

# Frequency of Hepatitis E (HEV) Patients in Medical Unit-I of A Tertiary Care Teaching Hospital Lahore

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## ABSTRACT

**Objectives:** To identify the viral aetiology in acute hepatitis patients presented in medical unit, Social Security Hospital, Lahore, to determine the association of acute hepatitis due to HEV with pregnancy in female patients and to determine the course of hospital stay in HEV patients.

**Methodology:** All those patients who were admitted in the medical unit-I from January 2011 to December 2011 were included in this study. The diagnosis was established with ALT more than ten times (400 iu/ml) of the normal range. To confirm the viral aetiology of acute hepatitis the ELISA technique was used to find HCV-IgM, HBV-IgM, HAV-IgM and for HEV-IgM. In female patients proper history was taken for recent pregnancy/ abortion and was confirmed with pregnancy test, obstetric ultrasound and with consultation of a gynaecologist.

**Results:** Total 113 patients with acute hepatitis were admitted during the study period. Among these patients definitive viral aetiology was identified in 61 patients. Out of these 61 patients 27 were due to HEV, 7 due to HBV, 13 due to HAV and 14 due to HCV. Out of the 27 HEV patients 22 were male and 5 female. No history of preceding pregnancy/abortion was identified in all female patients.

**Conclusion:** Acute hepatitis due to HEV is more common than HAV in labour class presented at NSSSH. Recovery in HEV infected acute hepatitis patients is almost the same as in other viral aetiologies.

**Key words:** HCV (hepatitis C virus), HBV (hepatitis B virus), HAV (hepatitis A virus),.

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## INTRODUCTION

Acute viral hepatitis is a serious infection characterized by inflammation of liver parenchyma and hepatocellular necrosis. It can be caused by hepatitis A, B, C, D and E viruses.<sup>1</sup> Other viruses which can also cause acute hepatitis include Cytomegalovirus (CMV), Epstein Bar Virus (EBV), Herpes simplex virus (HSV), Yellow fever and Adeno viruses<sup>2</sup>. Hepatitis E virus is responsible for majority of sporadic and epidemic cases of acute viral hepatitis in developing countries.<sup>3</sup> With the availability of methods of detection of markers of hepatitis A and E in Nawaz Sharif Social Security Hospital we decided to study the frequency of HEV infection among patients with acute hepatitis admitted in medical unit-I.

## PATIENTS AND METHODS

This was a hospital based study conducted from January 2011 to December 2011 in Medical Unit-I, Nawaz Sharif Social Security Hospital Multan Road Lahore. This is a tertiary care teaching hospital providing health services to the labour class working in the different industries of Punjab province. This hospital received patients being referred from

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different secondary / primary health centres working under the chain of Social Security Department Punjab. The patients were selected randomly from OPD and emergency department of this hospital who presented with Jaundice. Criteria for admission was decided as short history with acute presentation and liver enzymes more than ten times raised at the time of admission. The patients who were admitted in the ward were investigated later on to confirm the aetiological cause. The HCV, HBV, HAV and HEV serology was done with third generation ELISA technique. The patients who were diagnosed as HEV infected were further followed up on daily basis with LFTs to see the prognosis and course of disease. The female patients with HEV infection were under gone pregnancy test and obstetric ultrasound along with consultation from gynaecologist to rule out pregnancy or recent abortion to establish any association of HEV with pregnancy. Information on patients included age, gender, nationality and history of travel. The patients were questioned regarding past medical history of jaundice, operations, blood transfusions, medications, intravenous drug abuse, alcohol ingestion and recent travel abroad. Patients with history of chronic hepatitis B and C and immunodeficiency status (like HIV / immunosuppressive therapy) were excluded from the study. The patients were treated according to current guide lines<sup>3</sup> for the management of acute viral hepatitis and it was mainly supportive. Data was analyzed by

SPSS version 12, p value of <.05 was taken as significant for difference in all statistical analysis

## RESULTS

During the study period total 113 patients were admitted in medical unit-I of Nawaz Sharif Social Security Teaching Hospital Multan Road Lahore. Among the 113 patients 71 were male patients and 42 female patients. The average age in male patients were 37 years and 33 years in female patients. The Viral aetiology was identified in 61 patients while no cause was found in 42 patients. Among the 61 patients 27 were HEV positive, 7 HBV positive, 14 HAV positive and 13 HCV positive. Among HEV positive patients 22 were male and 5 female patients with mean age in male patients were 34 and 32 in female patients.. Out of 7 HBV positive patients 5 were male with mean age 39 years and two female with mean age was 36 years. Out of 14 HAV patients 10 were male and 4 female patients with mean age 31 in both male and female patients. Out of 13 HCV patients 8 were male and 5 female patients. Mean age in HCV patients were 29 years. All the patients shared the common symptoms of nausea, vomiting, high grade fever, anorexia, aches and pain with fatigue-ability and jaundice. Tender hepatomegaly was noticed over all in 47 patients. Values of ALT, AST, Billirubin, PT, INR, WBC, Platelet count, and Hb are shown in the table 1.

Table 1: Clinical parameters (comparison).

Parameters	HCV	HBV	HAV	HEV
ALT (average)	713	677	846	1017
AST (average)	642	513	577	863
Billirubin(average)	8.5	8.9	10.8	14.9
PT (average)	3 sec	Normal	3	4
INR (average)	1.25	1	1.25	1.3
WBCs (average)	8000	7700	6300	7900
Platelet count (average)	279,000	312,000	255,000	270,000
Hb (average)	12	12.2	11.6	11.9
Amonia level	Normal	Normal	Normal	Raised in 2 pts

Table 2. Average hospital stay and complications.

Parameters	HCV	HBV	HAV	HEV
Hosp. stay (Average)	6	6	5	7
complications	Nil	Nil	Nil	2 pts need management for Sub fulminant hepatic failure

Comparison of average hospital stay in these patients is also shown in table 2. Average hospital stay was slightly prolonged in patients with HEV because of the two patients who developed sub fulminant hepatic failure and stayed in the hospital for three weeks each otherwise the hospital stay and

course of disease in HEV patients and the rest of the patients was almost same. No Association between Acute hepatitis due to HEV and pregnancy was identified.

## DISCUSSION

Many studies conducted in Pakistan and outside Pakistan showing HEV as the major cause of outbreaks especially in slum areas of the developing countries. HEV spreads via person to person via faecal oral route<sup>4</sup>. The common cause of this spread of HEV is due to the poor quality, later on and rotten eatable items freely accessible by flies, mosquitoes and other flying and crawling insects that are responsible for the spread of HEV from human excreta to eatable items<sup>5,7</sup>. Akbul A et al<sup>6</sup> have reported that HEV usually affects young and middle aged individuals but rarely children and old people, in this study we had the same observation and mean age of our patients was 34 years in male and 32 years in female. In this study more than 44% of acute hepatitis were caused by hepatitis E (HEV) which is similar to earlier studies while some investigators have reported more than 50% of acute hepatitis being caused by HEV<sup>2</sup>. Ghabrah reported a seroprevalence up to 60% in Egypt<sup>5</sup> while Lau JY reported 1.5% in Europe<sup>12</sup>. The acute hepatitis due to HEV usually affects adults while HAV affects younger age group. Acute Hepatitis due to HEV is a mild self limiting disease in majority of the patients except in a few cases where it may lead to fulminant hepatic failure.

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