

Acute Viral Hepatitis in Diabetic and Nondiabetic Patients: Variable Outcomes

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ABSTRACT

Diabetes mellitus is frequent in Pakistan, which is also notorious for severe viral hepatitis epidemics on a regular basis. According to the present study, the clinical results of acute hepatitis B with and without diabetes were compared.

Place and Duration: This is cross-sectional descriptive study was held in the Medicine department of M. Islam Medical and Dental College Gujranwala for one-year duration from January 2021 to December 2021.

Methods: Patients with diabetes (n = 110, A group) and those without diabetes (n = 120, B group) were divided into two groups of 230 AVH patients. Age, gender, and alanine aminotransferase (ALT) levels did not vary significantly between the two groups. All patients were monitored for a period of 12 months or until they were completely cured. Upper gastrointestinal endoscopy was conducted on all of the patients in order to provide greater insight into the development of potential problems. In addition, abdominal ultrasonography was performed on all of the patients.

Results: 90 and 100 of the AVH cases in groups A and B were caused by the hepatitis E virus, respectively. Only 9 of 120 patients in group B had jaundice that lasted longer than 6 months, compared to 40 of 110 (36.4%) of patients in group A. In both groups, HEV was the primary cause of AVH (group A: (81.9%); group B: (83.3 percent). In both groups, HBV was the second most common cause of AVH. Two patients in group B developed AVH as a result of HAV. In several individuals, the etiological cause of AVH was unknown.

Conclusion: According to the results of this study, all patients with diabetes and acute viral hepatitis (AVH) should be continuously observed because there is a danger of severe liver damage and even death in these individuals.

Keywords: acute viral hepatitis, diabetics, variables, outcomes

INTRODUCTION

Chronic viral hepatitis (CVI) is a self-limiting illness that begins with prodromal symptoms and progresses to an icteric phase that can last weeks or months^{1,2}. In certain cases, the progress of cholesteric phase or acute failure of liver, as well as the progression to chronic liver disease, may make the condition serious or difficult to manage³⁻⁴. Infection with immune suppressive viruses, as well as the kind of virus, the age of infection, the host's immunological status, and the presence of other immune suppressive viruses, all influence the severity of the difficulties⁵⁻⁶. In Pakistan, AVH is still a common cause of mortality and morbidity⁷. This country experiences sporadic, endemic, and epidemic cases of acute viral hemorrhagic fever (AVH) every year⁸. Several studies have shown a relationship between diabetes mellitus (DM), a metabolic condition, and chronic liver disease as well as hepatocellular carcinoma (HCC)⁹. Despite the fact that Pakistan has a population of 22 billion people, the country has a considerable number of diabetes patients, despite the fact that the country lacks comprehensive epidemiological studies. According to circumstantial evidence, Pakistan may be home to more than 40 million diabetic persons¹⁰⁻¹¹. In Pakistan, physicians, including hepatologists, have concluded that AVH is a self-resolving pathological ailment, and patients are given just the bare minimum in terms of follow-up care and treatment. The researchers wanted to examine whether there were any differences in the clinical characteristics of patient with AVH in diabetic patients or without it. According to the present study, the clinical outcomes of acute hepatitis B with and without diabetes were compared.

MATERIALS AND METHODS

This is cross-sectional descriptive study was held in the Medicine department of M. Islam Medical and Dental College Gujranwala for one-year duration from January 2021 to December 2021. All of the patients were chosen using inclusion and exclusion criteria. This study included adults of both genders. All of the patients had diabetes and displayed clinical and biochemical indications of AVH.

All patients were monitored for a period of 12 months or until

they were completely cured. Upper gastrointestinal endoscopy was conducted on all of the patients in order to provide greater insight into the development of potential problems. In addition, abdominal ultrasonography was performed on all of the patients. Fibroscan was also performed in order to provide further insight into the severity of hepatic fibrosis.

Each case has been evaluated for eligibility, and each patient and/or responsible family member has been given the opportunity to provide informed permission. They have been briefed about the technique and the study's objectives. The family member or eligible patient has been advised that the investigations would not cost them anything extra. They've also been told that they may reject to join or quit at any moment without compromising their medical treatment. To correlate their clinical and laboratory data, patients' names and ages were first entered. When they enrolled, they were given specific ID number, which was used to level all research materials. Participants are not at risk as a result of the protocol's approaches.

Statistical analysis: Using the SPSS 22.0 software to analyze the data and results were articulated as mean standard deviation. A p value of <0.05 has been regarded significant.

RESULTS

The average age of the patients in groups A and B (51.9± 7.5 years and 50.1± 8.3 years, respectively). In addition, no significant variance in distribution of sex was found across groups, and both groups had a male preponderance. Despite significant patient variability, ALT levels were comparable between groups (group A and B).

Those in-group A had greater bilirubin levels (5.20–20.1 gm/dL) than patients in group B (1.28–17.0 mg/dL)

In both groups, HEV was the primary cause of AVH (group A: (81.9%); group B: (83.3 percent). In both groups, HBV was the second most common cause of AVH. Two patients in group B developed AVH as a result of HAV. In several individuals, the etiological cause of AVH was unknown. Dyslipidemia was observed in in group A (22.7%) and in group B (13.6%), showing that patients in group A had a significantly greater abnormal lipid profile.

In 42 of the 110 individuals in group A, jaundice continued > 6 months. Further examination of their clinical and physical state revealed important discoveries. Ascites occurred in 35 of the 42 individuals. Endoscopic examinations were performed on 42 patients who had been suffering from jaundice for more than 6 months in order to seek for indication of portal hypertension in (Table 1).

Table 1: Endoscopic valuation of patients of A group with jaundice for more than six months (N = 42)

Endoscopy of UGI	No of patients	% Of the patients
small sizedm Esophageal varices with gastropathy	22	52.4
medium-sized Esophageal varices with gastropathy)	7	16.7
Gastropathy without esophageal varices	13	30.9
Total	42	100

Small and medium-sized esophageal varices were found in 33 and 9 individuals, correspondingly. A fibro scan was performed on these individuals to have a better understanding of the degree of their liver fibrosis. There were 33 cases of mild and 6 cases of moderate fibrosis detected, however there were 4 cases of severe fibrosis with a pressure of more than 22 Kpa found in the study (Table 2).

Table 2: Elastography of liver of the patients of group A with jaundice for more than 6 months (N = 42)

Elastography findings	No of patients	Percentage (%)
Mild fibrosis (8–11 Kpa)	33	78.6
Moderate (12–21 Kpa)	6	14.3
Severe (>22 Kpa)	4	9.6

The results of abdominal ultrasonography revealed that none of the individuals in group B had chronic liver disease. Out of 120 patients of B group, 90 (75 percent) had their AVH and serum bilirubin cleared after one month. The jaundice lasted 1–3 months.

DISCUSSION

Clinical, biochemical, and virological recovery from acute viral hepatitis is usually complete within 4–6 weeks after onset, suggesting that it is a self-limiting illness. In recent years, as a result of extensive follow-up of patients with AVH, it has been obvious that the disease is not entirely non-threatening¹³⁻¹⁴. It has been reported that between 1 and 5 percent of AVH patients suffer from long-term complications such as ALF, chronic liver failure (CHF), or an extended period of icterus¹⁵⁻¹⁶. The unusual viral etiology, host characteristics such as age of infection, immunological status and the existence of underlying CLD have all been identified as contributing factors to such a complex natural history¹⁷⁻¹⁸.

Only few studies are held on the involvement of lifestyle-associated disorders in the development of AVH¹⁹⁻²⁰. According to the findings of this study, AVH without diabetes has a benign course, with all patients healing within four weeks after visiting a doctor after being diagnosed²¹. Patients with AVH who also had diabetes, on the other hand, were more likely to have a long-term course of jaundice, according to the researchers (greater than 6 months)²². In addition, a significant percentage of individuals acquired portal hypertension and chronic liver injury. Some of these individuals also had problems such as ascites. In these 42 individuals, varied degrees of hepatic fibrosis were found. Finally, liver failure claimed the lives of four individuals with DM and AVH. Taken together, it seems that preexisting DM is a key component in determining how AVH progresses naturally. However, all of the findings of this research should be taken seriously, since patients with AVH and DM were shown to have a higher rate of morbidity and even fatality²³⁻²⁴.

However, the underlying processes could not be investigated in this open-level clinical trial. Future research should look at

whether or not people with DM also have additional comorbidities. A larger cohort research with long-term follow-up might reveal some significant information concerning the treatment of AVH in DM.

CONCLUSION

To summarize, AVH is not a benign and self-limiting condition as previously reported for many people. Patients with diabetes should be given special care. These patients must also be followed for a long time.

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