

# Prevalence of Hepatitis C in Pregnant Women at Tertiary Care Hospital

HAJIRA<sup>1</sup>, SHAHANA ATIQ<sup>2</sup>, ZAKKIA KHAN<sup>3</sup>, RADHIA KHAN<sup>4</sup>, AMJAD HUSSAIN<sup>5</sup>, GHAZALA SHAHEEN<sup>6</sup>, TAHIRA SHAMIM<sup>7</sup>, LAILA SUMREEN<sup>8</sup>

<sup>1</sup>Medical Officer, Department of Obstetrics and Gynaecology, District Headquarter Hospital, Landi Kotal

<sup>2</sup>Medical Officer, Department of Obstetrics and Gynaecology, Women and Children Hospital, Charsadda

<sup>3</sup>Associate Professor, Department of Gynaecology, Women and Children Hospital, MTI, Bannu, Pakistan

<sup>4</sup>Assistant professor of Biochemistry, Bannu Medical College, Bannu

<sup>5</sup>Department of Eastern medicine, Faculty of pharmacy and health sciences, University of Balochistan Quetta, Pakistan

<sup>6,7</sup>Department of Eastern Medicine and Surgery, University College of Conventional Medicine, The Islamia University of Bahawalpur

<sup>8</sup>Department of Homoeopathic Medical Sciences, University College of Conventional Medicine, The Islamia University of Bahawalpur.

Corresponding author: Shahana Atiq, Email: [shahna.atiq@yahoo.com](mailto:shahna.atiq@yahoo.com)

## ABSTRACT

**Background:** Hepatitis caused by viruses is a serious worldwide health issue that affects 2 to 15 million individuals annually. HCV-infected mothers give birth to an approximately 40,000 children annually, resulting in up to 4000 additional perinatal infected offspring

**Methodology:** This was cross sectional study carried out at Obstetrics and Gynaecology, Department, Women and Children Hospital, Charsadda for a period of six months from August 2021 to January 2022. Totally 300 pregnant women were included in our study. Blood samples were taken from all the participants and sent to hospital diagnostic laboratory for the diagnosis of hepatitis C virus through immune-chromatographic technique. All the data analysis was carried out by using IBM SPSS version 20.

**Results:** The mean age in our study was 33.12 years with standard deviation of  $\pm 4.11$ . In our study, hepatitis C virus prevalence was 8.66% (n=26) in pregnant women. In our study, 17 (18.18%) of the HCV positive subjects were observed in age group 18-25 years. While the HCV positive subjects observed in age group 26-35 years, 36-45 years were 6 (4%) and 2 (3.33%) respectively.

**Conclusion:** Our study concludes that the prevalence of hepatitis C amongst pregnant women was 8.66%. Despite the fact that the incidence of hepatitis C was shown to be lower among pregnant females visiting tertiary care hospitals, regular anti-HCV antibody testing of all pregnant females is strongly recommended for prompt identification of illness in mothers and to prevent their transmission to newborns.

**Keywords:** Prevalence; Hepatitis C; Pregnant Women

## INTRODUCTION

Hepatitis caused by viruses is a serious worldwide health issue that affects 2 to 15 million individuals annually. 400 million individuals worldwide are infected with the hepatitis B virus and 200 million individuals around the world are afflicted with the hepatitis C virus<sup>1</sup>. The condition in Pakistan is worse as compared to industrialized country in the globe. HBV and HCV are the most common hepatitis viruses in this area, and as a result, they necessitate substantial investigation. Researchers have performed a countrywide study to determine the incidence of hepatitis B and hepatitis C in general population of Pakistan. According to early studies, the infection rates of hepatitis B was 2.5% and for hepatitis C was 4.9%. As many as 12 million Pakistanis are infected with both viruses, based on the 7.4% overall positive rate for both the viruses<sup>2</sup>.

Hepatitis B and C sexual transmission has also been documented. Many nations have already implemented comprehensive blood screening measures, reducing the danger of such viruses spreading via blood transfusion<sup>3</sup>. The probability of transmission of HCV from infected mothers to newborns is 3.2%, but this risk increases to 7.9% if the mother is also HIV-positive<sup>4,5</sup>. It can also cause chronic hepatitis, cirrhosis, and liver cancer when people have both HBV and HCV<sup>6-9</sup>. The development of reliable HCV screening tools has reduced the frequency of hepatitis C infection cases in children who have had blood transfusions. Childhood infection with HCV, on the other

hand, has become one of the most prevalent mechanisms of transmission by maternal-infant transmission. HCV is also spread by drug injections, medical equipments with poor sanitation, unprotected blood transfusions, and perinatal transfer<sup>10</sup>.

HCV-infected mothers give birth to an approximately 40,000 children annually, resulting in up to 4000 additional perinatal infected offspring<sup>11,12</sup>. Pregnancy has no effect on the hepatitis C course of illness. The biochemical indicators of damage to liver in HCV positive women improved throughout pregnancy, according to several researches. Due to the fact that the levels of transaminase reverted to levels of pre-pregnancy quickly after birth, this trend was seen during hemodilution in pregnancy. Variations in the immune reaction during pregnancy, on the other hand, may play an important role in the HCV relationship. Antenatal HCV testing is a major source of concern across the world in order to avoid vertical transmission. Infection with HCV is a severe public health issue for which there are viable screening tests. During pregnancy, viral hepatitis is linked to a significant risk of maternal problems. It is the primary cause of maternal mortality and has a significant risk of vertical transmission. The current research was carried out to assess the hepatitis C infection prevalence in pregnant women at tertiary care hospitals.

**MATERIALS AND METHODS**

This cross sectional study was carried out at the department of Obstetrics and Gynaecology, Women and Children Hospital, Charsadda. The duration of study was six months from August 2021 to January 2022. The study approval was taken from institutional ethical and research committee. WHO sample size calculator was used for determination of sample size. To select the participants, non-probability convenient sampling was employed. The criteria for inclusion in our study include all the pregnant women, having age 18-45 years attending the hospital for their routine checkup. The criteria for exclusion were all the non-pregnant women and women not willing as participants in our study. Totally 300 pregnant women were included in our study. A written informed consent was taken from all the subjects. All the information like age, previous transfusion history, previous history of surgeries and delivery through vagina was collected on a pre-designed Performa. Blood samples were taken from all the participants and sent to hospital diagnostic laboratory for the diagnosis of hepatitis C virus through immunochromatographic technique. All the data analysis was carried out by using IBM SPSS version 20. Age was documented as mean and standard deviation while categorical variable like HCV test was shown as frequency and percentage.

**RESULTS**

A total of 300 pregnant women were diagnosed for hepatitis C virus in our study. The mean age in our study was 33.12 years with standard deviation of  $\pm 4.11$ . The minimum age of our subjects was 18 years and maximum age was 43 years. The age wise distribution of the participants is given in figure 1. In our study, hepatitis C virus prevalence was 8.66% (n=26) in pregnant women. (Figure 2) In our study, 17 (18.18%) of the HCV positive subjects were observed in age group 18-25 years. While the HCV positive subjects observed in age group 26-35 years, 36-45 years were 6 (4%) and 2 (3.33%) respectively. (Table 1

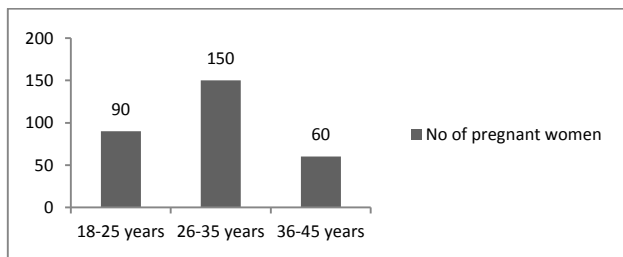


Figure 1: Distribution of subjects based on age

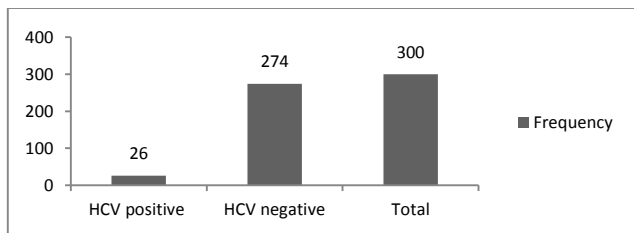


Figure 2: Overall frequency of hepatitis C in pregnant women

Table 1: Age wise distribution of HCV positive cases in pregnant women

Age group	HCV positive cases n (%)
18-25 years	17 (18.18%)
26-35 years	6 (4%)
36-45 years	2 (3.33%)

**DISCUSSION**

In under developed countries like Pakistan, Hepatitis C is endemic problem. Numerous studies reported that the sero-prevalence of HCV in developing countries is 20 fold high as compared to developed countries<sup>13-15</sup>. In Pakistan, the overall HCV prevalence in pregnant women ranged from 4%-25%<sup>16</sup>. Our study was conducted with the objective to assess the HCV prevalence in pregnant women at tertiary care hospital. In our study, hepatitis C virus prevalence was 8.66% (n=26) in pregnant women. A previous review study in 2002 from Pakistan carried out by Shah and Shabbir reported that the HCV prevalence in pregnant women was ranged from 0.7% to 20%<sup>17</sup>. A study carried out by Shirazi and colleagues in Karachi reported higher prevalence of hepatitis C as compared to our study. They reported hepatitis C prevalence of 9.2% in pregnant women<sup>18</sup>. A study carried out in 2007 by Kumar et al. reported a remarkably very low prevalence of HCV in pregnant women as compared to our study. They reported 1.03% prevalence of HCV in pregnant women<sup>19</sup>. In accordance with our findings, an earlier study in Japan reported almost similar prevalence (7.1%) of HCV in pregnant women<sup>20</sup>. In contrary to our findings, very low prevalence (2.4%) of HCV was reported amongst pregnant women in Turkey<sup>21</sup>. In our study, 17 (18.18%) of the HCV positive subjects were observed in age group 18-25 years. While the HCV positive subjects observed in age group 26-35 years, 36-45 years were 6 (4%) and 2 (3.33%) respectively. A study done by Gul N et al. in Pakistan also reported high HCV prevalence amongst pregnant women in age group 18-30 years<sup>22</sup>. Another study also reported similar results to our study. They reported high prevalence of HCV in pregnant women of age group 18-30 years<sup>23</sup>. Another study from Pakistan reported high prevalence in age group 30-39 years<sup>24</sup>. Different risk factors are associated with the high prevalence of hepatitis C virus in pregnant virus. In Pakistan, according to Janjua et al., injection misuse is quite widespread, and most parenteral drugs are administered using previously used equipment. Other studies support the findings of poor infection control and non-compliance with universal precautions in primary care settings<sup>25</sup>.

A prior surgery surgery was shown to be the most important risk factor for HCV infection by Farhana et al<sup>26</sup>. Another research done at Shifa International Hospital Islamabad reported that the most important risk factors include prior surgical procedures and blood transfusions<sup>27</sup>. HCV screening in regular prenatal clinics is not consistently practiced, although it should be done during antenatal visits in underdeveloped countries owing to a limitation of healthcare facilities and healthcare worker training. In light of this scenario, it seems that increased efforts to raise awareness about prevention of hepatitis C and early therapy are required immediately.

## CONCLUSION

Our study concludes that the prevalence of hepatitis C amongst pregnant women was 8.66%. Despite the fact that the incidence of hepatitis C was shown to be lower among pregnant females visiting tertiary care hospitals, regular anti-HCV antibody testing of all pregnant females is strongly recommended for prompt identification of illness in mothers and to prevent their transmission to newborns.

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