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January 1996

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Recommended Citation

Qureshi, A. R., Hamid, S., Jafri, W., Ejaz, F., Shah, H., Abbas, Z., Abid, S., Khan, H. (1996). Community acquired and post-transfusion hepatitis C "is there a difference?". *Journal of Pakistan Medical Association, 46*(1), 9-11.
Available at: https://ecommons.aku.edu/pakistan_fhs_mc_med_gastroenterol/170

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Community Acquired and Post-Transfusion Hepatitis C ”Is There a Difference?”

Pages with reference to book, From 9 To 11

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Abstract

We analyzed 77 consecutive hepatitis C antibody positive patients to compare the history, laboratory data and histological features of community acquired (CA) and post-transfusion (PT) hepatitis C. Forty-six patients had “CA” and 31 “PT” hepatitis C. Mean age in both groups was same (45.67 vs 46 years). Male to female ratio was 2:1 in the CA group and 1:2.4 in the PT group. Mean duration between jaundice and first presentation was 8.9 years in the CA group and the mean duration between transfusion and first presentation was 9.8 years in PT group. No significant difference was found between two groups in the laboratory data. Liver biopsy was done in 32 patients (19 CA and 13 PT group). Mean histological score for disease activity was 9.3 in both groups, although more (68%) patients in the CA group had cirrhosis with chronic active hepatitis, (CAH) as compared to the PT (54%) group. Hepatitis C is an important cause of CA hepatitis. PT hepatitis C is more common in females because of increased likelihood of receiving transfusion for obstetric and gynaecological reasons. There is no significant difference in the laboratory and histological features between CA and PT hepatitis C (JPMA 46:9, 1996).

Introduction

NonA NonB hepatitis was first recognised in 1974[1]. In mid 70’s, it was demonstrated that 5-12% of cases developed hepatitis after transfusion of hepatitis B surface antigen negative blood. Among these patients, 90% were diagnosed to have Non A Non B hepatitis[2,3]. The causative agent for tile great majority of cases of Non A Non B hepatitis was discovered recently and named Hepatitis C virus (HCV)[4]. The subsequent development ofantibody tests forHCV have made possible the easy diagnosis and the study of this infection[5]. Now hepatitis C is recognized to be a common disease with a world-wide distribution and accounts for more than 90% of post-transfusion hepatitis[6]. The current estimated incidence of acute infection a.mong transfusion recipients is from five to ten percent[7].

Although, initially regarded mainly as a blood-borne infection, due to the similarities with hepatitis B, a significant proportion of patients with HCV infection have no known risk factors for disease transmission[8]. This “community acquired HCV infection” is thought to differ from post-transfusion HCV (PT- HCV) in being more slowly progressive and to perhaps effect an older population[9].

Chronicity is a common feature of both forms of hepatitis C and chronic hepatitis develops in 50% of these patients and cirrhosis in 20%[9-11]

This study compares the features of communityacqu.ired and post transfusion hepatitis C ith respect to demographic data clinical presentation laboratozy data and histological findings.

Patients and Methods

Seventy-seven consecutive antibody positive patients were analyzed. They were seen either at their

outpatient visit or during their admission. A profonna filled for each patient, included demographic data, principal symptom on first presentation, histozy of blood transfusion and post transfusion jaundice and past history of jaundice. Also recorded were the risk factors for hepatitis C. like history of drug abuse, I.V injections, occupational exposure or sexual exposure to prostitutes. Laboratory data included a complete blood count, liver function test, hepatitis serology and histological features where available. Patients with a clear history of blood transfusion were included in the post-transfusion groups and those without as "community acquired hepatitis C". Also included in this group were patients with a history of extra marital sexual contact or I.V. drug abuse.
The results are expressed in percentage incidence and rnean±SD. Chi-square tests were used to identify significant differences among the groups. P value <(105 are considered to be statistically significant.

Results

Offl patients, 46 had CA hepatitis C while 31 had post-transfusion hepatitis C. This was based on the history of transfusion in the past.

Table I. Demographic data.

Characteristics	CA Hepatitis C (n=46)	Post-transfusion HC (n=31)
	M. + SD.	
Age (Years)	45.67±12.67	46.00±12.77
Sex (%)		
Male	30 (65.2) n(%)	9 (29.03)
Female	16 (34.8)	22 (70.97)
Residence (%)		
Urban	35 (70.08)	28 (90.3)
Rural	11 (29.92)	3 (9.7)

Table 1 compares the demographic data of the two groups. A significantly higher proportion of females had post transfusion hepatitis C ($p<0.005$).
Appmximately 60% of patients from both groups were out patients and the remaining in-patients. The major symptoms at first presentation are listed in Table II.

Table II. First presenting symptoms.

Presenting symptoms	CA Hep. C (%)	PT Hep. C (%)
General constitutional symptoms (e.g. fatigue, nausea, anorexia, lethargy etc.)	17 (36.96)	11 (35.48)
Variceal bleed	12 (26.08)	8 (25.80)
Confusion, drowsiness and coma (Hepatic encephalopathy)	7 (15.22)	2 (6.46)
Ascites/SBP	5 (10.87)	2 (6.46)
Incidental finding	5 (10.87)	5 (16.13)
Jaundice	00	3 (9.67)

SBP= Spontaneous bacterial peritonitis.

About 35% patients inboth groups had general constitutional symptoms at first presentation while 10-15% in both groups were diagnosed incidentally i.e., either at surgery or they presented with some other problems and on testing were found to have an elevated aminotransferase level and later found to be HCV antibody positive.

Twenty-seven patients had a definite past history of jaundice in the "CA" group and the range of duration between jaundice to first presentation was 1-30 years and the mean duration between jaundice and presentation was 8.9 years. Forty-one percent patients had no prior history ofjaundice and among these patients, 5 had a history of contact with a patient of chronic liver disease or hepatitis in the immediate family and3 (6.52%) had a history of extra marital sexual contact. There were no dntg addicts in this cohort.

Thirty-one patients had a history of blood transfusion in the past and the duration between transfusion and first presentation was 1-27 years and the mean duration was 9.8 years. Only 6 had a history ofpost-transfusionjaundice and all of these patients had jaundice within first 3 months of blood transfusion.

A comparison of laboratory data is shown in Table III.

Table III. Laboratory data.

Investigations	"CA" Hepatitis C	PT Hepatitis C
Haemoglobin (gm%)	11.73±2.49	11.82±2.28
Platelet count ($x10^9$E/l)	145.30±117.02	146.84±99.16
Bilirubin (mg%)	2.83±3.94	2.46±3.69
SGPT (IU/L)	127.04±92.21	140.94±206.98
SGOT (IU/L)	70.70±117.82	80.35±88.85
Alkaline phosphatase (IU/L)	142.87±93.59	150.13±94.98
Albumin (gm/dl)	2.44±1.06	2.83±0.94
Globulin (gm/dl)	3.51±1.39	4.00±1.18
PT (sec.)	5.37±3.84	5.18±6.68

p value= Not significant

Minimal level of hacmoglobin, platelet count and albuminand the maximum level of bilirubin, SGPT, SOOT, alkaline phosphatase, globulin and prothrombin time are analyzed for each patient. All these figures are expressed as mean±standard deviation.

Hepatitis B surface antigen and HC\\' antibody were done in all and both were positive in only three patients, indicating HB V/HCV co-infection. Hepatitis B core antibody IgG was done in 58 patients and was found reactive in 28 patients.

Liver biopsy was done in 32 patients. Nineteen had CA hepatitis C and 13 had PT hepatitis C. The histological features were-compared and histological activity index[12] was calculated and compared in both groups. The comparison of histological features is shown in Table IV.

Table IV. Comparison of histological features.

Histological features	CA Hep. C (%)	PT Hep. C (%)
Bridging necrosis	9 (47.37)	8 (61.54)
Piecemeal necrosis	17 (89.47)	13 (100)
Fatty change	9 (47.37)	7 (53.84)
Lymphoid follicle aggregation	14 (73.68)	12 (92.31)
Fibrosis	14 (73.68)	7 (53.84)
Sinusoidal lymphocytosis	9 (47.37)	8 (61.54)
Sinusoidal hyperplasia	9 (47.37)	11 (84.61)
Bile duct proliferation	9 (47.37)	5 (38.46)
Bile duct destruction	9 (47.37)	8 (61.54)
Cholestasis	1 (5.25)	1 (7.69)
Histological diagnosis		
Cirrhosis with CAH	13 (68.40)	7 (53.84)
CAH	4 (21.10)	6 (46.16)
Chronic persistent hepatitis	1 (5.25)	00 (-)
Normal	1 (5.25)	00 (-)
Mean histological activity index	9.3	9.3

CAH = Chronic active hepatitis

Discussion

This study raises several important issues related in patients with chronic HCV infection. In majority of patients like in other studies, the mode of transmission of HCV is not clear[13]. Agents possibly implicated in this inapparent transmission of HCV are parental injections with unsterile needles as is common practice in our countiy, arthropod vectors like mosquitoes, sexual orhousehold exposure etc. However, there is no conclusive proof so farforany of these factors and further studies are required in

this area.
There was no difference in the meanage of presenlation betweenthetwo groups. Aithougha numberofpatients inboth groups did not have a history ofjaundice, the mean duration between the onset of jaundice to presentation was similar in both groups at around 9 years. Both these figures suggest that CA-HCV may notbe as indolent a disease as thought to be and does not seem to have a very different natural history as compared to PT-HCV[9]. The mean duration to presentation at 9 years also suggests that in our group of patients with CA-HCV, exposure is likely to have occurred in the late 20's orearly 30's and that early childhood exposure seems unlikely, given that the mean age of presentation in our patients is around 46 years.
Majority of patients with PT-HCV were females. Most of these transfusions were given for obstetric or gynaecological causes. The facilities of screening of blood for HCV are available at only few centres in our country, therefore, most transfused blood is unscreened for HCV.
In sumnary, liver disease caused by chronic HCV infection is an important problem in our setting and in the majority of these patients the route of transmission is not known. Until this is clarified, common sense precautions like the use of sterile needles and effective protection against sexual transmission are needed. Blood should be screened for HCV and the need for a transfusion should always be very carefully assessed, particularly so in places where HCV testing is not yet available.

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