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Research Article

**PREVALENCE AND ETIOLOGY OF HEPATITIS E (HEV)
INFECTION AMONG PATIENTS ADMITTED IN MEDICINE
DEPARTMENT****¹Dr. Tayyaba Malik, ²Dr. Sohail Iqbal, ³Dr. Rida Muhammad Ashraf**¹Islamabad Medical and Dental College, Islamabad²(ELAM) Latin American School of Medicine, Cuba³Fatima Jinnah Medical, College, Lahore**Abstract:**

Purpose: To Know the viral causes of patients with acute hepatitis E in medical unit and evaluates hospital stay in HEV patients.

Study Design: Hospital based an Observational Study.

Place and Duration: In Medical Unit I of Services Hospital Lahore for one year period from July 2017 to July 2018.

Methodology: Diagnosis was established with ALT more than ten times the normal range (400 uu / ml). Acute hepatitis was labeled and its etiology was established for HCV-IgM and HEV-IgM, HAV-IgM, HBV-IgM by ELISA technique. In female patients, appropriate pregnancy history / abortion were obtained and pregnancy test with a gynecologist confirmed with prenatal ultrasound and consultation.

Results: 113 patients with acute hepatitis were examined during the study. Of these, 61 patients had definite viral etiology. Of these 61 patients, 27 were HEV, 7 were HBV, 13 were HAV and 14 were HCV. Of 27 patients with HEV, 22 were male and 5 were female. There was no history of pregnancy or previous abortion in all female patients.

Conclusion: HEV-induced acute hepatitis is more common than HAV in labours. Improvement in patients with acute hepatitis infected with HEV is almost the same as in other viral etiologies.

Key words: HBV, hepatitis C virus, hepatitis A virus.

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INTRODUCTION:

Acute viral hepatitis is a serious infection determined by hepatocellular necrosis and hepatic parenchyma inflammation. Hepatitis can be caused by A, B, C, D and E viruses. Other viruses that can cause acute hepatitis include Epstein's bar virus (EBV), cytomegalovirus (CMV), yellow fever, adeno virus and herpes simplex virus (VHS). Hepatitis E virus is responsible for epidemic hepatitis and sporadic acute viral cases in developing countries. We decided to investigate the incidence of HEV infection in patients with acute hepatitis who applied to medical unit I with the detection methods of hepatitis A and E markers.

PATIENTS AND METHODS:

This is a hospital based study conducted at a hospital in Medical Unit I of Services Hospital Lahore for one year period from July 2017 to July 2018. It is a tertiary education hospital that provides health services to the working class working in the different industries of Punjab province. This hospital received patients from different primary / secondary care centers working in the Punjab Social Security Department chain. The patients were randomly selected from the emergency department of this hospital. Admission criteria, acute presentation and liver enzymes were determined as a short history with more than ten-fold increase at admission. The patients who were hospitalized were later investigated to confirm the etiological cause. HCV, HBV, HAV and HEV serology were performed by third generation ELISA technique. The patients diagnosed with HEV were followed up with LFT to see the prognosis and the course of the disease. Obstetric ultrasound was performed together with the

gynecologist to determine pregnancy or recent abortion to establish a relationship with HEV in women with HEV infection and pregnancy. Information about patients includes gender, age, travel history and nationality was recorded. Patients were questioned about jaundice, operation, blood transfusions, drugs, intravenous drugs abroad, alcohol intake, recent medical history of abuse. Patients with a history of chronic B and C hepatitis and with Low immunity due to HIV / immunosuppressive therapy were not included for analysis. According to the current guidelines, Patients were treated for acute viral hepatitis and were mostly supportive. The data were analyzed with SPSS version 12 and $p < 0.05$ was measured significantly for the difference in all statistical analyzes.

RESULTS:

During the study, a total of 113 patients were admitted to the medical unit. Of the 113 patients, 71 were men and 42 were women. The mean age of the male cases was 37 years and the females were 33 years. Viral etiology was detected in 61 patients and no cause was found in 42 patients. Of 61 patients, 27 were HEV, 7 were HBV, 14 were HAV and 13 were positive for HCV. Among the patients with positive HEV, 22 were male, 5 were male, 34 were female and 32 were female. Of 7 patients with HBV, 5 had a median age of 39 years and a average age of 36 years. Of the 14 OAB patients, 10 were male and 4 females, with a average age of 31 years. Of 13 patients with HCV, 8 were male and 5 were female. The mean age of patients with HCV was 29 years. All patients shared nausea, vomiting, high-grade fever, anorexia, pain and pain, and common symptoms such as fatigue and jaundice.

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

Sensitive hepatomegaly was observed in all 47 patients. ALT, AST, Billirubin, PT, INR, WBC, platelet count and Hb values are shown in Table 1. A comparison of the mean hospitalization in these patients is shown in Table 2.

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

The average length of hospital stay in HEV patients was prolonged, because two patients with lower fulminant hepatic insufficiency and three weeks of hospitalization were hospitalized.

The course of the disease and the rest of the patients were almost the same in HEV patients. There was no relationship between HEV and acute hepatitis due to pregnancy.

DISCUSSION:

Many studies conducted in Pakistan and outside Pakistan show that HEV is one of the leading causes of outbreaks in shanty areas, especially in developing countries. HEV is transmitted from person to person by fecal oral route. The widespread cause of this dissemination of HEV is due to poor quality and later edible and freely accessible edible elements of flies, mosquitoes and other flying and creeping insects responsible for the spread of HEV from human faeces edible elements. Akbul A et al. Reported that HEV usually affects young and middle-aged people, but rarely affects children and the elderly. We also received the same observation in this study and the average age of the patients was 34 in males and 32 in women. In this study, more than 44% of acute hepatitis was caused by hepatitis E (HEV), which was similar to previous studies. Some researchers reported that more than 50% of acute hepatitis was caused by HEV. Ghabrah reported a seroprevalence of up to 60% in Egypt, while Lau JY reported 1.5% in Europe. HEV-related acute hepatitis usually affects adults, while HAV affects the youngest age group. HEV-induced acute hepatitis is a mildly limiting disease in most patients, except when it may cause fulminant hepatic failure.

CONCLUSION:

HEV-induced acute hepatitis is more common than HAV in labours. Improvement in patients with acute hepatitis infected with HEV is almost the same as in other viral etiologies.

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