

# Prevalence of Acute Viral Hepatitis in Southern Part of Bangladesh

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## **ABSTRACT:**

**Background:** Viral hepatitis is the most common cause of acute hepatitis. Viral hepatitis is caused by infection with any of at least five distinct viruses. Out of them, the three most commonly identified viruses in developing countries are Hepatitis A Virus (HAV), hepatitis B virus (HBV) and hepatitis E virus (HEV). Hepatitis A Virus and hepatitis E virus spread by faeco-oral route which are endemic in those area where sanitation is poor. Hepatitis B virus spreads by parenteral, sexual and vertical transmission.

**Materials and methods:** This is a prospective study conducted in Medicine unit -II of Sher-e-Bangla Medical College Hospital, Barishal, Bangladesh over a period of six months (January '18 to June '18) among the patients of Acute Viral Hepatitis to find out the underlying aetiology, to see the patterns of presentation and risk factors.

**Result:** Male (76.7%) and younger age group <30yrs (73.3%) constituted the bulk of the cases. Majority of the cases (81 %) came from low socioeconomic condition. Out of 120 patients of Acute Viral Hepatitis, 70% are caused by HEV, 23.3% by HBV and 6.7% by HAV.

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## **INTRODUCTION:**

Viral hepatitis is the most common cause of acute hepatitis. Viral hepatitis is caused by infection with any of at least five distinct viruses. Out of them, the three most commonly identified viruses in developing countries are Hepatitis A Virus (HAV), hepatitis B virus (HBV) and hepatitis E virus (HEV). All forms of viral hepatitis have a basic pathology<sup>1</sup>. The essential lesion is an acute inflammation of liver. All three common viruses can produce an acute

illness characterized by nausea, malaise, abdominal discomfort and jaundice.

## **Hepatitis A**

Hepatitis A is caused by a Picorna virus. Hepatitis A virus is transmitted via the faeco-oral route, generally close personal contact or contaminated food or water [2]. Infectivity of stool persists from 21 days before to 8 days after the onset of jaundice<sup>3</sup>. Most recover with lifelong immunity, but a very small proportion develop acute liver failure. There is vaccine against HAV<sup>4</sup>.

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## Hepatitis B

Hepatitis B is caused by a Hepadna virus, which can cause both acute and chronic hepatitis. The methods of transmission include blood transfusion, through tattoo and acupuncture needle, sexual (both homo and heterosexual), IV drug abusers, vertical transmission from HBsAg positive mother to child. Chronic hepatitis develops in 10% to 15% of patients. There is vaccine against HBV.

## Hepatitis E

This accounts for sporadic and major epidemics of viral hepatitis in developing countries<sup>5</sup>. Hepatitis E produces symptoms similar to Hepatitis A, although it can take a fulminate course in some patients, particularly pregnant women. It is transmitted via faeco-oral route. It affects young adults and rare in children. In most cases it presents as a self-limiting acute hepatitis and does not cause chronic liver disease. There is no vaccine against HEV.

### MATERIALS AND METHODS:

This is a prospective study conducted in Medicine unit -II of Sher-e-Bangla Medical College Hospital, Barishal, Bangladesh from January '18 to June '18 including all admitted patients of both sexes and any age with Acute Viral Hepatitis.

### Case definition of Acute Viral Hepatitis

#### Clinical case definition:

- Acute hepatitis is defined as acute illness with discrete onset of symptoms

(nausea, anorexia, fever, malaise or abdominal pain and jaundice.)

### Laboratory criteria for diagnosis of hepatitis:

- For evidence of acute hepatitis:
  - a. Serum Bilirubin: elevated
  - b. Serum aminotransferase (ALT) level: elevated
- For confirming the type of Viral Hepatitis:

#### Hepatitis A:

Immunoglobulin M (IgM) antibody to hepatitis A virus (Anti HAV) positive

#### Hepatitis B:

Hepatitis B surface antigen (HBsAg) positive  
Or

IgM antibody to hepatitis B core antigen (Anti HBc) positive

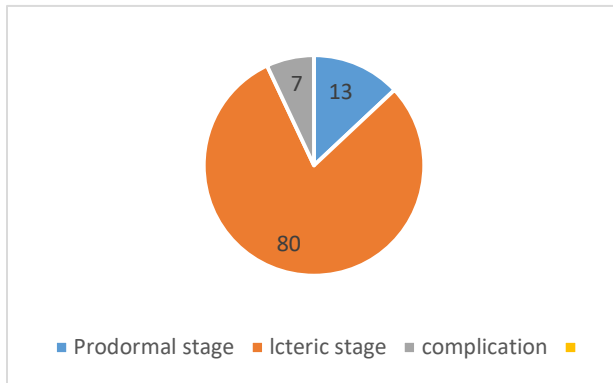
#### Hepatitis E

Immunoglobulin M (IgM) antibody to hepatitis E virus (anti HEV) positive

### RESULTS:

This study includes 120 indoor patients of Medicine unit-II of SBMCH, Barishal, Bangladesh over a period of 6 month. Diagnosis was confirmed by serological test. In this study, 92 patients (76.7%) were male and 28 patients (23.3%) were female. 30% patients were 11 to 20 yrs. of age group; 43.3% were 21 to 30 yrs. of age group; 13.3% were 31-40 yrs. of age group; 6.7%

were 41-50 yrs. of age group and 6.7% were 51yrs and above (Table-1).



**Table-1: Age distribution of the Patients**

Age (yrs.)	No. of Cases	Percentage (%)
11-20	36	30
21-30	52	43.3
31-40	16	13.3
41-50	8	6.7
51-	8	6.7

Among the 120 cases, 84 patients (70%) were IgM anti HEV positive, 28 patients (23.3%) were HBsAg positive and 8 patients (6.7%) were IgM anti HAV positive (Table-2).

**Table 2: Distribution of Patients according to cause of hepatitis**

No. of Patients	Viral marker <sup>6</sup>	Percentage of total case
84	IgM anti HEV	70
28	HBsAg	23.3
8	IgM anti HAV	6.7

The pattern of presentation was almost similar in all types. Eight patients (13.3%) presented in prodromal stage, 96 patients (80%) presented in icteric stage and 8 patients (6.7%) presented with complication that is with acute hepatic failure.

**Fig. 1 Clinical presentation**

To search the risk factor, it is identified that poor sanitation and unsafe water drinking (unhealthy hygiene) play the major role (86%). Four patients (3.3%) gave the history of blood transfusion, No history of needle sharing or IV drug abuser. 12 patients (10%) gave the history of extramarital sexual exposure. Among the 120 cases, 4 patients were pregnant with hepatitis E and they improved. 4 patients were vaccinated for hepatitis B (they had hepatitis E). Out of 120 cases, 4 patients (3.3%) died who had HBsAg positive and presentation was acute hepatic failure.

**DISCUSSION:**

Acute viral hepatitis is one of the common diseases that we face in our daily practice. Among the 120 cases of viral hepatitis of our study, 84 cases (70%) were hepatitis E, 28 cases (23.3%) were hepatitis B and 8 cases (6.7%) were hepatitis A. A study carried out at the All India Institute of Medical Sciences, New Delhi between January 1997 to May 1998 among pregnant women presenting with signs and symptoms suggestive of acute hepatitis showed, out of 60 patients 28 patients have acute viral hepatitis, and 32 patients had no positive viral marker. Among 28 patients, 22 patients (78.6%) were hepatitis E and 8 patients (21.4%)

were hepatitis B and no hepatitis A was reported<sup>7</sup>.

Though the study was carried out among the pregnant women but the result of our study corresponds with their result.

Acute viral hepatitis caused by faeco-oral route of transmission is a major public health problem in developing countries with poor sanitary condition<sup>8</sup>. In our study, younger age group (73.3%) were below 30 yrs. of age and faeco-oral route is suspected as major risk factor for acute hepatitis. Hepatitis A and hepatitis E can be prevented through pure drinking water, use of sanitary latrine and healthy personal hygiene<sup>9</sup>. Though there is no vaccine for hepatitis E, vaccine for hepatitis A is available that will prevent infection from hepatitis A. In Catalonia (Spain), the overall incidence of hepatitis A has gone from 6.2 per 100000 persons (1996 -1998) to 2.6 per 100000 persons (1991-2001) following the introduction of routine vaccination<sup>10</sup>.

In our study, we have got history of blood transfusion of four persons and extramarital sexual relation of 12 persons, these may be the source for hepatitis B infection. Hepatitis B infection is said to have the highest mortality. In a survey of 1675 cases in a group of Boston hospital showed that the highest mortality among the Hepatitis B and Hepatitis C (mainly from transfusion Hepatitis). In our study, four patients died who had Hepatitis B; so Hepatitis B should be prevented through blood screening during blood transfusion, proper education, safe sexual relation and vaccination. Hepatitis B vaccine is also effective in

preventing Hepatitis B in high risk group like sexual worker and homosexual men<sup>11</sup>. A 12 yrs. follow up of infants vaccinated in Senegal showed that 81%, who received a booster at school age had anti HBs<sup>12</sup>. The protective efficacy of the vaccine was 88%. In our study, only 4 persons had the history of vaccination against Hepatitis B but it is a hope for us that Hepatitis B vaccination is now included in EPI schedule.

### **CONCLUSION:**

Hepatitis E is the major cause of Acute Viral Hepatitis among the adult and in developing countries like Bangladesh. There is a great opportunity to do work in this field and through strict personal hygiene and social awareness can decrease the number of incidence .Government should come forward in this perspective. There is a scope for scientists and researchers to work for invention of vaccine against hepatitis E.

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