

**Prevalence and risk factors of Hepatitis B among pregnant women.**

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**Abstract:**

**Introduction:** Globally Hep C virus (HBV) a public health problem account for 2 billion infection and 400 million of them were chronically infected<sup>1,2,3</sup>. In Pakistan prevalence among general population is 4.3 % with carrier rate 3-5% (7-9 million)<sup>4</sup>. The prevalence of HBV among pregnant women 5% (range 0.6% to >20%) worldwide, leading mother to child transmission causing fetal and neonatal hepatitis, attributed for 30% to 50% of chronic carriers.

**Methodology:** A cross-sectional study was conducted among randomly selected 140 pregnant women attended the antenatal clinic of the District hospital of Rahim-Yar-Khan in June-July 2013. Rapid diagnostic tests kits were used to access for HB surface antigen (HBsAg). A face to face interview was carried out by using structured pre-tested questionnaire to obtain demographic and other information.

**Results:** 16(9.3%) out of 140 pregnant women were found to be positive for HBsAg, higher risk age group was 20-29 years 10(62.5%) , 16(100%) out of 16 infected women and 6(4.83%) out of 124 non-infected women had Negative history of HBV in Husband. Blood transfusion in last pregnancy was 14(87.5%) out of 16 infected women and 52(41.93%) out of 124 non-infected women. 10(62.5%) out of 16 infected women and 5(4.03%) out of 124 non-infected women has passed through dental procedures. Therefore, negative history of HBV in Husband, blood transfusion and dental procedures in last pregnancy were the most prevalent risk factors among infected women. Among the total 124, 76(61.29%) were vaccinated against HBV, while 0(0%) out of 16 infected women were not vaccinated.

**Conclusion:**

Prevalence of the HBV among pregnant women in Rahim-Yar-Khan is of intermediate endemicity (11.4%). Past history of blood transfusion and HBV infected Husband was the most prevalent risk factor. Health education regarding risk factors, preventive measures should be given to pregnant women with the involvement of Lady Health Worker and mass media. Free screening and immunization of pregnant women should be incorporated in antenatal and postnatal program of hospital.

**Introduction:**

Hepatitis C is caused by hepatitis B virus (HBV) which is an envelope virus with double strand DNA that is related to hepadna virus. HBV is found in highest concentrations in blood and in lower concentrations in other body fluids (e.g., semen, vaginal secretions, and wound exudates). It estimated that about 5% of world populations are chronic carriers and nearly 25% of them develop serious complications as chronic hepatitis, liver cirrhosis and hepatocellular cell carcinoma, which result in more than one million death every year<sup>5</sup>. Transmission occurs mainly from a mother to child at time of parturition, as well as person-to-person (horizontal) transmission among children < 5 years of age<sup>6</sup>. Viral hepatitis during pregnancy is associated with high risk internal complications, has a high rate of vertical transmission causing fetal and neonatal hepatitis and it has been reported as a leading cause of maternal mortality in developing countries<sup>7,9</sup>. In Pakistan, viral hepatitis is endemic with non-periodic outbreaks, however, the prevalence varies from area to area and population to population due to variability in ethnicity and socioeconomic conditions<sup>10,11</sup>. Measures, such as general health education, proper screening of blood and blood products, adoption of universal precautions and screening for hepatitis B and C can help in arresting the vertical as well as horizontal spread of infection<sup>12,14</sup>

**Hepatitis B Virus in Pakistan**

There exists a limited knowledge in general population about epidemiological patterns of B prevalence in different communities of Pakistan<sup>15</sup>. In a study conducted on recruitment individuals from different areas of Pakistan the prevalence of HBV was reported to be of 3.2%<sup>16</sup>. Several seroprevalence studies have been conducted on blood transfusion populations. Prevalence

of HBV in pregnant women is significantly different in different regions of Pakistan, depending upon availability or absence of hygienic environment. According to various studies conducted on pregnant women, it has been reported that HBV prevalence range between 0.34% (minimum reported rate) to 12.62% (maximum reported rate)<sup>17,18</sup>. Although there exists an increased threat of viral infection among un-safe population, yet due to limited resources and awareness; only few studies have been reported from Pakistan. Majority of Pakistani population lives in rural areas as compared to urban areas. But unfortunately, up to date, no study has been reported from rural areas of Pakistan. According to HBV screening studies conducted in Islamabad, Lahore and Peshawar the prevalence of HBV was reported as 12.4%, 4% and 5% respectively<sup>19,20,21</sup>. In order to prevent future epidemic of HBV in Pakistan, many efforts are required from both government and public sector authorities. In Pakistan, various vaccination campaigns are being conducted with major emphasis on prevention of HBV infection in neonates. It has been reported by UNICEF-WHO that approximately 73% of Pakistani neonates were vaccinated against hepatitis B virus (WHO/UNIEF, 2011). Frequent vaccination programs should be conducted at national level for people from all age groups in order to decrease the future burden of disease.

**Results:**

16(11.42%) out of 140 pregnant women were found to be positive for HBsAg, higher risk age group was 20-29 years 10(62.5%), 16(100%) out of 16 infected women and 6(4.83%) out of 124 non-infected women had positive history of HBV in Husband. Blood infusion in last pregnancy was 14(87.5%) out of 16 infected women and 52(41.93%) out of 124 non-infected women.

10(62.5%) out of 16 infected women and 5(4.03%) out of 124 non-infected women has passed through dental procedures. Therefore, positive history of HBV in Husband, blood Transfusion and Dental Procedures in last pregnancy were the most prevalent risk factors among infected women. Among the total 124, 76(61.29%) were vaccinated against HBV, while 0(0%) out of 16 infected women were not vaccinated.

#### Discussion:

Viral hepatitis is a global issue and in Pakistan the situation is no different from that in the rest of the world. Routine antenatal hepatitis screening to prevent the vertical transmission of hepatitis is a controversial issue and hence it is not universally implemented. Nevertheless, hepatitis is considered to be an important public health problem for which reliable screening tests do exist. Treatment is contra - indicated during pregnancy due to the potential risks of the diagnostic procedure<sup>26</sup>.

A prevalence of 0.34% was previously reported in pregnant women<sup>27</sup>, while the prevalence in this study was found to be 11.42%. This difference in findings between the studies could be due to a lack of awareness, low socioeconomic conditions, an unhygienic environment, the different methods used for the screening of viral infection and differences in the geographical distribution among the countries. A previous study conducted in this region reported a 12% prevalence of HBV infection in pregnant women<sup>28</sup>, which is almost equal to that found in the current study. The present study was conducted in the Rahim-Yar-Khan district, which is located in the Punjab province of Pakistan where there are currently serious issues concerning the state of development, economy, socioeconomic status, infrastructure, and available facilities. Due to these limitations, the kit method was used for the detection of HBV infection in the studied population.

In the present study, hepatitis C infection among pregnant women was prevalent throughout the year. The application of appropriate screening methods, especially for those of child - bearing age, avoiding the transfusion of unscreened blood and blood products, use of disposable syringes, and education are all needed to improve the health status of pregnant women and their neonates, and appropriate monitoring is needed to control viral infections. Positive history of HBV in Husband, blood Transfusion and Dental Procedures in last pregnancy were the most prevalent risk factors among infected women. Preventive measures are determined by the epidemiological characteristics of the infection. Being mainly transmitted via infected blood and blood products, use of dirty syringes/razors, unsterilized instruments, sexual promiscuity, organ transplant, body tattooing and vertical transmission<sup>22,24</sup> primary preventive measures such as creating awareness about the mode of spread of these infections, use of sterilized instruments, disposable

syringes, properly screened blood and blood products, avoidance of unnecessary transfusions and adoption of universal precautions by the health care professionals can remarkably help in controlling the spread of these infections<sup>22-24</sup>

#### Conclusion:

Prevalence of the HBV among pregnant women in Rahim-Yar-Khan is of intermediate endemicity (11.4%). Past history of blood transfusion and HBV infected Husband was the most prevalent risk factor. Health education regarding risk factors, preventive measures should be given to pregnant women with the involvement of Lady Health Worker and mass media. Free screening and immunization of a pregnant women should be incorporated in antenatal and postnatal program of hospital.

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