Gandhi Institute of Medical Sciences, Patna was where the study was conducted. The study was carried out for a full year. Selected patients have recently reported instances that were >14 years old and had splenomegaly either on an abdominal exam or on a USG abdomen with a craniocaudal length of spleen >12 cm. Hacket's gardening was used to grade the splenomegaly [2]. Each patient's written informed consent was obtained before they were enrolled in the study. All of the patients underwent a thorough medical history examination that included questions about recent infections like malaria, fever, weight loss, sweating, pruritis, jaundice, abnormal bleeding/bruising/joint pain, alcoholism, trauma, history of neonatal umbilical sepsis, residence and travel abroad, high-risk sexual behavior, past medical history, drugs, etc.

Every patient underwent a physical examination to look for signs of liver disease, RA/SLE, splinter haemorrhage, retinal haemorrhage, heart murmur, hepatomegaly, lymphadenopathy, fever, icterus, bruises, petechiae, and more.
Hackett's grading, a WHO-accepted grading system, was used, and the grades were as follows:
Class 0 - Even during intense inspiration, the spleen is not felt.
Class 1 - Just perceptible spleen on deep inspiration below costal margin.
Class 2: The spleen is palpable but does not extend past a line that runs parallel to the umbilicus and the costal margin.
Class 3: Spleen perceptible more than halfway to umbilicus, but not below a line perpendicular to the umbilicus.
Class 4: Spleen is perceptible below the umbilicus, but not below the horizontal line that runs between the umbilicus and the pubic symphysis.
Class 5: exceeding class 4 in length
Hemogram in its whole; red blood cell indices Each case underwent a USG of the abdomen and a chest X-ray, as well as measurements of the mean corpuscular volume, mean corpuscular haemoglobin, and mean corpuscular haemoglobin concentration. The clinical context and the outcomes of initial investigations, such as a bone marrow examination in haematological cases, an upper GI endoscopy in cases of portal hypertension, liver function tests for hepatitis and chronic liver disease, serum iron studies, vitamin B12 and folic acid assays for types of anaemia, anti-nuclear factor for autoimmune disorders, and serological tests, warranted further specific investigations to determine the cause of splenomegaly.

RESULT:

There were 160 patients in the study, ranging in age from 13 to 64. In the study group, there were 70 females and 90 males, for a male-to-female ratio (M:F) of 1.2:1. Out of 160 cases, 38 cases are related to people aged 13 to 24; 33 cases are related to people aged 25 to 34; 40

cases are related to people aged 35 to 44; 20 cases are related to people aged 45 to 54; 20 cases are related to people aged 55 to 64, and 13 cases are related to people aged 65 to 74. About half of the incidents involve children under the age of 18. (13-44 years).
Generalized weakness and exhaustion were the most prevalent symptoms, occurring in 76% of cases, followed by abdominal discomfort (47%), fever (27%), and abdominal distension (15%). In 12% of instances, bleeding symptoms were noted. other signs, such as yellowish Scleral discoloration and widespread lymphadenopathy were observed in 8% of patients (**Table 1)**.

Table 1: Clinical presentation of symptoms in Patients

Clinical Presentation	**Percentage of Patients**
Weakness and exhaustion	76%
Abdominal discomfort	47%
Fever	27%
Abdominal distension	15%
Bleeding symptoms	12%
Sclera discoloration	8%
Lymphadenopathy	8%

Out of 160 patients, the majority of patients had anemia, pallor was present in 86% of cases, 43% of patients had hepatomegaly, 25% had icterus, and 12% had lymphadenopathy. Congestive reasons made up 41 (24.4%) of cases, followed by 92 (54.4%) instances with hematological causes. Patients with infectious causes were next in the series, accounting for 22 (13.4%) of the cases. 10 (5.1%) and cases were due to additional factors.

In this investigation, haematological malignancies were the most frequent cause of splenomegaly. 42 (25.28%) of the 160 cases hematological etiology—92 (54.6%)—were chronic myeloid leukaemia, followed by 11 (6%) cases of acute leukaemia and 11 cases of lymphoma. There were 8 AML cases and 2 ALL cases with acute leukaemia. 9 cases of NHL and 1 case of Hodgkin lymphoma were both lymphomas. The next instances in the series were nutritional anaemia cases, including 8 (5.28%) cases of hemolytic anaemia and 4 (2%) cases of megaloblastic anaemia. There were also 2 (1.75%) cases of iron deficiency anaemia. 4 (2%) cases of chronic lymphoid leukaemia, 1 case of myelodysplastic syndrome, and 2 (1.75%) cases of myelofibrosis were reported. Each had two episodes of essential thrombocyosis and polycythemia vera. 41 (24.6%) of the 160 cases of congestive aetiology were due to congestive heart failure. Of these, 26 (15.87%) cases were caused by alcoholic liver disease with portal hypertension, 6 (4.10%) cases by other chronic liver disease causes with portal hypertension, 2 (1.75%) cases by noncirrhotic portal fibrosis, 2 (1.75%) cases by right heart failure, 2 (1.75%) cases by Budd-Chiari syndrome, and 2 cases by chronic pancreatitis. 26 (15.7%) of 160 cases of infectious aetiology of splenomegaly were due to infectious agents, of which 9 (5.87%) were caused by malaria, 5 (3.4%) by enteric fever, 2 (1.75%) by disseminated tuberculosis, 2 (2) by HIV infection, 1 (1.16%) by subacute bacterial infective endocarditis, 1 (2) by tropical splenomegaly, and 2 (2) by leptospir Among other causes of splenomegaly, 2 cases of SLE, 2 cases of rheumatoid arthritis, and 2 cases of sarcoidosis were linked to the condition. The aetiology of splenomegaly could not be determined in 4 cases.

DISCUSSION:

In this study, the 36–45 age range had the highest percentage of cases (24.11%). The ratio of men to women was 1.3:1. The male to female ratio in a study by Varsha S et al. [3] was 1.2:1, which was similar to our findings. In the current investigation, stomach discomfort (n=48) and generalised weakness & fatigue were the most prevalent clinical symptoms identified in 77 participants. The larger frequency of haematological illness cases in this study is what caused the clinical presentation that was seen. In our analysis, pallor, which occurred in 57 cases, was the most frequent clinical finding, followed by hepatomegaly (n=44). These results were similar to those of a research by Shirish S et al [4]. In our analysis, alcoholic liver disease was the most prevalent congestive cause of splenomegaly, which was consistent to research by Varsha S et al [3]. In a study by Shirish S et al.4 hepatic cirrhosis was shown to be the most frequent congestive cause, while in a study by J Balaji et al. [6] NCPF was found to be the most frequent congestive cause of splenomegaly.

According to data from other research, moderate (4–8 cm) splenomegaly is frequently caused by cirrhosis with portal hypertension [8]. The most frequent infectious causes of splenomegaly were malaria infection and enteric fever, which were comparable to all previous investigations. According to certain studies on dengue fever, splenomegaly can range from 8.2% to 60.0% [9, 10]. Splenomegaly was detected in 59 instances (69.4%) of 85 AIDS cases in one research [11]. In the current investigation, some instances have several possible causes, such as alcoholic liver disease that results in liver cirrhosis and portal hypertension and is linked to hepatitis B or C infection. These were categorised as congestive causes for statistical purposes. Despite being done on youngsters, a research by Konan et al [2] demonstrates a complex etiology. Only haematological disorders (26.3% of instances of grade III splenomegaly) were to blame (neoplastic). According to Hacket's grading, 15 of the 92 haematological cases fall into grade I, while 24 cases fall into grade II, 44 cases go into grade III, and just 6 instances fall into grade IV. Congestive causes came next in the series, with 18 instances having grade I aetiology and 12 cases having grade II aetiology. 15 cases of infectious causes had grade I aetiologies, whereas 6 cases had grade II aetiologies. Four cases of grade II splenomegaly and one case of grade III splenomegaly were linked to additional causes, such as autoimmune diseases like SLE and sarcoidosis.

CONCLUSION:

According to the findings of the current study, splenomegaly in a person with symptoms needs to be appropriately assessed. In our analysis, haematological causes of splenomegaly outnumbered nonhematological causes of splenomegaly, 54.6% to 45%. Neoplastic causes, which made up 51% of all haematological causes, were more prevalent. Among all causes of splenomegaly, chronic myeloid leukaemia (25.28%) was the most common. The most prevalent non-hematologic cause was portal hypertension. This might be caused by the region's high frequency of alcoholic liver disease (15.87%). Other haematological, congestive, and infectious reasons followed these.

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