ORIGINAL ARTICLE

Frequency of Hepatitis B & C and Related Risk Factors in Pregnant Women

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ABSTRACT

Aim: To determine frequency of hepatitis B and C in booked antenatal cases of Sh. Zayed hospital to identify the related risk factors responsible for transmission of hepatitis B & C among pregnant women.
Study design: This was a cross sectional descriptive study.
Setting: Study was conducted in the department of obstetrics and gynaecology Shaikh Zayed hospital Lahore from 18th october2005 to 18thApril 2006.
Method: Among 801 pregnant women attending outpatient Department of Gynaecology & Obstetrics were included. 53 were found to be positive for hepatitis B & C. and informed consent was taken. Relevant data obtained through specializedPerforma. Cases of hepatitis other than B&C were excluded. ELISA was used to determine hepatitis B & C status. Data analyzed by using SPSS 10.
Results: Out of 801 women 36(4.49%) were found to be anti HCV positive; 15(1.87%) were positive for HbsAg while 2(0.24%) had mixed infection of hepatitis B&C. Mean age was 28.4(+-5.1). 38 females (71.7%) were multigravida and 15(28.2%) were primigravida. 25(47.2%) belonged to low socioeconomic status. Risk factor analysis showed that 14(26.4%) patient's husband were seropositive. 45(84.9%) women had previous surgery i.e., tooth extraction, dilatation & curettage, cholecystectomy and appendectomy etc. 42(79.3%) women had history of blood transfusion.
Conclusion: In our study frequency of anti HCV is more than HbsAg. Previous surgery, blood transfusion and history of parenteral injections were recognized risk factors. Therefore the need to institute public health measure to reduce disease burden and transmission including routine screening of all pregnant mother of HBV & HCV infection.
Key words: Hepatitis, universal screening, risk factors, pregnancy.

INTRODUCTION

Viral hepatitis is a major health problem particularly in developing countries Hepatitis is acute when it lasts less than six months and chronic when it persist longer[1]. Hepatitis B is the most common viral infection affecting more than 300 million people worldwide[2]. Over 20 million people are infected annually with this virus globally and there are 350 million chronic carrier of hepatitis B virus (HBV).

Hepatitis C prevalence according to WHO estimates is 3% of world population (200 million)[2]. Hepatitis virus is found in the blood &other body fluids. Common route of infections include blood transfusions, blood products, surgical & dental interventions, sexual transmission, ,sharing needles., razors, tooth brushes or household articles, tattooing and body piercing if done using unsterile equipment[3]. There is a high rate of vertical transmission causing fetal and neonatal hepatitis which can have serious effects on the neonate, leading to impaired mental and physical health later in life[1].

Many people infected with hepatitis B or C rarely displays any symptoms; although they can transmit the virus to other[4]. The consequence of HBV infection depend on the age of its acquisition, there is over 90% risk of newborn to get infected &became long term carrier, if the mother were positive Hb antigen[5]. Mother to child transmission has been reduced to approximately 5% overall in all countries including the US that have instituted postpartum neonatal HBV vaccination and immune prophylaxis with hepatitis B vaccine[6].

Hepatitis C transmission occurs predominantly around the time of delivery. In contrast to HBV no therapeutic agents are yet available or recommend further decrease mother to child transmission (MTCT) which remains 3 to 10%[6]. MTCT can be minimized by avoiding fetal scalp electrode, birth trauma whenever possible.

The lack of any therapeutic option in pregnancy for hepatitis C infected pregnant women make any obstetrician feel that it may not be the right time to offer it as nothing to be done during pregnancy. Keeping in view the risk of infections pose to health care professionals and opportunity to identify asymptomatic women with chronic disease who may benefit from antiviral therapy following pregnancy

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screening for anti HCV should be done in antenatal women[2]. The young women should be referred for post delivery&neonate should be closely followed to rule out infection. Currently there is no drug able to reduce vertical transmission of HCV infection[6].

Thus the current study is aimed to see frequencyof HBV & HCV and associated riskfactors in pregnant female at Sheikh Zayed hospital Lahore.

MATERIALS AND METHODS

The study was conducted in the department of Obstetrics and Gynaecology Shaikh Zayed hospital, Lahore from 18th Oct 2005 to 18th April 2006. This was cross sectional descriptive study carried out by non-probability sampling technique. Among 801 pregnant women attending outpatient department of Gynaecology and Obstetrics 53 were found positive for hepatitis B and C were included. Relevant data obtained through specialized Performa. Female demographic feature like age, parity, socioeconomic class, husband seropositivity, possible risk factors like previous surgery like tooth extraction, or other surgical procedure, bloodtransfusions, intravenous or intramuscular injections were recorded. Cases of hepatitis other than Hepatitis B & C were excluded. Women hepatitis B &C status confirmed using ELISA technique. Data analyzed by using SPSS version 10. Data is presented in the form of tables for the age, parity, and risk factors. Continuous variable are presented as range. Categorical variables are given in numbers (%) percentages.

RESULTS

Out of 801 women 36(4.49%) were found to be Anti HCV positive; 15(1.87%) were positive for HBsAg while 2(0.24%) had mixed infections of hepatitis B & C. mean age was 28.4(±5.1). Socioeconomic status 25(47.2%) belonged to low socioeconomic status which is depicted in table2. Expected Risk factor analysis showed that 14(26.4%) patient's husband were seropositive, while 39(73.6%) were normal. 45(84.9%) women had history of previous surgery i.e. tooth extraction; Dilatation & curettage; cholecystectomy & appendectomy etc. 42(79.3%) women received bland transfusion previously and 47(79.3%) received both I/M & I/V injections previously. The results are depicted in table 3. Majority 52(98.1%) had normal LFT's

Table 1a: Demographic characteristics age of seropositive women (n=53)

Age Group (years)	n	%age
<20	1	1.9
21 – 29	36	67.9
30 – 39	16	30.2
> 40	0	0

Mean±SD = 28.4±5.1

Table 1b: Parity of seropositive patients (n=53)

Parity	n	%age
Primigravida	15	28.3
Multigravida	38	71.7

Table 2: Distribution of socioeconomic class of seropositive women (n=53)

Socioeconomic Class	n	%age
Poor (<Rs.5000)	25	47.2
Middle (Rs.6000-11000)	25	47.2
High (Rs.>15000)	3	5.7

Mean±SD = 7250±2.570

Table 3: Risk Factor distribution of studied women

Risk Factors	Yes	No
Blood Transfusion	42(79.3%)	11(20.7%)
H/O previous surgery	45(84.9%)	8(15.1%)
H/O Injections		
I/V Injections	1 (1.9%)	0
I/M Injections	5(9.4%)	0
Both I/V I/M Injections	47(88.7%)	0

DISCUSSION

Infections due to hepatitis B and C viruses (HBV; HCV) are significant health problem globally.Itis responsible for serious consequences in term of liver diseases, hepaticfailure, and development of hepatocellular carcinoma.Prevalence of HCV infection is around 5% in Pakistan. Using WHO s, criteria of endemcity of HBV countries with carrier rate of <3%, falls in low endemic area[7] Pakistan is considered low endemic area.

Universal screening of hepatitis B and C is adopted in all antenatal setup in Pakistan. Benefit is twofold one to notify seropositive patient for hospital staff safety, second active and passive immunization of new born in case of HbsAg positive mother.

Overall frequency in our study is 1.87% for HbsAg positivewhile 4.49% were anti HCV positive and coinfection in (0.24%). The overall prevalence of HbsAg reported in local studies from Pakistan is 2.6%[7], 1.3% from rural area of Swat[8], 0.3% in Karachi[2] which showed overall low endemic area. In contrast study fromMULTAN reported 4.6%[(9)] which may reflect high risk group which require further studies to explore this.t WHO reportshighly edema prevalence greater than 8% for HBV[6] study of Benin teaching hospital Nigeria[1] and Yemen[10] showed high prevalence 12.5% and 10.8% respectively These differences might be due to fact that some cultural practices like piercing, tattooing and sexual behavior increases the risk of HBV. Most of medical colleges had made compulsory submission ofHBV vaccination on admission to medical college .Addition of HBV vaccine in EPI program inPakistan will lead to decrease in prevalence of hepatitis B.

Frequency of hepatitis C was 4.6% in our study. Local studies showed prevalence of HCV 7% (Multan[9]), 10.8% (Lahore[11]), 2.5% (karachi[2]).In Pakistan serotype 3 is the most common & easy to treat with cure rate 80%[7].International studies also showed prevalence of 12% in NIGERIA[(1);] 8.5% in Yemen[10].

Majority of our patient were multigravida (71.7%) 26.4% had sec positivity of same virus in husband. Multigravida patient might be at increased risk of hospital admission, blood transfusion or any surgical procedure in past. Finding are consistent with studies conducted in Nigeria[1] in three other local studies[8,12,13].

Among risk factors 84.9% patient had previous surgical procedure, 79.3% received blood transfusion while H/o injection both I/m and I/v present in 88.7% of patients. Results are consistent with study conducted in Ankara[14] and Yemen[10]. Pakistan has the highest rate of therapeutic injections per person per year[15] .Use of unsterilized syringes or sharing of needles is considered to be responsible for viral transmission. Patients with history of dental procedure are 4 times more prone to get HCV infection[11].

In contrast, study conducted in India[6] another in Karachi[2] Showed that 50% of HCV positive women had no identifiable factor; Showing that many of the cases would have been missed if risk factors alone was used as criteria to offer screening thus universal screening should be offered to all pregnant female rather using presence of risk factor. The majority of our patients were from low socioeconomic backgrounds; therefore it is difficult to suggest that the infection was more prevalent in those with lower educational level or unsafe practices in that population. 98.1% of our patient had normal liver function test showing chronic nature of these viral infections. It should be noted that population investigated consisted only of women able to asses' antenatal care, & women presented to tertiary care hospital so cannot represent Pakistan as whole.

Being mainly transmitted via infected blood& blood products, use of dirty syringes, razors, unsterilized instruments, body tattooing and vertical transmission preventive measures such as emphasis on universal screening of HBV and HCV; adoption of proper sterilization technique; screening of blood from Licensed blood bank; media campaign regarding awareness to discourage sharing of used sharp subject like blade; needles; syringes; body tattooing and emphasis on hepatitis B vaccination can remarkably help in controlling the spread of infections.

CONCLUSION

Frequency of anti HCV is more common than HbsAg.in our study previous surgery; blood transfusion and parenteral injections were recognized risk factors among seropositive patient. Therefore the need to institute public health measure to reduce disease burden and transmission including routine screening of all pregnant females of HBV & HCV infection.

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