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Seroprevalence of Hepatitis-B virus and Hepatitis-C virus in pregnant women in Hyderabad.

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Abstract:

Introduction: Infections of the hepatitis B virus (HBV) and the hepatitis C virus (HCV) are major global public health problem. Approximately 350 million and 190 million people worldwide are infected with HBV and HCV respectively.

Objective: To evaluate seroprevalence of hepatitis B and C among pregnant women of Hyderabad.

Methodology: This prospective cross sectional study conducted at Pathology department of a tertiary care hospital of Hyderabad during Jan 2019 to July 2019. During period of study data of 500 pregnant women recorded on pre structured proforma after taking informed consent. Causes of hepatitis other than B or C virus were excluded. Status of HCV and HBV was confirmed using Elisa method.

Results: showed 7% seropositivity for HCV and 4.2% for HBV among pregnant women.

Conclusion: Among pregnant females, in Hyderabad there is a higher seropositivity of anti HCV antibodies as compared to HBsAg. Both seropositivity to HBV and HCV was found to be more prevalent in the 30-39 year age group.

Keywords: Pregnant women, Hyderabad, Seroprevalence HCV, Seroprevalence HBV.

Introduction:

Hepatitis B virus (HBV) and Hepatitis C virus (HCV) infections are a major public health problem worldwide. HBV is 50-100 times more infectious than HIV¹. About 350 million and 190 million persons globally are infected with HBV and HCV respectively and are at high risk of death from active hepatitis, liver cirrhosis and hepatocellular carcinoma².

Hepatitis B is the most common viral infection affecting more than 300 million worldwide. Hepatitis C prevalence according to WHO estimates in 3% of world population (200 million)³. Recently, the Pakistan medical research council (PMRC) conducted a national survey on the prevalence of hepatitis B and C among the general population of Pakistan. The preliminary reports reveal that the prevalence of HBsAg and Anti HCV infection is 2.5% and 4.9% respectively. The overall level of positivity for both viruses is 7.4%, indicating that there are 12 million infected people in Pakistan⁴.

Hepatitis B and C infections are transmissible both vertically, from mother to fetus and horizontally via blood products and

body secretions⁵. The risk of disease transmission is high among IV drug abusers, homosexuals, health professionals with needle stick accidents and patients on dialysis. Also poverty, illiteracy and poor hygienic conditions in our country add to the prevalence of HBV and HCV infection⁶. Pregnant females are a high risk group for these infections, especially multiparous females due to previous hospitalizations, blood transfusions and multiple injections⁷.

We are lacking sufficient recent statistics that highlight the disease burden. There is hence, a dire need to investigate the current prevalence so as to promote early diagnosis and prompt treatment, thereby preventing many serious consequences. We conducted this study with an objective to assess the seroprevalence of Hepatitis B and C among pregnant ladies of Hyderabad with special reference to age distribution and socioeconomic status. Our findings may be useful for health care planners for evidence-based interventions. This is important for the safety of the patients.

Objective:

We conducted this study with the goal of evaluating the seroprevalence of hepatitis B and C among Hyderabad's pregnant women, with particular regard to age distribution and socioeconomic status.

Methodology:

The study was conducted in the department of Pathology in a tertiary care hospital Hyderabad from January 2019 to July 2019. This was cross sectional descriptive study carried by non-probability sampling technique. The convenient sampling method was used in which the selection of the sample was based on the early accessibility of the pregnant women during the study period. A total 500 pregnant women attending this hospital, during the data collection period were the source population. The data regarding age, socioeconomic status were recorded on the pre structured questionnaire, approved by the hospital's ethical review committee. Informed consent was obtained from all patients and appropriate confidentiality was maintained throughout the study. Cases of hepatitis other than Hepatitis B and C were excluded. Women with Hepatitis B and C status were confirmed using ELISA technique.

The collected data was analyzed using Microsoft Excel 2010. The data was organized and summarized in terms of frequencies and the results of the study were presented in a descriptive measure such as tables and graphs.

Results:

Total of 500 females were included in this study with a mean age of 30.7±5.956 years. Out of these 500 pregnant women, 21 (4.2%) were found to be HBsAg positive and 35 (7%) were found to be anti HCV positive. The combined frequency of hepatitis B and C was found to be 56 (11.2%). Majority of our patients were positive for HBV 10 (8.84%) and HCV 12 (9.52%) were within the ages of 30-39 years. Most of the patients, 255 (71%), were belong to lower class. The results are depicted in table 1 and 2

Table No 1. Age Groups.

Characteristics	Total study participants (% out of 500)	HBsAg +ve (% out of total participants in each group)	Anti HCV +ve (% out of total participants in each group)
Age (Years)			
< 20	3 (0.6%)	0	0
21-24	84 (16.8%)	1 (1.19%)	1 (1.19%)
25-29	136 (27.2%)	3 (2.2%)	2 (1.47%)
30-34	126 (25.2%)	6 (4.76%)	12 (9.52%)
35-39	113 (22.6%)	10 (8.84%)	5 (4.42%)
>40	38 (7.6%)	0	3 (7.89%)
Total	500	20 (4%)	26 (5.2%)

Table 2: Socioeconomic Condition.

Characteristics	Total study participants (% out of 500)	HBsAg +ve (% out of total participants in each group)	Anti HCV +ve (% out of total participants in each group)
Socioeconomic Status			
Upper class	18 (3.6%)	0	0
Middle class	127 (25.4%)	6 (4.72%)	8 (6.29%)
Lower class	355 (71%)	16 (4.50%)	16 (4.50%)
Total	500	22 (4.4%)	24 (4.8%)

Discussion:

Viral hepatitis is a global issue and in Pakistan the situation is not different from that in the rest of the world. Routine antenatal hepatitis B and C screening to prevent the vertical transmission of hepatitis C is a controversial issue and hence it is not universally implemented.⁴

In particular, the pregnant females have been focused on due to the alarming complications, affecting both the mother and the new born. The liver dysfunction in expecting mothers is most probably attributed to these deadly viral infections⁶. We conducted this study, to find the seroprevalence of HBsAg and anti HCV antibody in apparently healthy pregnant females visiting antenatal clinic at tertiary care hospital Hyderabad.

Our results heralded a 7% seropositivity of anti HCV in pregnant females which was significantly higher than a study carried out by Sania et al in Swat (2.52%)⁸, Romana et al Lahore (4.49%)³. It was comparable to a study conducted in Multan (7%)⁹ and PIMS hospital Islamabad (7.4%)⁷, but much lower than in Karachi (13.3%)⁵.

When compared internationally, our results were lower as compared to the studies conducted by Ephraim et al in Ghana and Murad et al in Yemen where it was found to be 7.7% and 8.5% respectively.^{10,11}

On the other hand, our study revealed a seroprevalence of HBsAg in 4.2% of the pregnant females. This was near similar to a study held at Multan Yielded 4.6%⁹. Few studies show lower prevalence rate such as in Swat and Islamabad with seroprevalence of 1.37% and 1.9% respectively.^{7,8}

Various studies carried out in different parts of the world showed higher prevalence of hepatitis B as mentioned afore. Studies carried out in Ghana, Yemen, Sudan showed seroprevalence of HBsAg as 9.5%¹⁰, 10.8%¹¹ and 5.6%¹² respectively, all of which were significantly higher as compared to our study.

In our study majority of the HCV as well as HBV positive women fell within the age group of 30-39 years. Our results were quite similar to the results of Aleena et al in Rawalpindi.⁶ This might be attributed to multiple pregnancies, hospitalizations, blood transfusions in our set up.

Despite all the efforts done, our study had a few constraints. Firstly, we included only those female who could approach a antenatal care facility, which might have masked the actual prevalence in the area under study. Also the patients who seek private health care services were not included in our study. Therefore, the results cannot be generalized to all the population of Hyderabad as a whole but still represent a large population. In this regard, a community based survey with large sample, including the female visiting the private set up in addition to public facilities is strongly recommended in the future. It is known that a number of people in our community are victimized only because they are illiterate and non affording, so they have to seek the sub-standard health facilities offered by the Quacks. Hence fourth, steps are to be taken to improve the knowledge and awareness of population regarding this important health issue. Although routine antenatal screening is being carried out for the detection of such case in Pakistan and there are programs available for vaccination of all neonates against hepatitis B. blood and blood products should be screened for HBV and HCV before transfusion. Moreover, all the pregnant females who are seronegative for HBsAg should be vaccinated to minimize the risk of vertical transmission.

Conclusion:

There is a higher seropositivity of anti HCV antibodies as compared to HBsAg in pregnant females of Hyderabad. Both HBV and HCV seropositivity was found to be more common in the age group of 30-39 years.

Conflict of interest: Authors have no conflict of interest

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