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## Research Article

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### SEROPREVALENCE OF HCV INFECTION AMONG PREGNANT WOMEN IN A RURAL TEACHING HOSPITAL, SANGAREDDY

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#### ABSTRACT

**Objectives:** To determine the prevalence of hepatitis C infection among the patients attending antenatal clinic (ANC) of a rural teaching hospital, Sangareddy.

**Materials and Methods:** A total of 1381 serum samples were gathered from pregnant women attending the antenatal clinic during the period from January 2015 to December 2015.

**Results:** Among 1381 pregnant women, only 3 women were seropositive for HCV. The prevalence of HCV in this study was 3 (0.21%). Among affected 0.44% was belongs to an urban area, 0.17% belonged to a rural area. Among affected women 0.19% was housewives and 0.54% was daily workers. The recorded age range was 18 to 45 years-old. The distributions of seropositive cases of HCV were two in age between 21-30 years, one in age between 18-20 years.

**Conclusion:** Hepatitis C seroprevalence among pregnant women in this region is low; it is still advisable for pregnant women to be screened for HCV. So more studies are required to identify risk factors, the importance of HCV and treatment programs. So increasing awareness of transmission and regular screening for HCV among pregnant women is recommended.

**Keywords:** Hepatitis C (HCV), Blood borne pathogen, Antenatal clinic (ANC).

#### INTRODUCTION

Worldwide, Hepatitis C virus (HCV) infection is one of the major health problems. HCV infection that attacks the liver and can cause acute and chronic hepatitis, liver cirrhosis and liver cancer. According to World Health Organisation (WHO), every year 4 million people are newly infected and about 170 million people are chronically infected with HCV. More than 350,000 deaths are occurring every year due to related complications of HBV, including liver cancer and liver cirrhosis [1,2,3]. Worldwide, the prevalence of HCV infection varies from country to country and even in the same country,

from region to region. According to WHO, Africa had the highest seroprevalence with 5.3%, followed by Eastern Mediterranean (4.6%), Western pacific (3.9%), South-east Asia (2.15%) and low prevalence of infection are observed among the North America (1.7%) and Europe (1.03%) [4-8]. In India, the prevalence of HCV is 1-2% [9].

HCV is a blood borne pathogen; about 75- 85 % patients with HCV will develop chronic infection and about 10 – 15 % develop liver cirrhosis. Mother to child transmission rate of HCV has been estimated around 5%. Complications of HCV during pregnancy associated with premature contractions,

placental separation, preterm delivery, vaginal bleeding, gestational diabetes mellitus and mortality [10,11,12].

The present study aimed to assess the seropositivity of hepatitis C virus among pregnant women visiting antenatal clinic (ANC) in a rural teaching hospital at Sangareddy, Telangana State.

#### METHODS AND MATERIALS:

The present study was conducted in MNR Medical Collage & Hospital situated in Sangareddy, part of Medak District, Telangana state (600 beds teaching hospital catering to rural population). A total of 1381 serum samples were obtained from pregnant women attending the antenatal clinic during the period from January 2015 to December 2015.

5 ml of venous blood was collected from the anti-cubital vein from each pregnant woman, placed in a plain sterile bottle. Serum was obtained allowing centrifugation. All the serum samples were tested for the qualitative detection of Anti-HCV by using a rapid chromatographic immunoassay test kit by (Genomix Molecular Diagnostics Pvt. Ltd, Kukatpally, Hyderabad). All Anti-HCV reactive samples were confirmed by using Enzyme-linked immunoassay kits for anti-HCV (Micro ELISA 3rd generation, J. Mitra & Co. Pvt. Ltd, New Delhi, India). The above investigations were carried out according to manufacturer's instructions.

#### RESULTS

A total 1381 pregnant women attending antenatal clinic were examined in this study. The recorded age range was 17- 45 years old and the age frequency distribution of infection is shown in table 1. Results show that seroprevalence of HCV infection 02 (0.31%) in the age group 21 – 30 years .Lowest prevalence was recorded in the 18-20 age group, 01(0.23%) and none in the age group 31-45. Out of 1381 samples, 03(0.21%) were reactive; while the others were nonreactive for HCV. Out of the 03 (0.21%), women were reactive for Anti-HCV, 01 were belonged to an urban area, while the remaining 02 were belongs to a rural area is shown in table 2.

#### DISCUSSION

In the present study among 1381 pregnant women 03(0.21%) were positive for HCV. Among affected 01(0.44%) are belongs to urban and 02(0.17%) belongs to a rural area.

Globally, infections due to hepatitis C (HCV) and hepatitis B (HBV) became one of the major and significant health problems. Worldwide, among pregnant women hepatic dysfunction is a common problem caused by viral hepatitis. According to the National centre for disease control (NCD) prevalence of HCV in India is 1% [13] and WHO revealed that the prevalence of HCV is categorized and graded as

**Table 1:** Hepatitis-C prevalence in pregnant women in different age groups

Hepatitis-C prevalence in pregnant women in different age groups			
Age in Year	Number of samples screened for HCV (%)	HCV sero-reactivity (%)	
		Reactive (%)	Non-reactive (%)
18-20	417(30.1%)	01(0.23%)	416(99.77%)
21-30	638(46.19%)	02(0.31%)	636(99.69%)
31-40	307(22.23%)	00(0%)	307(100%)
41-45	19(1.37%)	00(0%)	19(100%)
Total	1381(100%)	03(0.21%)	1378(99.79%)

**Table 2:** HCV sero-reactivity in patients according to their demographic status

HCV sero-reactivity in patients according to their demographic status.			
Characteristic	Number (n=) & Percentage (%)	Syphilis sero reactivity (%)	
		Reactive (%)	Non-reactive (%)
<u>Residence</u>			
Urban	225 (16.30%)	01(0.44%)	224(99.56%)
Rural	1156(83.70%)	02(0.17%)	1154(99.83%)
<u>Occupation</u>			
House wife	1044	02(0.19%)	1042 (99.81%)
Govt. Employee	66	00(00%)	66(100%)
Students	54	00(00%)	54(100%)
Health Professional	34	00(00%)	34 (100%)
Daily workers	183	01 (0.54%)	182(99.46%)

high (>3.5%), moderate (1.5%-3.5%) and low (<1.5%)<sup>(14)</sup>.

The present study showed that the prevalence of HCV was 5 (0.21%), which is very low compared to the prevalence reported in Egypt by E.-S. Mortada et. al (8.6%)<sup>(15)</sup>, Yemen by E. A. Murad et. al (8.5%)<sup>(16)</sup>, Burkina Faso by M. T. Zeba et. al (2.14%)<sup>(17)</sup>, and by Motlagh Me et al. in Ahvaz (6.25%)<sup>(18)</sup>, Kumar et.al in India (1.03%)<sup>(19)</sup>. Similar prevalence rate reported by Gardenal et. al in Brazil (0.20%)<sup>(20)</sup>, Rudrapathy et. al (0.19%)<sup>(21)</sup>, Mehta et al. (0.19%)<sup>(22)</sup>, respectively.

In our study, majority of HCV - positive patients belonged to the age group of 21- 30 years, which is similar to the findings of Baye Gelaw Tarekegn et. al<sup>(23)</sup>. Almost similar data showed by Rudrapathy et. al<sup>(21)</sup> in their study.

In the present study among the patients 01 (0.44 %) of affected patients belongs to the urban area and 02 (0.17 %) of affected patients related to rural areas. Similar findings are reported by Ahmad I et al. where prevalence is greater in rural than urban, due to lack of knowledge about precautions, poverty, less awareness regarding the transmission and causative agent<sup>(24)</sup>. Among affected women 2 (0.19%) are housewives and 1 (0.54%) are daily workers. According to Taseer et. al study revealed seropositivity of HCV in housewife 7.07%<sup>(25)</sup>.

#### CONCLUSION:

In conclusion, Hepatitis C seroprevalence among pregnant women in this region is low; it is still advisable for pregnant women to be screened for HCV, because the disease is preventable, and it will help to eliminate the adverse effects of untreated HCV. Early diagnosis of disease in antenatal period is helpful for proper patient management and initiation of treatment to prevent transmission of HCV to newborns. More studies are required to identify risk factors, the importance of HCV and treatment programs. Because most of the pregnant women are asymptomatic, they might not be aware of infection and they can transmit their infection to a newborn. So increasing awareness of transmission and regular screening for HCV among pregnant women is recommended.

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**Conflict of Interest:** Non to Declare.

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