

# SPORADIC NON-A, NON-B HEPATITIS: A SERO-EPIDEMIOLOGICAL STUDY IN URBAN POPULATION

Pages with reference to book, From 190 To 192

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## Abstract

The frequency and epidemiology of sporadic non-A, non-B (NANB) hepatitis was studied in adult urban population. The diagnosis of NANB hepatitis was made on the basis of exclusion by serological markers of acute viral hepatitis A and B and other aetiological factors. A frequency of 77.16 % of NANB hepatitis was found in adults in Northern Pakistan which ranks as one of the highest in the world. The faecal oral route is considered to be the most likely method of spread of sporadic NANB hepatitis in Northern Pakistan due to poor hygienic conditions prevailing in the country (JPMA 37: 190, 1987).

## INTRODUCTION

For many years acute viral hepatitis (AVH) was considered to be caused by one of the two hepatotropic viruses known as hepatitis A virus (HAV) and hepatitis B virus (HBV). Occasionally infections with Epstein-Barr virus (EBV) or cytomegalovirus (CMV) may also result in hepatic inflammation. The development of specific serological tests for infections with HAV and HBV led to the observation that many cases of acute and chronic hepatitis occurred in the absence of infection with any known and serologically identifiable viruses. The term NANB hepatitis was used for these cases to indicate that this diagnosis was based on the exclusion of exposure to the viruses of hepatitis A and B and to emphasise the observation that more than one agent was likely to be responsible for this type of AVH. The NANB hepatitis was recognised in 1974<sup>1</sup> and its importance as a major cause of liver disease has consistently increased since. The present state of knowledge of both hepatitis A and B has developed from studying the appearance of serum antigen and antibody markers specific to HAV and HBV. The NANB hepatitis is recognised by the absence of seromarkers of HAV and HBV during acute and chronic stages of hepatitis. Despite the absence of specific serodiagnostic methods, the overall understanding of NANB hepatitis has continued to improve and a large data of information has become available.

This study was conducted to assess the comparative frequency of sporadic NANB hepatitis to hepatitis A and B in adult urban population and study its epidemiology in northern parts of Pakistan.

## MATERIAL AND METHODS

This study was conducted between 1984 and 1986. Patients: The patients in this study were selected from cases admitted in medical wards of Military Hospital, Rawalpindi with complaints of jaundice, nausea, vomiting and in whom a clinical diagnosis of acute viral hepatitis was made. All patients were male adults and belonged to areas of Northern Pakistan. They were thoroughly examined and a detailed history in each case was recorded on a proforma specially designed for this purpose.

Investigations: From each patient 10.0 ml of blood was drawn into vacutainers. The sera were tested for bilirubin, aminotransferase (ALT) and alkaline phosphatase (AP). The titre of antibodies against CMV and EBV was tested in all patients. The sera of all cases were analysed for seromarkers of acute

viral hepatitis by using ELISA technique (Abbott Laboratories) in the Pathology Department and the Pakistan-US Laboratory for Seroepidemiology (PULSE) of the Army Medical College, Rawalpindi. The following ELISA kits of Abbott Laboratories North Chicago, Illinois, were used;

**HAVAB-M (1gM anti-HAV), AUSAB (HBsAg), CORZYME (anti-HBc) and CORZYME-M for 1gM anti-Hbc. CRITERIA FOR DIAGNOSIS:**

Acute viral hepatitis A was confirmed if serum was positive for 1gM antibody specific to hepatitis A virus (1gM anti-HAY). Hepatitis B was diagnosed in those cases which were positive for HBsAg and 1gM anti-HBc. If neither 1gM anti-HBc, HBsAg or 1gM anti-HAY were detected, it was concluded that the hepatitis was caused by non-A, non-B agent (s).

On the basis of history and clinical examination an attempt was made 'to exclude cases of acute hepatitis due to drugs, congestive cardiac failure, hepatotoxins, anaesthesia and transfusion.

#### **RESULTS AND OBSERVATIONS**

Most cases belonged to low socioeconomic group (96.3%) as all were drawn from soldiers and non-commissioned officers. The ages of the NANB hepatitis cases ranged between 18-70 years (mean 30.18 years  $\pm$  10.20). Maximum number of patients were in second and third decades of life (77.8%). Serum bilirubin levels ranged between 1.9-16.0 mg/dl (mean 5.86 mg/dl, SD 3.23). The highest serum levels of alanine aminotransferase. (ALT) of 680 U/L (normal < 17 U/L) and alkaline phosphatase (AP) of 190 U/L (normal <69 U/L) were found.

The study of seromarkers of viral hepatitis in 232 cases revealed non positive for the presence of 1gM anti-HAV, and 22.84 % positive for HBsAg and 1gM anti-HBc and suffering from hepatitis B. The remaining 77.16% were thus considered to be suffering from NANB hepatitis (Table).

**TABLE**  
**The Types of AVH in 232 Cases of Jaundiced Patients .**

Types	Number	Percentage
Hepatitis—B (HBsAg+IgM anti—HBc)	53	22.84
Hepatitis—A (IgM anti—HAV)	0	0
NANB hepatitis (negative for HBV+HAV)	179	77.16

The antibody titres against CMV and EBV in all 232 cases were < 1/40.

The serological study of cases of NANB hepatitis also revealed that 88.9 % were negative for anti—HBc and 11.1% positive for anti-HBc but negative for 1gM anti-HBc, thereby indicating previous exposure of these cases (11.1%) to hepatitis B virus.

The history of previous jaundice was elicited in 3.7 % cases of NANB hepatitis while 9.9% patients had contact with a patient of jaundice in the past three months. Twenty per. cent patients of NANB hepatitis had evidence of exposure to hypodermic needle. No history of clustering of cases of N.ANB hepatitis was observed.

## DISCUSSION

Non-A, non-B hepatitis has been found in every country in which it has been looked for. Although the illness in NANB hepatitis is usually mild, often subclinical or anicteric, severe hepatitis with jaundice does occur and is an important cause Of fulminant hepatitis.

The present study establishes NANB hepatitis as the most important type of sporadic acute viral hepatitis (77.16%) in adult patients in Northern Pakistan, the highest frequency rate of NANB hepatitis compared to other reported series in the literature. Since Indian population has similar socioeconomic background as in Pakistan, a frequency of 58%<sup>2</sup> reported from India is closer to the frequency observed in the present study. The frequency of NANB hepatitis varies greatly in some countries of Europe and North America. In the United States a study reported the frequency of NANB hepatitis as 20-25%<sup>3</sup> while according to another series it was 42 %<sup>4</sup> A much lower incidence of NANB hepatitis was found in Greece by Papaevangelou et al<sup>5</sup> who reported it in 9% cases of sporadic jaundiced patients whereas in England a study revealed that NANB hepatitis comprised only 4.3% of cases of acute viral hepatitis<sup>6</sup>. From Denmark 27% cases of hepatitis were reported to be of NANB type and in Sweden 25% patients of hepatitis in drug addicts were of NANB origin. <sup>7</sup>

In present study a history of contact with cases of AVH or exposure to needle was elicited in a few patients only. It is proposed on the basis of history, socioeconomic background and pattern of sewage disposal of jaundiced patients that in Northern Pakistan waterborne infection due to faecal contamination of water and food may be the major cause of spread of NANB hepatitis.

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