Prevalence of hepatitis C virus antibodies in different patient groups

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✔ The hepatitis C Virus (HCV) is now known to be the chief cause of transfusion–associated non–A, non–B hepatitis (NANBH). The prevalence of HCV infection was assessed by means of Abbott enzyme–linked immunosorbent assay for serum anti–HCV antibodies. 2222 serum samples were selected from different patient groups, according to their risk of blood–borne viral infections. Anti–HCV antibodies were detected in 25 of 83 (30.12%) risk group (Haemodialysis patients and polytransfused patients with haemophilia, thalassemia, patients of cardiac surgery). Among healtyh subjects, without risk factors for hepatitis, the overall prevalance of Anti–HCV was (0.14%).

Key words: Hepatitis C Virus antibodies, HCV Risk groups

✔ Hepatit C virusu (HCV), transfüzyon ile ilişkili non–A, non–B hepatiti (NANBH)'nin başlıca nedenidir. HCV infeksiyon prevalansı Abbott'un anti–HCV antikorları için enzyme–linked immunosorbent assay (ELISA) test kiti kullanılarak saptanmıştır. 2222 serum örneği, kan yoluyla viral infeksiyon bulaşma riski olan değişik hasta gruplarından toplanmıştır. Anti–HCV antikorları 83 risk grubunun (hemodiyaliz hastası, hemofili, talassemi gibi politransfüze hastalar ve kalp cerrahisi hastaları) 25 (%30.12)'inde saptanmıştır. Hepatit risk faktörü bulunmayan sağlıklı bireylerde anti–HCV prevalansı ise %0.14 olarak saptanmıştır.

Anahtar kelimeler: Hepatit C virus antikorları, HCV Risk grupları.

INTRODUCTION

More than 90% of transfusion–associated hepatitis cases are world–wide attributed to non–A, non–B hepatitis (NANBH) [1–4]. NANBH accounts for a substantial proportion of hepatitis cases among patients with frequent parenteral exposure to blood (eg. haemophiliacs, intravenous drug abusers, and haemodialysis patients) and fore more than 25% of cases of sporadic hepatitis without obvious percutaneous exposure [4]. In the late 1980s HCV was identified, and soon recognized as the major agent causing blood–associated NANBH [5,6]. Virus isolation led to the development of a recombinant–based immunoassay for detection of specific anti–HCV antibodies. To estimate the prevalance of HCV infection, we have studied 2222 serum samples from patients grouped according to their risk of blood–borne viral infections.

MATERIALS AND METHODS

2222 serum samples were obtained from two categories of patients: 83 at high risk of viral hepatitis (group I) and 2139 healthy subjects without liver disease and with no history of percutaneous exposure to blood (group II).

Group I

Serum samples were obtained from 83 patients aged 1 to 60 years. 14 patients with coagulation disorders (13 thalassemia; 2haemophilia), 64 patients all seronegative for HBV markers on chronic haemodialysis and 4 patients of cardiac surgery.

Group II

There were 2108 unselected blood donors and 31 hospital staff.

All samples were shipped in dry ice to the assay laboratory and tested under code in duplicate. Antibodies to HCV were detec-

ted by using a recombinant enzyme immunoassay test (Abbott Lab.) Positive results were confirmed in the same serum sample, and repeatedly reactive samples were defined as truly positive.

RESULTS

Group I

30.12% of patients in this group were anti-HCV positive (table I). Antibodies to HCV were detected in 2 of the 13 thalassemia and none of 2 haemophilia cases. 23 of the 64 tested chronic haemodialysis patients were positive. Of the 37 patients who had received blood transfusions in the past, 27 were positive, 12 of the 27 without a history of transfusions.

Group II

Antibodies to HCV were detected in 3 of 2108 randomized blood donors, and none of 31 hospital staff. Overall frequency of anti-HCV in this group was 0.14%.

DISCUSSION

In our study the prevalence of HCV antibodies in the high risk group was 30.12% as compared to 0.14% in healthy subjects.

The reported worldwide incidance of HCV antibody in high risk groups has ranged from 6% to 85% (4), with the highest incidence being reported in patients at a high risk of infection (with or without liver disease).

The incidence of the anti-HCV in the haemodialysis patients in the present study (35.9%) is considerably higher than the previously reported series. The studies on the prevalence of HCV infection in patients on chronic haemodialysis have led to contrasting results, the frequency ranging from 1 to 37% in different reports [7-10]. An increased incidence of anti-HCV in patients with longer time on hemodialysis has been previously reported [8-12]. The high icidence of anti-HCV, together with the increased incidence of anti-HCV with increased time on hemodialysis suggest the possibility that hemodialysis may carry a risk of exposure to HCV [8,13]. In addition we conclude that hemodialysis patients should be considered as a high risk group for HCV infection and may represent an important source of HCV infection especially for staff members of a dialysis unit.

The high frequency of anti-HCV antibodies among thalassemia was not unexpected. Parenteral iatrogenic transmission of NANBH by blood or blood derived products is well known. Blood transfusion is a risk factor for HCV infection.

The seroprevalence of anti-HCV among healthy subjects in our study does not differ significantly from the previous reports

Table I: Anti-HCV antibodies in different patients groups according to risk of hepatitis.

GROUP	TESTED	ANTI-HCV POSITIVE (%)
Group I		
Haemophiliacs	2	0
Haemodialysis patients	64	23 (35.9)
Thalassemia	13	2 (15.3)
Cardiac surgery patients	4	0
TOTAL	83	25 (30.12)
Group II		
Random blood donors	2108	3 (0.14)
Hospital staff	31	0
TOTAL	2139	3 (0.14)

[4, 14,15], only 0.14% of the voluntary blood donors have been definitely anti-HCV positive. In addition, the prevalence of anti-HCV is not higher among medical staff with an increased risk for blood exposure than among healthy blood donors.

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