



## PREVALENCE OF HIV, HCV, HBV IN PREGNANT WOMEN COMING FOR DELIVERY IN A TERTIARY CARE CENTRE BASED IN AN AREA BELONGING TO NORTH INDIAN HIMALAYAN REGION

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### ABSTRACT

**OBJECTIVES-** This study was carried out to investigate the prevalence of HIV, HBV and HCV infection with in an obstetric population in Uttarakhand and also to analyze about the mode of delivery

**METHOD-** It was a retrospective study which was conducted by analyzing the data of pregnant patients who delivered in dept. of obstetrics and gynecology Govt. Medical college, Haldwani over a period i.e. feb 2015 to feb 2018. All the patients who delivered were screened for HBsAg, Anti HIV Abs and Anti HCV Abs. A total of 10,500 pregnant patients delivered during this period in our institution.

**RESULT-** It was observed that 18 tested positive for HIV (0.17%), 75 were positive for HBsAg (0.71%) and 61 were positive for HCV (0.58%). Of the total viral marker positive patients 57% delivered vaginally and 43% delivered by cesarean section.

**CONCLUSION-** The prevalence of HCV is rising with no associated significant risk factors and to prevent HCV from becoming a health problem a universal screening approach should be adopted especially for pregnant women in a view of risk of mother to child transmission.

### KEYWORDS :

### INTRODUCTION

Among the blood-borne viruses transmissible through the parenteral route, by blood transfusion as well as sexual intercourse, Human immunodeficiency virus (HIV-1/2), Hepatitis B virus (HBV) and Hepatitis C virus (HCV) are important and have several implications. Not only do they establish asymptomatic persistent infections with occasional sequelae, but they also cause significant morbidity and mortality when transmitted through transfusion of blood and blood products(1). Chronic infections with HIV, HBV and HCV are major public health problems.

HCV infections is asymptomatic in a large proportion of cases (65-75%) and revealed only accidentally by abnormal liver function tests and/or Anti HCV positivity. The long-term morbidity and mortality is far greater than its counterpart Hepatitis B in terms of chronic active hepatitis (70%), cirrhosis (20-30%), hepatocellular carcinoma and liver failure(1).

Little is known about Hepatitis C virus infection in pregnant women in India. The seroprevalence of Anti HCV Antibody in the healthy general population of India was found to be 1.5% each in 234 voluntary blood donors and 65 pregnant women(2). HCV infection was not detected in 250 randomly selected antenatal women in Shimla (Himanchal Pradesh)(3,4).

The world-wide literature on the viral prevalence has increased considerably over the past decade, yet few surveys have been conducted on national level. HCV in antenatal clinic attenders in Greater London and Northern and Yorkshire region was found to be 0.35 (of 25938 women) and 0.21% (of 16675 women) respectively(5). The HCV prevalence of 0.38 and 0.20 percent were seen in inner and outer districts of London respectively(6). There are very few largescale studies on the estimates of the prevalence and risk behaviors of these viral infections in Indian population. We therefore undertook this study to assess the prevalence of HIV, HCV and HBV infection with in an obstetric population coming for delivery in the obs and gyne dept. of Govt. Medical college, Haldwani, Uttarakhand.

### MATERIAL AND METHODS

It was a retrospective study which was conducted by analyzing the data of pregnant patients who delivered in the Department of Obstetrics and Gynecology at Government Medical College, Haldwani, Uttarakhand over a period from feb 2015 to Feb 2018. All pregnant patients admitted for delivery were scanned for HBsAg, Anti-HIV Abs and Anti HCV Abs. A total of 10,500 pregnant patients delivered during that period. Assuming the average of HCV, HIV and HBsAg infections in our country, it was estimated that the Pregnant

women will reflect the truthful and genuine results. Anti HCV and Anti-HIV Abs were detected by commercially available third generation ELISA diagnostic Kits. They were initially retested in duplicate and considered ELISA positive if at least two or three tests results were reactive. A note was made of how many of these viral marker positive patients delivered vaginally or by cesarean section. Only two of these patients were also found to be positive for more than one viral marker.

### RESULTS

There were total 10,500 deliveries during the mentioned duration. The results were shown below:

- 156 (1.48%) were found to be positive for either of the three viral markers.
- 18 (0.17%) were tested positive for Anti-HIV Abs
- 75 (0.71%) were HBsAg positive
- 61 (0.58%) were found to be Anti HCV Abs positive
- Two of these patients were positive for more than one viral marker (0.02%).

The mean age of the study group was  $20.6 \pm 8.2y$ .

The mean parity of the study group was  $1.2 \pm 0.8 (7)$ . Of the total 156 patients

- 57% delivered vaginally and
- 43% delivered by cesarean section

### DISCUSSION

This above study represents a large -scale, single hospital-based report to define the seroprevalence of hepatitis C, B and HIV virus in Urban Population of pregnant patients coming for delivery. The seroprevalence of hepatitis C Antibodies of 0.58% in our study group was less than finding of other epidemiologic studies (1-5%) (1,8-11). The prevalence of the infection is more in reproductive age and increases with age up to 40 years and decline (12). But in our study due to lack of much older people it was not possible to prove this relation. Leikin et al (13) have reported higher mean parity of HIV positive patients in their study. In the United States, the prevalence of HBV infection in pregnancy is 0.2 to 6% with rate varying by race and ethnicity, more in Asian and African Americans (14). Whereas in our study group the prevalence was much less (0.71%). A recent study conducted regarding Sub-Saharan African region showed decline in HIV prevalence among pregnant women from 6.5% to 5.3% and decline was found to be more in pregnant women in comparison to non-pregnant (15). Another study conducted from 1993 to 2008 showed over all prevalence of HIV positive case in pregnancy to be 1-4% and from 2004, the prevalence was found to be decreased to 0.6% (16). In our study group the prevalence of HIV

was found to be 0.17% which was in comparison very less. Some studies show that in HIV-infected pregnant women, the seroprevalence of HCV is 17-54% (17), But no such cases were reported in our study.

Of the total viral marker positive pregnant women 57% delivered Vaginally and 43% delivered by cesarean section. Although the prevalence of vaginal delivery was more than in cesarean section, there is very little evidence that cesarean prevents viral transmission from mother to child. Current guidelines do not recommend cesarean section to decrease the risk of MTCT in pregnant women with chronic HBV infection (18). There are no randomized control trial of cesarean section Vs vaginal delivery for prevention of MTCT of HCV, so from the data it is observed that there is no need for doing C-section to prevent MTCT in pregnancies with AntiHIV Abs, HBsAg and AntiHCV Abs positive status.

Also in our study the prevalence of HIV positive cases (0.17%) was found to be less in comparison to HBV positive (0.71%) and HCV positive (0.58%) cases. A study conducted by combining different data from all different studies all over the world showed that a combined pooled prevalence of HIV, HBV and HCV to be 1%, 7.5% and 2% (19).

## CONCLUSION

The prevalence of HCV is rising with no associated significant risk factor. HCV can become a big health problem in future and its prevalence is found to be more in reproductive age group. So it is important that instead of selective screening targeted towards high risk cases, a universal screening should be adopted for HCV, especially in pregnant women. Further research is necessary to understand the causes and implications of this observation and to give future directions.

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