

FREQUENCY OF HBs Ag AND ANTI-HCV IN ANTENATAL POPULATION

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ABSTRACT

OBJECTIVE:

To determine the frequency of HBsAg and anti-HCV in pregnant women.

STUDY DESIGN: Class Sectional descriptive study conducted at patients and methods.

Total 5172 pregnant women enrolled in the study. Venous blood was collected for HBs Ag and HCV antibodies detection by ELISA.

RESULT:

All n=5172 pregnant women were tested for HBs Ag and anti HCV were divided into 6 groups according to age. In 1st group 15–20 years, n=714, 7 (7.8%) HBs Ag and 39 (9.2%) Anti HCV, in 2nd group 20–25 years, n=1715, 12 (13.3%) HBs Ag and 52 (12.3%) Anti HCV, in 3rd group 26–30 years, n=1168, 17 (18.9%) HBs Ag and 82 (19.4%) anti HCV, in 4th group 31–35 years, n=616, 19 (21.1%) HBs Ag and 89 (21%) anti HCV, in 5th group 36–40 years, n=579, 16 (17.8%) HBs Ag and 77 (18.2%) anti HCV and in 6th group 41–45 years, n=362, 19 (21.1%) HBs Ag and 84 (19.9%) anti-HCV positive results.

DISCUSSION:

According to a present study there was a high frequency of anti-HCV 8.78% than HBs Ag 1.74% among antenatal subjects of Karachi which were higher than previous Published local studies.

INTRODUCTION:

Hepatitis is an inflammation of the liver characterized by the presence of inflammatory cells in the tissue of the organ^(1,2), Hepatitis B virus, which is the most common cause of death among viral hepatitis is a DNA virus⁽³⁾. Hepatitis C caused by enveloped RNA virus, is a major public health concern due to the frequency and severity as causes about 350,000 deaths^(4,5). According to a study on

Pakistani population published in 2009, the prevalence of HBV infection was 10% while HCV infection was 4–10%⁽⁶⁾.

Viral hepatitis (Hepatitis B or Hepatitis C) during pregnancy is associated with high risk of maternal fetal complications and a leading cause of maternal mortality⁽⁷⁾. The most common complications including premature contractions, placenta praevia, preterm delivery, placental separation, premature rupture of membranes, vaginal bleeding, preterm labor, and gestational diabetes mellitus⁽⁸⁾.

In a survey conducted on antenatal subjects in London, the prevalence of anti-HCV was 0.43% in Greater London, 0.21% in Northern and Yorkshire, 0.38% in inner districts of London and 0.20% in outer districts of London⁽⁹⁾. In the Democratic Republic of Congo, HCV

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among pregnant women was found to be 4.3% ⁽¹⁰⁾. In an Indian Study The seroprevalence of HCV antibody was 0.73% ⁽¹¹⁾. According to a study published in 2008, in Pakistan pregnant women, hepatitis B virus infections was 2.5% and hepatitis C virus infections was 6.7% ⁽⁶⁾.

A study found a prevalence of 3.27% of HCV in pregnancy ⁽¹²⁾.

In the view of all above findings the present study was designed to determine the frequency of HBsAg and anti-HCV in pregnant women.

MATERIAL & METHODS:

This study was carried out at Clinical Laboratory, Godhra Muslim Medical Centre, New Karachi, from February 2010 to January 2011. Total Five thousands one hundred and seventy two (n=5172) pregnant women, ages 15-45 years, attending antenatal care clinic were enrolled in the study. The verbal informed consent of the study was taken by the all pregnant females. Personal data such as age, marital status and possible risk factors to route of transmission of HCV were also obtained.

Table 1. HBs Ag AND HCV ANTIBODIES DATA OF PREGNANT WOMEN

Characteristics	HBs Ag		Anti HCV antibodies	
	Positive (n=90)	Negative (n=5082)	Positive (n=423)	Negative (n=4749)
15-20	7 (7.8%)	707 (13.9%)	39 (9.2%)	675 (14.2%)
21-25	12 (13.3%)	1703 (33.5%)	52 (12.3%)	1663 (35.0%)
26-30	17 (18.9%)	1169 (23%)	82 (19.4%)	1104 (23.3%)
31-35	19 (21.1%)	597 (11.75%)	89 (21%)	527 (11.1%)
36-40	16 (17.8%)	563 (11.08%)	77 (18.2%)	502 (10.6%)
41-45	19 (21.1%)	343 (6.75%)	84 (19.9%)	278 (5.8%)

INCLUSION/EXCLUSION CRITERIA:

Women with previous history of liver diseases, diabetes, toxemia, hypertension or declined to participate excluded.

Venous blood was collected in gel containing Vacutainer tube and centrifuge immediately for cell separation. Hepatitis B surface antigen and HCV antibodies were detected by Enzyme-Linked Immunosorbent Assay by commercially available third generation ELISA kits (ADVANCED HCV/HBsAg by **InTec PRODUCTS, INC.**, China). The initially reactive samples were re-tested in duplicate and considered ELISA positive if at least two of three results were reactive. Data were analyzed using SPSS 15.0 for windows. The means, percentages were calculated.

RESULT:

A total of five thousands one hundred and seventy two (n=5172) pregnant female were tested for HBsAg and anti HCV. These pregnant female were divided into 6 groups according to age (Table 1).

GROUP 1:

Out of seven hundred and fourteen (n=714) pregnant females between 15–20 years, 7 (7.8%) were HBsAg positive and 39 (9.2%) were Anti HCV positive (Table 1).

GROUP 2:

One thousands seven hundred and fifteen (n=1715) pregnant females between 20–25 years were included in this group having 12

(13.3%) HBsAg positive and 52 (12.3%) Anti HCV positive results (Table 1)

GROUP 3:

One thousands one hundred and sixty eight (n=1168) pregnant females between 26–30 years were in group 3 and 17 (18.9%) were HBsAg positive while 82 (19.4%) were anti HCV positive results (Table 1).

GROUP 4:

Six hundred and sixteen (n=616) pregnant females between 31–35 years were in this group, having 19 (21.1%) HBsAg positive and 89 (21%) anti HCV positive subjects (Table 1).

GROUP 5:

Out of five hundred and seventy nine (n=579) pregnant females (ages 36–40), 16 (17.8%) were HBsAg positive and 77 (18.2%) were anti HCV positive results (Table 1).

GROUP 6:

Three hundred and sixty two (n=362) pregnant females ages 41–45 were in this group having 19 (21.1%) HBsAg positive and 84 (19.9%) were anti HCV positive results as shown in Table 1.

Mean \pm SD age was 26.7 ± 4.8 years. The frequency of HBsAg positive was 90 (1.7%) and HCV found 423 (8.2%). Majority of the patients 1715 (33.16%) were in the age group 20–25 years (Table 1).

DISCUSSION:

Both Hepatitis B and Hepatitis C are the leading causes of morbidity, mortality and serious public health problem worldwide as well as in Pakistan ⁽⁶⁾

In Brazilian study 0.9% ⁽¹³⁾ and in Slovakian study on Roma population. 2.12% of pregnant females were HBsAg positive ⁽¹⁴⁾. In an Iranian study the prevalence of hepatitis B virus infections was 0.5% ⁽²⁾, while in Nigerian study Hepatitis B virus infection rate was high 8.2% ⁽³⁾. In various local studies frequency of Hepatitis B virus infections in pregnant women varies. In a study on pregnant women in

Karachi Hepatitis B virus infections was 0.34% ⁽¹²⁾, in a study in Swat Hepatitis B was 1.37% ⁽⁶⁾, in another local study 2.2% ⁽¹⁵⁾ in another study in Multan 4.60% ⁽¹⁶⁾ of antenatal populations were HBsAg positive. We found low prevalence of hepatitis B virus 1.74% infections in our study on antenatal subjects. In a study conducted at antenatal women in Birmingham, United Kingdom, the majority, 58% of HBV positive cases were in the 25–34 years-old age groups ⁽⁹⁾. In Nigerian study Women in the age group 25–29 years had the highest HBV infection rate ⁽³⁾. In rural area of district Swat Women in the age group 30–39 years had the highest HBV infection rate ⁽⁶⁾ and in our study it was high in age group 31–35 yrs.

According to a Swiss study published in 2007 the prevalence of HCV in pregnant women was 0.71% ⁽¹⁷⁾ whereas in a Spanish study published in 2011 it was 0.15% in pregnant women ⁽¹⁸⁾ which is very low as compare to our study. The situation was not too much different in two Brazilian studies where the prevalence of HCV in pregnant women was of 0.2% ⁽¹⁹⁾ and 10.7% ⁽²⁰⁾.

In Nigerian study on co infection of HIV and HCV among pregnant females anti HCV antibodies was 5% ⁽¹⁰⁾ and in a Egyptian study on pregnant women 8.6% were positive for HCV antibody ⁽²¹⁾ which is similar to our result while an Indian study showed very low prevalence of HCV 1.03% among pregnant females ⁽¹¹⁾. According to our results prevalence of HCV infection in pregnant women in Pakistan is 8.78% which was supported by two Pakistani studies on pregnant females 8% ⁽²²⁾ and 8.9% ⁽²³⁾. While in two other local studies 7.3% ⁽¹⁵⁾ and 7.00% ⁽¹⁶⁾ pregnant females were found to have anti-HCV positive. Whereas very low prevalence found in two studies 2.52% ⁽⁶⁾ and 2% ⁽²⁴⁾.

In our study the highest seroprevalence of anti-HCV was in the age group 21–25 years whereas it was high in the 25–29-year age-group in a Swiss study ⁽¹⁷⁾ and in a Nigerian study in the age group 30–34 ⁽¹⁰⁾. In local studies high HCV positive pregnant females were found in age groups from 25–35 years ⁽²³⁾ and 30–39 years ⁽⁶⁾

CONCLUSION:

There was a high frequency of anti-HCV than HBsAg among antenatal subjects. However further studies are needed to decipher the prevalence of anti-HCV and HBsAg infection among pregnant women. Public awareness regarding mode of transmission can decrease the risk and prevent mothers as well as babies. Vaccination remains the most effective preventive approach against HBV

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Good behavior towards people is equivalent to wisdom, to request politely is half of knowledge, and to ascribe to sound policies is half of one's livelihood.

Hazrat Umar
(Razi Allah Tala Anho)