ORIGINAL ARTICLE

PREVALENCE AND RISK FACTORS FOR HEPATITIS C VIRUS DURING PREGNANCY

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ABSTRACT

Background: Hepatitis C virus is one of the major etiological agents for parenterally acquired hepatitis. Viral hepatitis during pregnancy is associated with high risk of maternal complications. This study was conducted to determine the prevalence of HCV infection in pregnant women, and to find out its risk factors.

Patients & Methods: It was a prospective observational study conducted at Department of Obstetrics and Gynecology, Peoples Medical College Nawabshah, from May 2008 to June 2oo9. Pregnant women were screened for HCV antibodies during antenatal visits. Detailed history of HCV positive patients was taken to find out the risk factors.

Results: Among 3020 pregnant women, 102 were positive for HCV antibodies. Of these 73(71.52%) were positive for HCV-RNA by PCR. Among anti-HCV positive women, 8(7.84%) were also positive for HB_sAg. The age range was 17-35. The mean parity of study group was 0.8 ± 0.9. Of 102 women, 10(9.8%) had delivery, 19(18.62%) previous surgery, 20(19.60%) blood transfusions, 10(9.8%) underwent D&C, 5(4.9%) had dental surgery, 6(5.86%) received injection by quack, and 32(31.5%) had unknown risk factor.

Conclusion: Prevalence of Hepatitis C virus infection in pregnant ladies is 3.44%. Past history of blood transfusion, surgery, and delivery by traditional birth attendant are the most important risk factors for transmission of infection.

Key words: Hepatitis C virus, Pregnancy, Prevalence, Risk factors.

INTRODUCTION

Hepatitis C virus (HCV) is one of the major etiological agents for parenterally acquired hepatitis. It is asymptomatic in large proportion of cases (65-75%) and revealed accidentally by abnormal liver function tests or anti-HCV positivity. The long term morbidity and mortality is far greater than its counterpart Hepatitis B virus in terms of chronic hepatitis 70%, cirrhosis 20-30%, hepatocellular carcinoma and liver failure.[1] Perinatal transmission from mother to offspring is relatively low but possible (less than 10%).[2,3] Seroprevalence in women and children has to be established.[4] The prevalence of HCV in general population range from 4-25.7%,[5] with highest number of infection reported in Egypt.[6]

The prevalence of HCV in population can be predicted by the risk factors associated with transmission of infection. These risk factors includes, blood products transfusion, occupational injury, surgery, injection and vertical transmission.[7]

Viral hepatitis during pregnancy is associated with high risk of maternal complications. It has a high risk of vertical transmission, and it has been reported as the leading cause of maternal death.[8,9]

This study was conducted to determine the prevalence of HCV infection in pregnant women, and to find out its risk factors.

MATERIAL AND METHODS

The study recruited 3020 healthy pregnant women at antenatal clinic of Obstetrics and Gynecology Department, Peoples Medical College Nawabshah, from May 2008 to June 2009. All anti-HCV positive samples were tested for HCV–RNA by reverse transcriptase polymerase chain reaction (RT-PCR). RNA was extracted by using the acid–Guanidium-phenol-chloroform method as described by the Chomezynski and Sacchin.[10] These patients were also screened for HB_sAg.

RESULTS

Among 3020 pregnant women, 102 (3.44%) were positive for HCV antibodies. Of these 73 (71.52%) were positive for HCV-RNA by PCR. Among anti-HCV positive women 8 (7.84%) were also positive for HB_sAg.

Table 1: Age groups of Anti-HCV Positive women (n=102)

Age Group (years)	Anti-HCV Positive	
	Number	Percentage
17-20	14	13.72
21-25	50	49.01
26-30	25	24.50
31-35	10	9.80
>35	3	2.94

The age range of anti-HCV positive women was 17-35. The mean parity of study group was 0.8±0.9. Forty two (41.17%) of these ladies were nullipara while 60 (58.82%) multipara. (Table-1)

Among the known risk factors for transmission of HCV infection, previous blood transfusion, dilatation & curettage (D&C), previous general surgery, dental surgery, delivery and injection by quack, were taken as independent variables. Of 102 women, 10 (9.8%) had delivery, 19 (18.62%) previous general surgery, 20 (19.60%) blood transfusion, 10 (9.8%) underwent D&C, 5 (4.9%) had dental surgery, 6 (5.86%) received injection by quack, and 32 (31.5%) had unknown risk factor. (Table-2)

Table 2: Risk factors analysis in study population

Risk Factor for Hepatitis C	Anti-HCV RNA Positive	HCV RNA Positive	HCV Negative
Delivery	10	8	2
General Surgery	19	15	4
D&C	10	8	2
Blood Transfusion	20	16	4
Dental Surgery	5	3	2
Injection By Quack	6	6	0
Unknown	32	19	13
Total	102	73	29

DISCUSSION

Various studies have shown HCV seroprevalence in Pakistan ranging from 0.7% to 20 %.[11] In our study sero prevalence of HCV in antenatal healthy population was 3.44%, which is similar to the finding of other epidemiologic studies.[12,13] The highest prevalence of infection occurs in reproductive age group.[14,15] Seropositivity has been found to increase upto the age of 40 years and then declines.[16] It may be due to exposure of these women to the risk factors. In our study the prevalence in younger women was found to be higher up to the age of 35 years, similar to the other studies.[17]

The prevalence of anti-HCV in multiparous women was more than nulliparous in our study.

It was found that 71.52% of anti HCV positive pregnant women had detectable HCV-RNA in their blood, a figure similar to that found in most of the studies (64-75%) in asymptomatic pregnant women.[18,19]

Results of our study show that past history of surgical procedure, blood transfusion, delivery and D&C are the most significant risk factors for transmission of HCV infection. Similar relation with surgery was found in a study conducted at Shifa International Hospital Islamabad.[20]

Before the institution of HCV screening, the main source of its transmission was transfusion of blood and blood products.[21] In our study blood transfusion is one of important risk factor for transmission of HCV infection because our institution is a referral centre and most of the patients come from rural areas where facilities for screening of Hepatitis B & C are poor resulting in transmission of infection. Blood transfusion is also reported in a study from Hazara to be the major source of HCV transmission.[22]

There is debate going on regarding screening for HCV as it can result in significant psychological morbidity, stigmatization and discrimination including by the medical staff, while nothing has to be done during pregnancy. Pregnancy may not be the right time to offer this screening. It is considered to be unjustified because we can not prevent mother to fetus transmission.[23,24] In underdeveloped country like Pakistan because of poverty and lack of facilities, women have poor access to the hospitals, hence HCV screening should be carried out during pregnancy to identify asymptomatic women with chronic disease whom following pregnancy may be benefited from antiviral therapy.

CONCLUSION

Prevalence of Hepatitis C virus in healthy pregnant women is 3.44%. Past history of blood transfusion, surgery, delivery and D&C are the most important risk factors for its transmission.

Hepatitis C is a preventable disease with serious implications, so proper sterilization of instruments, health education and awareness of gen-

eral population should be improved and screening for HCV should be encouraged.

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