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Original Research Article

Clinical Profile of Hepatitis A Virus in Children Admitted in Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar

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Abstract:

Background: The hepatitis A virus (HAV) is a typical contagious illness that is spread by the feco-oral route. It is prevalent in rapidly urbanizing areas. Despite a high vaccination supply, this disease is persisting because of poor sanitation. From asymptomatic infection to fulminant hepatitis, it may exhibit a variety of clinical symptoms. This study aims to examine the clinical profile of kids with hepatitis A infection.

Methods: This cross-sectional study was conducted from May 2022 to April 2023 at the Department of Pediatrics, ANMMCH, Gaya, Bihar, on children with acute HAV identified by IgM hep. A. Studying clinical characteristics and consequences.

Results: The study we conducted included 54 cases. Out of 54 cases, the average age was 6.5 ± 3.9 years. The most frequent presenting symptoms were fever (92.6%), gastrointestinal issues (59.3%), and fatigue (37%). 24 individuals (44.4%) had altered sensorium and were irritable. Hepatomegaly (96.2%) and jaundice (100%) were found physically in every child. In virtually all instances, there was a more than 4-fold increase in the levels of the enzymes alanine transaminase and aspartate transaminase. In 24 (44.4%) patients, the prothrombin time was abnormal. 16 (27%) of the individuals had elevated serum ammonia. 16 instances (27%) of fulminant hepatic failure, of which 4 cases also had dengue, 2 cases had a history of taking nimesulide, and 2 cases had chronic liver disease. Of these, 14 patients (25.9%) died. Rest 40 (74.1%) recovered completely.

Conclusion: Despite the fact that hepatitis A infection is a self-limiting condition, co-infection, underlying liver disease and drug use can all lead to serious consequences. Therefore, it is important to monitor every instance until full recovery.

Keywords: Hepatitis A virus.

Introduction

The most frequent etiological agent for sporadic acute viral hepatitis in India is acute hepatitis A (HAV), particularly in children. [1] However, this virus can infect people of any age. It is a typical viral infection that spreads mostly through the faecal-oral pathway and is still widespread in many underdeveloped nations due to poor sanitation and hygiene. The range of symptoms associated with acute hepatitis A infection is broad. A variety of clinical symptoms, including atypical presentations such relapsing hepatitis, cholestatic hepatitis, and extra hepatic signs in children, may be present, or it may be silent. The incidence of instances of atypical hepatitis A in youngsters has also been rising over the past several years. Here, we offer a study that looked at the clinical characteristics, laboratory results, and other potential prognostic variables of HAV in children who were receiving care at the pediatrics department of the ANMMCH, Gaya, Bihar.

Material and Method

A cross-sectional study was conducted in Department of Pediatrics, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar from May 2022 to April 2023. Patients between the ages of 0 and 15 who displayed acute viral hepatitis symptoms, such as loss of appetite, jaundice, nausea, vomiting, discomfort in the abdomen, and itching, were tested for HAV. In our study, patients with HAV IgM positivity were included. For observation and subsequent management, patients were hospitalized. Poor overall health, being unable to eat adequately due to prolonged vomiting, a high fever, and impaired sensorium were the criteria for admission. Our study excluded patients who were treated on an

OPD basis. Parents of the children provided their approval for the study. In cases where the sensorium had been altered, patients were then given blood tests such as complete blood counts, liver function tests, prothrombin times, and serum ammonia levels. Cases were handled cautiously with symptomatic therapy and dietary recommendations.

When necessary, antibiotics were administered. Utilizing Microsoft Excel 2020, statistical analysis and data recording were performed.

Results

Acute hepatitis A was present in 54 patients under the age of 15 who visited the paediatrics department at ANMMCH. In our study, patients ranged in age from 0 to 12 years, with the majority of instances occurring in the 0 to 5 year age range. Patients were mostly boys. None of them had received the hepatitis A vaccine vaccination. Four children also had dengue as a co-infection, and two children had a history of consuming nimesulide. Table 1 displays demographic information from this data divided by age groups.

Table 1: Age and sex distribution of studied patients (n=54)

Age group & Sex	Male	Female	Total
0-5 years	12(35.29%)	10(50.0%)	22(40.74%)
6-10 years	14(41.78%)	4(20.0%)	18(33.33%)
11-15 years	8(23.53%)	6(30.0%)	14(25.93%)
Total	34(100.0%)	20(100.0%)	54(100.0%)

The study individuals' presenting problems varied and are shown in Figure 1. Jaundice (100%), fever (92.6%), dark urine (81.4%), diarrhoea (55.5%), vomiting (22.2%), abdominal discomfort (59.3%), and fatigue (37%) were the most frequent presenting complaints.

24 individuals (44.4%) had altered sensorium and were irritable. Numerous symptoms overlapped one another. Hepatomegaly was the most frequent physical finding (96.2%). Ascites was established in 2 patients (3.7%). 16.6% of the patients had fulminant hepatic failure. Everyone was given conservative care in an ICU setting.

Unfortunately, 14 patients (25.9%) died, and among them, 4 cases (7.4%) had co-infection with dengue, 2 cases (3.7% had previously consumed nimesulide, and 2 cases (3.7% had chronic liver disease). No one was re-admitted.

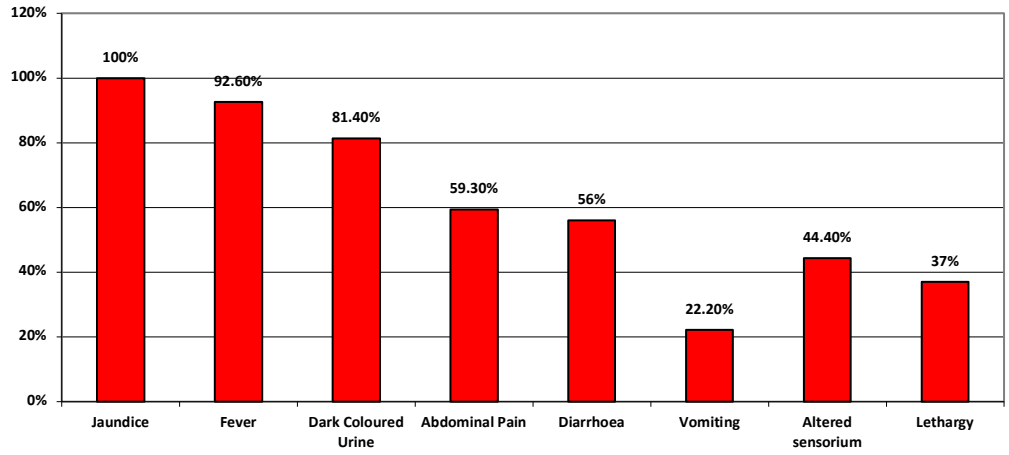

Figure 1:

Along with the confirmatory HAV IgM test, the patient underwent other testing, such as a CBC, liver function test, prothrombin time, and a check of the serum ammonia levels in those with compromised sensory faculties. The results of the numerous laboratory experiments have inconsistent values. Leucocytosis was present in 32 instances (66.6%; TLC > 10,000/µL). All children had elevated levels of total and direct blood bilirubin (serum bilirubin >1 mg/dL). Alanine transaminase (ALT) showed a more than 4-fold rise, while aspartate transaminase (AST) was detected in nearly all instances (92.5%). Four instances (7.4%) had low serum albumin levels. The abnormal prothrombin time was more than 15 seconds in 24 patients (44.4%). A patient with impaired sensorium had their serum ammonia levels checked. In 16 individuals (29.6%), the values were

higher than normal (30–86 mcg/dL). Table 2 lists the lab's parameters.

Table 2: Laboratory Parameters

	Laboratory Parameters (Range)
TLC	5000-46000/□l
Total Bilirubin	1.1-30.7 mg/dL
Conjugated Bilirubin	1.0-12.6 mg/dL
Alanine Transaminase (ALT)	256-3111 U/ml
Aspartate Transaminase (AST)	210-3098 IU/ml
Albumin	1.9-4.3 mg/dL
Prothrombin Time	11.6-111 secs.
Ammonia	Raised in 16 patients

42 cases (or 77.7%) of the 54 patients exhibited full recovery. Unfortunately, 14 individuals (25.9%) of the 16 cases with acute fulminant hepatic failure (29.6%) died. During the acute illness, only supportive care (diet, bed rest) was advised. ICU treatment was provided for patients who had acute fulminant hepatic failure.

Discussion

HAV is still endemic and the most prevalent form of acute viral hepatitis in India, where it was shown that 111 (64.5%) of the 172 children evaluated had HAV. [1] Acute hepatitis has a wide range of symptoms and indicators that make it difficult to differentiate between the many hepatitis viruses. In the pediatric age group, hepatitis A can manifest itself totally asymptomatically or as fulminant hepatic failure. Fever and diarrhea were the two most frequent presenting symptoms in our 54 patients with hepatitis A, accounting for 92.6% and 56% of cases, respectively. These symptoms can help a pediatrician make the diagnosis of HAV in an infant.

This result was consistent with a small number of studies that demonstrated fever and diarrhea to be the presenting complaints. [2-4] many kids originally showed up with low grades and went to the ED for an acute febrile illness, but much soon developed jaundice, which slowed down the time it took to diagnose acute hepatitis A. The most frequent physical findings were hepatomegaly (78%), and jaundice (100%). One patient (3.7%) developed ascites, which may have been brought on by the patient's low serum albumin level. According to a study conducted in India, ascites is an unusual occurrence. [5] Our hepatitis A patients' mean presenting laboratory results, including bilirubin, AST, and ALT levels, were comparable to those from earlier research. [2-4] Patients with high bilirubin levels experienced a lengthier sickness and required more time for their bilirubin levels to return to normal. The severity of the instances was unrelated to the elevated levels of AST and ALT. The biochemical profiles of the patients returned to normal levels on average in just under two weeks, with one patient recovering fully in just fewer than eight. In our trial, the illness did not recur, although the kids regularly complained of stomach pain as they recovered. Although the prognosis for acute Hepatitis A infection is generally extremely good, our study found a significant percentage of children who went on to have acute fulminant liver failure.

In 16 cases, or 29.6% of patients, it was seen. [14] Children (or 25.9%) of the patients died, indicating a significant mortality rate. When compared to another recent study from India, where mortality was only 1.3%, this figure is rather high. [6] Such findings might be the result of our study's short study period and limited sample size, which were its limitations. Additionally, the children who presented with fulminant hepatic failure had a history of delaying medical care, one had consumed a banned substance like nimesulide, two cases had dengue co-infection, and one patient had chronic liver disease and presented to us with a HAV relapse, suggesting that these could be risk factors for children with acute hepatitis A.

Conclusion

Despite the fact that hepatitis A is a self-limiting illness, the existence of specific risk factors, such as poor eating habits, drug use, co-infections, and underlying liver disease, can lead to serious complications. Therefore, it is important to monitor every instance until full recovery.

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