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## Clinical Evaluation of Hepatitis A, and E, Virus Infection In Patients of Acute Hepatitis.

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### ABSTRACT

A study of 84 cases of patients with Hepatitis A and E Virus has been presented with special reference to epidemiological aspects. A Prospective study was conducted in patients with acute Hepatitis in Hepatitis A and E virus. The Hepatitis A virus is found majorly in Males whereas Hepatitis E virus is found more in Females. The incidence of Hepatitis A and E Virus was progressively higher with age group 21-30 years and lowest occurring in 0-10 and 61-70 years. Patients most commonly presented with hepatomegaly, malaise, yellow discoloration of eyeballs. Enterically transmitted hepatitis A and E infections is seen in throughout the world in developed as well as developing countries. Sanitation and standard of living conditions determine its incidence. The present study aimed to find out the acute hepatitis A and hepatitis E infections in patients with acute viral hepatitis.

**Keywords:** Hepatitis A and E, hepatomegaly

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## INTRODUCTION

Worldwide, viral hepatitis is a common problem, and its acute and/ or chronic consequences produce substantial morbidity and mortality in both developed and developing countries.<sup>1</sup> Enterically transmitted hepatitis A and E viruses are a major cause of epidemic and acute sporadic hepatitis in many areas of Asia, Africa and Mexico, where it is considered endemic.<sup>2</sup>

Hepatitis A virus (a picorna-virus) and Hepatitis E Virus (a calici-virus) are small, non-enveloped and relatively stable RNA viruses with many similar, yet not identical characteristics. The fecal-oral route transmits both the viruses preferentially. Consequently, their spread is favored by poor personal hygiene and inappropriate sanitary conditions. Infection can pass sub clinically, take an acute and self-limiting course, or can also manifest as fulminant hepatitis with liver failure. True chronic disease is unknown<sup>3</sup>.

Hepatitis A is one of the most common causes of infectious jaundice in the world today. Recurrent epidemics are prominent features of the disease<sup>4</sup>.

It is endemic in most developing countries, with frequent outbursts of minor or major outbreaks. The exact incidence of the disease is difficult to estimate because of the high proportion of asymptomatic cases. However, according to WHO, about 10-15 persons per 100,000 were affected annually<sup>5</sup>. Transmission of hepatitis A can occur from hospitalized patients with unsuspected disease to staff and is well recognized<sup>6</sup>.

Hepatitis A virus infects more than 80% of the population of many developing countries by late adolescence, and also is common in developed countries<sup>7</sup>

The incubation period for hepatitis A ranges from 10 to 50 days, regardless of the route of infection<sup>8</sup>

The disease is milder in children than in adults, complete recovery is the rule, and chronic disease has not been observed<sup>9</sup>. No specific therapy is available for hepatitis A and the management is mainly supportive; active immunization with hepatitis A vaccines is protective<sup>10</sup>.

Hepatitis E virus appears to be widespread problem and is prevailing globally predominantly in developing countries where environmental sanitation facilities are inadequate<sup>11</sup>

Contamination of water sources with human feces is the most common risk factor for epidemic HEV infection as for hepatitis A. As such, the major disease burden of HEV is in developing countries, with the Indian subcontinent, Egypt, and parts of China being recognized as areas of highly endemic infection<sup>12</sup>. Person-to-person infection is however uncommon and vertical transmission is rare<sup>13</sup>

In countries where the virus is endemic, HEV is associated with >50% of sporadic acute hepatitis cases<sup>14</sup>. Many large epidemics of hepatitis believed to be due to HAV have now been identified as caused by HEV. Hepatitis E infection is highly endemic in India<sup>15</sup>. Outbreaks and sporadic cases of hepatitis E have been reported and confirmed serologically in Asia including India, Africa and North and Central America. Most cases can be traced to the ingestion of contaminated water; secondary cases within the households are rare<sup>16</sup>.

The incubation period is 2 to 9 weeks<sup>17</sup>. The onset is abrupt with 100% of patients jaundiced; there are no extra-hepatic features. HEV accounts for acute liver failure in endemic regions<sup>18</sup>.

There is no specific treatment for hepatitis E and only supportive measures are required with recovery from hepatitis E is always complete<sup>19</sup>.

The hepatitis is usually mild, particularly in children where it is frequently subclinical or is passed off as gastroenteritis. The disease is more serious and prolonged in adults cases requiring hospitalization were 22% among children, younger than 5 to 52% among adults older than 60 (Centers for disease control, 2006).

Pregnant women may require special attention. Fulminant hepatitis and death are rare complications (0.3% of cases in the USA in 2006)<sup>20</sup>.

### **Aims and Objectives**

- To study the age and sex incidence acute hepatitis.
- To study the presenting symptoms and the clinical signs with acute hepatitis.

### **MATERIALS AND METHODS:**

The present study includes the study of diabetic patients admitted in the General Medicine ward of Kim's Hospital, which is a 700 bedded multi-specialty teaching hospital. With signs & symptoms of acute hepatitis A and hepatitis E infections in patients with acute viral hepatitis. November 2013 to April 2014. This formed the clinical material for the prospective study on the clinical aspects of hepatitis A & E virus patients.

### **Inclusion criteria –**

Acute hepatitis cases diagnosed on the basis of history, clinical features, and systemic examination.

### **Exclusion criteria**

- Patients presenting alcoholic cirrhosis/ chronic liver disease.
- Patients presenting with serum hepatitis due to Hepatitis B & C.
- History of intake of hepatotoxic drugs.

## RESULTS AND DISCUSSION

### Demographic Data Analysis

During the study period from November 2013 to April 2014, 90 patients with hepatitis A & E virus were admitted in the medical wards of KIMS Hospital, out of which 84 patients were chosen based on the inclusion and exclusion criteria mentioned. Following is the analysis of data of these 84 cases,

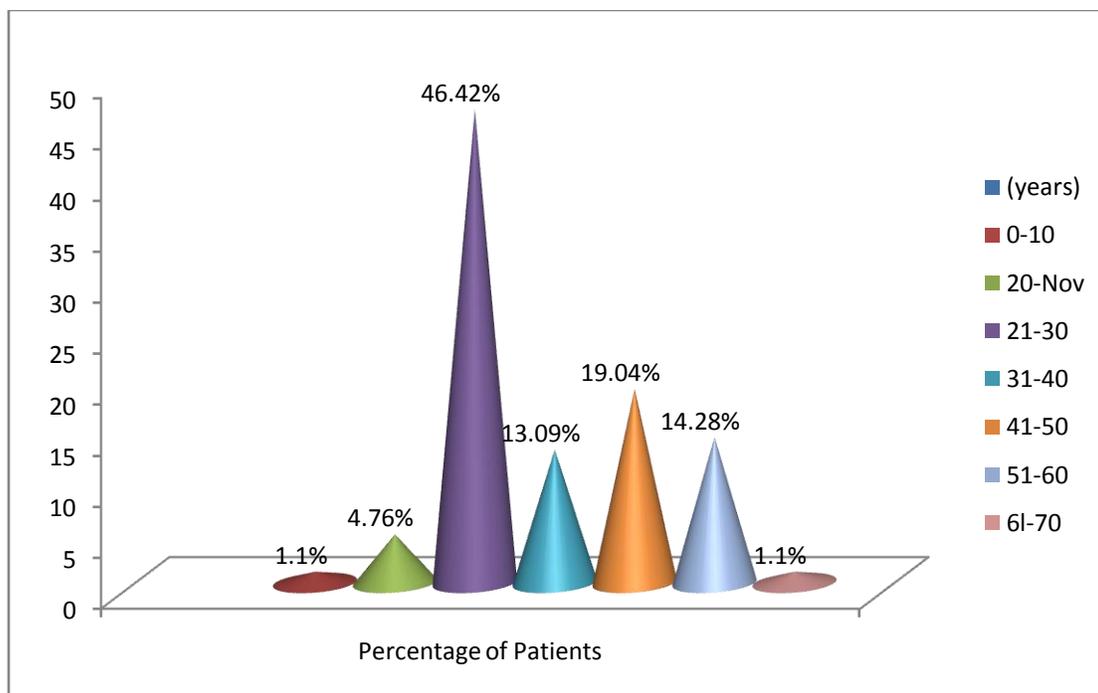
#### Age and Sex Incidence

**Table: 1 Gender – Male & Female Patients.**

Gender	No. of patients	Percentage of patients
Female	24	28.57%
Male	60	71.42%

Above table shows the distribution of study population in which the Male patients are more in number than in Females.

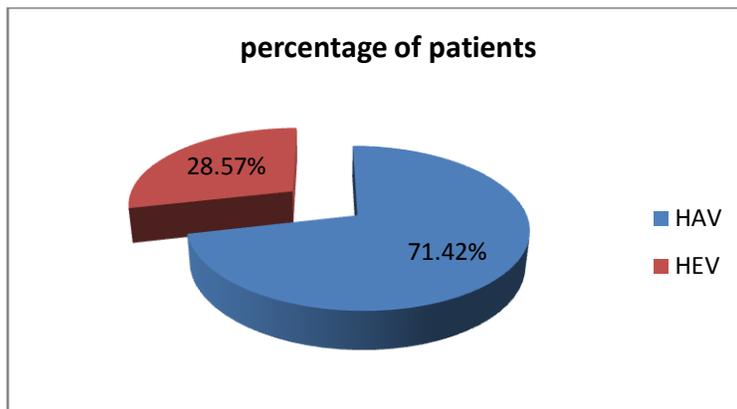
#### Age Wise Distribution of Demographic Data



**Figure: 1 Age and sex wise distribution of the hepatitis patients:**

Above chart shows the highest percentages of hepatitis virus is found in age 21-30 (46.42%) and lowest percentage of hepatitis virus is found in age 0-10 (1.1%) and 61-70 (1.1%).

#### Patients Affected With Hepatitis A and E Virus



**Figure: 2 Percentages of Patients with Hepatitis A and E Virus**

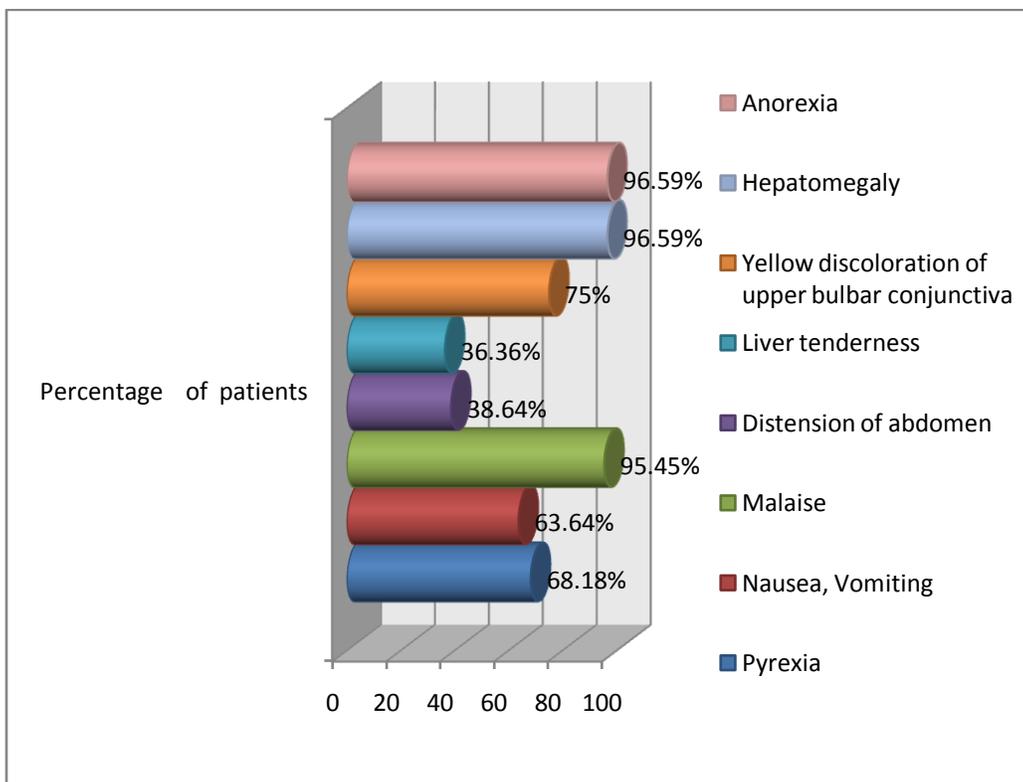
Above chart shows the Percentage of patients affected with Hepatitis A and E virus. Majority of the patients are affected with Hepatitis A virus.

**Table: 2 Male and Female Patients with Hepatitis A and E Virus**

Hepatitis Virus	Sex		Percentage of Patients
	Male	Female	
HAV	35	13	57.14%
HEV	12	24	42.85%

Above table shows that Hepatitis virus A is majorly found in males and Hepatitis E virus is majorly found in females.

**Clinical profile of the patient’s commonest symptom**



**Figure: 3 Showing the Symptoms of Hepatitis A and E Virus**

Above chart shows the clinical history of the subjective symptoms and signs in which the hepatomegaly is common.

Viral hepatitis is a growing global public health menace especially in developing countries. Globally, there are an estimated 1.4 million cases of hepatitis A every year. In 1988 that affected about 300 000 people. In developing countries with very poor sanitary conditions and hygienic practices, most children (90%) have been infected with the hepatitis A virus before the age of 10.

In developed countries with good sanitary and hygienic conditions, infection rates are low. Every year there are 20 million hepatitis E infections, over three million acute cases of hepatitis E, and 57 000 hepatitis E-related deaths. Globally, there are approximately 20 million incidents of hepatitis E infections every year. Globally, 57 000 deaths and 3.4 million cases of acute hepatitis E are attributable to infection with hepatitis E virus. Over 60% of all hepatitis E infections and 65% of all hepatitis E deaths occur in East and South Asia, where seroprevalence rates of 25% are common in some age groups. Since the earliest recorded human history, several scattered outbreaks of epidemic jaundice have been recorded. Retrospectively, many such outbreaks of epidemic jaundice were attributed to enterically transmitted hepatitis A or E viruses. Since then, the natural history and epidemiology of the disease have undergone rapid changes with the course of time. The modes of spread of these infections are similar --through faeco-oral route; co-infections with both the viruses also occur.

#### **Age and sex incidence:**

Male and Females in which Male patients are more in number 60 (71.42%) and Females are 24 (28.57%).

#### **Age wise distribution:**

The highest percentages of hepatitis cases (46.42%) were from 21-30 years age group, followed by 41-50 (19.04%) and least from 61-70 (1.1%) and 0-10 (1.1%) years age group. And age group 31-40 hepatitis cases are found to be 13.09%. age group 51-60to hepatitis cases is 14.28%.

#### **Patients Affected With Hepatitis A and E Virus:**

Percentage of patients affected with Hepatitis A and E virus. Majority of the patients are affected with Hepatitis A 71.42% virus. And Hepatitis E virus is 28.57%.

#### **Male and Female Patients with Hepatitis A and E Virus:**

Hepatitis virus A is majorly found in males 57.14% and Hepatitis E virus is 42.85%. Hepatitis A virus is majorly found in Males. Hepatitis E virus is majorly found in Females.

#### **Clinical profile of the patient's commonest symptom:**

The clinical history gave the above subjective symptoms and signs of which the commonest is the hepatomegaly (96.59%) followed by anorexia (96.59%), malaise (95.45%), yellow discoloration of eyeballs (75 %) pyrexia (68.18%), nausea and vomiting (63.63%).

#### CONCLUSIONS:

A study of 84 cases of Hepatitis A and E Virus patients has been presented with special reference to epidemiological aspects. The present study revealed the incidence of Hepatitis A Virus patients is more common in males than in females. In Hepatitis E Virus patients are more common in Females than in Males. The incidence of Hepatitis A and E Virus was progressively higher with age group 21-30 years and lowest occurring in 0-10 and 61-70 years. Hepatitis virus is progressively found disease state. Hepatitis A virus is found 71.42%, where as Hepatitis E virus is found to be 28.57%. Male and Female Patients with Hepatitis A and E Virus in males Hepatitis A virus is found to be more than in females. Hepatitis E virus is found more in females than in males. Patients most commonly presented with Hepatomegaly, anorexia, malaise, yellow discoloration of eyeballs, pyrexia, nausea and vomiting.

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