Demographic and Clinical Profile Analysis of Acute Viral Hepatitis

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Abstract

Background: Acute viral hepatitis (AVH) is a major health concern in developing countries like Bangladesh regarding morbidity as well as mortality. Usually, acute infections are caused by A, E, hepatitis viruses, and occasionally hepatitis B virus. Infection caused by the hepatitis C virus is usually asymptomatic. Prior knowledge of the demographic and clinical profile of acute viral hepatitis may be helpful for treatment professionals in the management of such patients. Aim of the study: The aim of this study was to assess the demographic and clinical profile of acute viral hepatitis patients in Bangladesh. **Material & Methods:** This prospective observational study was conducted in the Department of Gastroenterology, US-Bangla Medical College & Hospital during the period from March 2018 to February 2019, in Bangladesh. A total of 59 suspected patients with acute viral hepatitis were included as the study subjects for this study. Ethical approval of the study had been taken from the ethical committee of the mentioned hospital. A predesigned questionnaire was used in data collection. Collected data analyzed by using MS Office and SPSS version 23.0 programs as per need. A P-value, of <0.05 was considered significant. **Results:** Among 59 participants, the male-female ratio was 3.2:1 and the mean (±SD) age was 23.88±14.83 years. Analyzing hepatitis infection, we found hepatitis E was the highest in number 32(54.24%), followed by hepatitis E virus 20(33.9%), and hepatitis B virus 5(8.47%). In this study, we did not find any patients with hepatitis C virus, and 2 participants didn't have any hepatotropic virus. The mean (±SD) Serum bilirubin (mg/dl) was 6.35±1.63, and the mean (±SD) serum alkaline phosphatase (IU/L), serum. creatinine (mg/dl), serum albumin (gm/dl) and plasma glucose random (mg/dl) were found 366.81±257.20, 6.97±14.96, 19.75±22.98 and 10.08±5.49 respectively. Considering dual viruses among the total of 5 patients along with hepatitis E & A viruses in this study, we found all were hepatitis B viruses. Among them, 3 with hepatitis E and the rest 2 were with hepatitis A virus consequently. Among them 3(60%) with hepatitis A and the rest 2(40%) with hepatitis E. In the issue of patients attended with clinical complaints, vomiting was the highest among hepatitis A patients 19(86.4%) followed by jaundice 8(36.4%) and fever8(36.4%). On the other hand, among hepatitis E patients' jaundice was highest at 19(61.3%) followed by vomiting at 17(54.8%), and fever at 6(19.4%) respectively. **Conclusions:** The incidence of HEV is found as the most predominant among all the acute viral hepatitis patients and vomiting and jaundice were the most common presenting complaints.

INTRODUCTION

Acute viral hepatitis (AVH) is a major health concern in developing countries like Bangladesh regarding morbidity as well as mortality. Prior knowledge of the demographic and clinical profile of acute viral hepatitis may be helpful for treatment professionals in the management of such patients. In a study viral hepatitis was defined as an epidemic in many developing countries.[1] It was also noted as a common disease for endemic forms in other studies.[2,3] Due to their shared mode of transmission, co-infection with Hepatitis A, B, and C virus is quite frequent.[4] In the adult population, the Hepatitis-E virus is the most common and important cause of acute clinical hepatitis, as reported in another study.[5] There is an increased incidence of HAV infection among the adult and adolescent population comparing children in India.[6] Hepatitis B and hepatitis C are considered major global health problems.[7] It can cause chronic infection which may progress to cirrhosis or to hepatic decompensation and even to hepatocellular carcinoma.[8] Hepatitis B virus is one of the most common and leading causes of hepatobiliary disorders, and end-stage liver diseases also.[9] The virus-associated diseases are reported all across the world but the prevalence of it seems to be on the higher side, particularly in Southeast Asia, Amazon Basin, and sub-Saharan Africa.[10] A national symposium on "Hepatitis B infection in India" reported a carrier rate of 4.7% across India only.[11] Most alarming is, that many studies are available on the prevalence of hepatitis B infections both in adult as well as pediatric populations.[12]

Objective

The general objective of this study was to assess the demographic and clinical profile of acute viral hepatitis patients in Bangladesh.

MATERIAL AND METHODS

This prospective observational study was conducted in the Department of Gastroenterology, US-Bangla Medical College & Hospital during the period from March 2018 to February 2019, in Bangladesh. A total of 59 suspected patients with acute viral hepatitis were included as the study subjects for this study. Ethical approval of the study had been taken from the ethical committee of the mentioned hospital. As per the inclusion criteria of this study, patients either male or female from several age groups with acute viral hepatitis confirmed with the diagnosis were recruited as the study population. On the other hand, as per the exclusion criteria, patients unwilling to participate or with a critical situation having the possibility to be referred to another hospital were excluded. Besides this, patients with underlying chronic liver disease, USG suggestive of cirrhosis of liver negative serological test, cases with drug-induced hepatitis, cholestatic hepatitis of pregnancy and alcoholic hepatitis as well as patients with hepatitis due to metabolic disease and/or sepsis-induced multiorgan failure were exceeded. With the discrete onset of clinical symptoms like fever, headache, nausea, vomiting, malaise, loss of appetite, abdominal pain, and dark urine with jaundice or serum (ALT) levels >200 IU/L or at least twice the upper limit of normal, acute hepatitis was defined as an acute illness.[13] Complete medical history and all relevant clinical

information were collected for each of the patients. Drug history was collected to rule out drug induced liver injuries. A predesigned questionnaire was used in data collection.

Collected data analyzed by using MS Office and SPSS version 23 programs as per need. A P-value, of <0.05 was considered significant.

RESULTS

Table 1: Demographic status of patients(N=59).

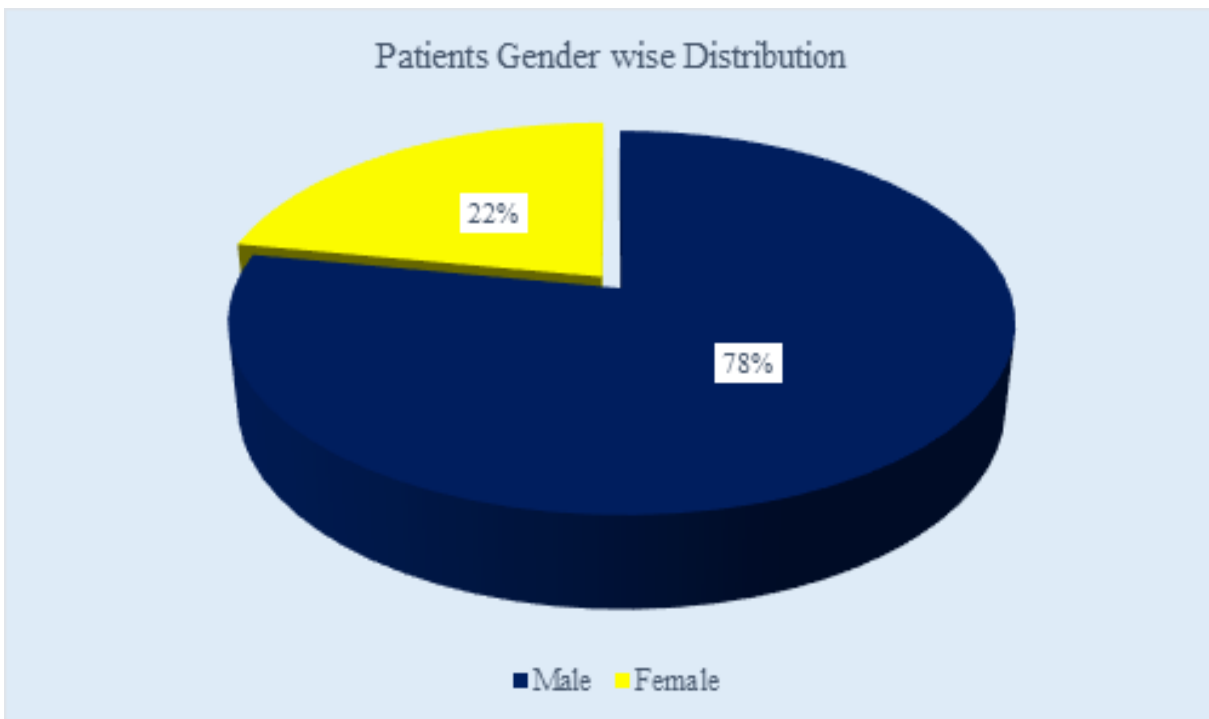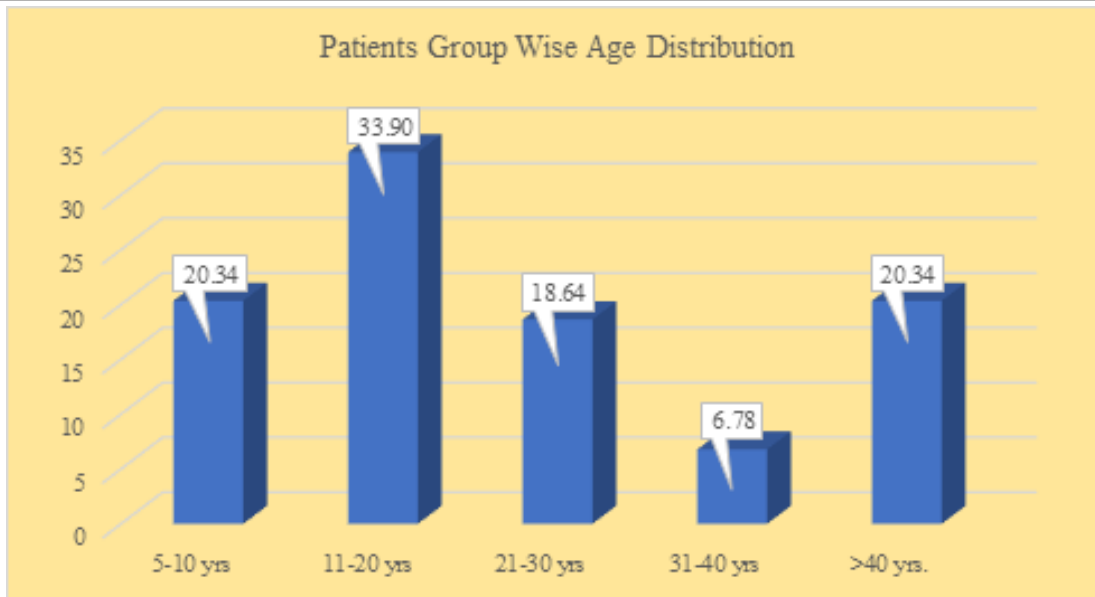| Variables	n	%
Gender distribution		
Male	46	77.97%
Female	13	22.03%
Age distribution		
5-10 yrs.	12	20.34%
11-20 yrs.	20	33.90%
21-30 yrs.	11	18.64%
31-40 yrs.	4	6.78%
>40 yrs.	12	20.34%
Mean ±SD age (Yrs.)	23.88±14.83	

Figure 1: Patients Gender Wise Distribution (N=59)

Figure 2: Patients Age Wise Distribution (N=59)

Table 2: Types of Hepatitis infections among Patients (N=59)

Parameters	n	(%)
Hepatitis E virus	32	54.24
Hepatitis A virus	20	33.9
Hepatitis B virus	5	8.47
Hepatitis C virus	0	0.0
No virus	2	3.39

Table 3: Hematological status of Patients(N=59)

Parameters	Mean ± SD
Serum bilirubin (mg/dl)	6.35±1.63
S.GPT ALT (U/L)	977.90±827.40
S.GOT AST (U/L)	894.50±356.20
Serum alkaline phosphatase (IU/L)	366.81±257.20
Serum creatinine (mg/dl)	6.97±14.96
Serum albumin (gm/dl)	19.75±22.98
Plasma glucose random (mg/dl)	10.08±5.49

Table 4: Dual virus distribution of patients (n=5)

Characteristics	Hepatitis A n (%)	Hepatitis E n (%)	Total n (%)	P value
Hepatitis A with B	3(60.0%)	-	3(60.0%)	0.001s
Hepatitis E with B	-	2(40.0%)	2(40.0%)	

Table 5: Patients attend with the Complaints (N=59)

Complaints	Hepatitis A n (%)	Hepatitis E n (%)	Total n (%)
Vomiting	19(86.4%)	17(54.8%)	36(67.9%)
Jaundice	8(36.4%)	19(61.3%)	27(50.9%)
Fever	8(36.4%)	6(19.4%)	14(26.4%)
Itchy	4(18.2%)	5(16.1%)	9(17.0%)
Upper Abdominal Pain	2(9.1%	6(19.4%)	8(15.1%)
Loose stool	3(13.6%)	1(3.2%)	4(7.5%)
Low abdominal pain	1(4.5%)	3(9.7%)	4(7.5%)
Cough	1(4.5%)	1(3.2%)	2(3.8%)
Oral ulcer	0(0.0%)	1(3.2%)	1(1.9%)
High color urine	1(4.5%)	0(0.0%)	1(1.9%)
Painful urination (dysuria)	0(0.0%)	1(3.2%)	1(1.9%)
Constipation	0(0.0%)	1(3.2%)	1(1.9%)
Periumbilical Pain	0(0.0%)	1(3.2%)	1(1.9%)
Loss of Appetite	1(4.5%)	0(0.0%)	1(1.9%)

In this study, among a total of 59 participants, 46(77.97% were male whereas the rest 13(22.03%) were female. So male participants were dominated in number and the male-female ratio was 3.5:1. About one-third (35%) of participants were from the 11-20 years age group and the mean (±SD) age of the patients was 24.10±14.56 years. Analyzing hepatitis infection, we found hepatitis E was the highest in number 32(54.24%), followed by hepatitis E virus 20(33.9%), and hepatitis B virus 5(8.47%). In this study, we did not find any patients with hepatitis C virus, and 2 participants didn't have any hepatitis virus symptoms. The mean (±SD) Serum bilirubin (mg/dl) was 6.35±1.63, and the mean (±SD) serum alkaline phosphatase (IU/L), serum. creatinine (mg/dl), serum albumin (gm/dl) and plasma glucose random (mg/dl) were found 366.81±257.20, 6.97±14.96, 19.75±22.98 and 10.08±5.49 respectively. Considering dual viruses among the total of 5 patients along with hepatitis E & A viruses in this study, we found all were hepatitis B viruses. Among them, 3 with hepatitis E and the rest 2 were with hepatitis A virus consequently. Among them 3(60%) with hepatitis A and the rest 2(40%) with hepatitis E. In the issue of patients attended with clinical compliances, vomiting was the highest among hepatitis A patients 19(86.4%) followed by jaundice 8(36.4%) and fever8(36.4%). On the other hand, among hepatitis E patients' jaundice was highest at 19(61.3%) followed by vomiting at 17(54.8%), and fever at 6(19.4%) respectively.

DISCUSSION

In this study, among a total of 59patients, 76% were male whereas the rest 24% were female. So male participants were dominated in number and the male-female ratio was 3.2:1. About one-third (35%) of participants were from the 11-20 years age group and the mean (±SD) age of the participants was 24.10±14.56 years. Similarly, in other studies, it was found, that the maximum number of patients were young adults,[14,15] and male patients were affected slightly more than

females. Analyzing hepatitis infection, we found hepatitis E was the highest in number 32(54.24%), followed by hepatitis E virus 20(33.9%), and hepatitis B virus 5(8.47%). This is the same as our study findings, it was found that hepatitis E was the most common cause of anti-HEV IgM. accounting for up to 50% of patients in their setting.[16] In this study, we did not find any patients with hepatitis C virus, and 2 participants didn't have any hepatotropic virus. In another study, among 70 AVH patients, the majority were hepatitis E (70%), followed by hepatitis B in 15.8%, hepatitis A in 12.8%, and hepatitis C in 1.4%.[7] In analyzing the hematological status of participants, we observed, that the mean (±SD) total Serum bilirubin (mg/dl), SGPT ALT (U/L), and SGOT AST (U/L) of the participants were 6.35±1.63, 977.90±827.40, and 894.50±356.20 respectively. On the other hand, the mean (±SD) serum alkaline phosphatase (IU/L), serum creatinine (mg/dl), serum albumin (gm/dl), and plasma glucose random (mg/dl) were found 366.81±257.20, 6.97±14.96, 19.75±22.98 and 10.08±5.49 respectively. In another study, total Serum bilirubin (mg/dl) was raised in all cases and SGPT was raised up to 98.5% of patients where raised SGOT was found in all cases of hepatitis A and E.[7] Considering dual viruses among the total of 5 patients in this study we found all were hepatitis B viruses. Among them,

3 with hepatitis E and the rest 2 were with hepatitis A virus consequently. In the issue of patients attended with clinical compliances, vomiting was the highest among hepatitis A patients 19(86.4%) followed by jaundice 8(36.4%) and fever8(36.4%). On the other hand, among hepatitis E patients' jaundice was highest at 19(61.3%) followed by vomiting at 17(54.8%), and fever at 6(19.4%) respectively.

Limitations of the study:

Though it was a single-centered study with a small-sized sample, so the findings of this study may not reflect the exact scenario of the whole country.

CONCLUSIONS

The incidence of the hepatitis E virus was found as the most predominant among all the acute viral hepatitis patients. Vomiting and Jaundice were the common presenting complaint. So, hematological as well as biochemical assessments may be considered the most prominent indicators for detecting the diseases and the severity of the diseases like acute viral hepatitis. For getting more specific findings we would like to recommend conducting similar studies with larger-sized samples in several places.

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Source of Support: Nil, Conflict of Interest: None declared