

## Seroprevalence of hepatitis C virus (HCV) in health care workers of a tertiary care centre in New Delhi

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**Hepatitis C virus (HCV) is a parenterally transmitted virus that poses an occupational hazard to the health care workers (HCWs). No significant data are available regarding the prevalence of HCV in health care workers in India. The present study was designed to determine the seroprevalence of HCV infection in health care workers in a tertiary care centre in New Delhi. The subjects (n=100) were divided according to the duration of employment and the unit where they were working. Blood samples were collected from all the subjects and sera were tested for anti-HCV antibodies. The seroprevalence of anti-HCV was found to be 4 per cent. The duration of occupational exposure was not a significant risk factor for HCV infection and prevalence of anti-HCV antibodies were highest in HCWs working in haemodialysis units. The seroprevalence of HCV in health care workers was considerably higher than that reported in the general population, and needs to be evaluated on a larger sample.**

**Key words** Anti-HCV - HCV - health care workers

Hepatitis C virus (HCV) infection, a global health problem, is also prevalent in India<sup>1,2</sup>. HCV is a parenterally transmitted virus that may pose an occupational hazard to the health care workers<sup>3</sup>. There are very few studies from India regarding the prevalence of HCV infection as an occupational hazard in the high risk groups of health care staff working in hospitals<sup>4</sup>. The present study was therefore designed to determine the seroprevalence of HCV infection amongst health care workers (HCWs) of a tertiary level care centre in New Delhi.

The study was conducted in Lok Nayak Hospital, New Delhi during the period from June 2003 to August 2003. The study included a total of 100 subjects comprising of health care workers (resident doctors, nurses, technicians and those working in haemodialysis units, haematological laboratories, blood bank, dental units, *etc.*) employed in the hospital. A total of 128 health care workers were contacted of which 113 consented for the study. A questionnaire was used to initially screen the subjects for inclusion in the study. 13 subjects were excluded from the study based on history suggestive of any hepatobiliary disease or daily alcohol intake of more

than 40 g/day. The subjects were also asked to mention the unit of the hospital where they were working, and the duration (in years) for which they had been working in the present position. The subjects were then divided into subsets based on the unit where they were working at the time of this study. After initial clinical assessment, 5 ml blood sample was drawn from each subject under aseptic conditions. Serum was separated and stored at -70°C until use. Repeated thawing and freezing of the serum was avoided. The serum samples were tested for anti-HCV antibodies by using Hep-Chex C kit (Qualigens Fine Chemicals, New York) (sensitivity 87.50%, specificity 99.45%). Chi-square test was applied to test the significance of the factors studied in relation with the seroprevalence of anti-HCV antibodies.

The study included 46 males and 54 females with the mean age of  $34.62 \pm 5.04$  yr. Seroprevalence of HCV was found to be 4.0 per cent. The average duration of occupational exposure among the subjects was  $4.10 \pm 2.64$  yr. The duration of occupational exposure was not found to be a significant factor for HCV infection. The seroprevalence of anti-HCV antibodies was found to be 8.33 (2 of 24), 5.56 (1 of 18) and 4.0 per cent (1 of 25) amongst HCWs working in the haemodialysis unit, blood bank and haematological laboratory, respectively. None of the subjects from dental units and biochemical and other laboratories tested positive for anti-HCV antibodies.

In this study, the overall seroprevalence of HCV in the health care workers of Lok Nayak Hospital, New Delhi was found to be 4.0 per cent. This figure is comparable to previous reports<sup>5,6</sup>. It was observed that the duration for which the health care worker has been working in the hospital was not a significant factor for the prevalence of HCV. The seroprevalence of HCV in the general population has been studied extensively and reports from different parts of India show the seroprevalence of HCV infection to be as varied as 0.3 to 11.3 per cent<sup>1,2,7-9</sup>. But most of the studies have shown the prevalence of HCV to be less than 2 per cent in the general population. In our study, the seroprevalence of anti-HCV in health care workers was found to be considerably higher than in the general population. The high prevalence of HCV among health care workers may be due to their

exposure to infected blood/blood products of patients of HCV infection. This increased exposure may be in the form of accidental needle-pricks, contact of cut skin surface with blood/blood products, improper disposal of infected medical waste, *etc.*

The results of this study support the prevailing evidence for HCV as an occupational hazard to health care workers. Considering the limited size of the study, it would be prudent to evaluate the results of this study with a larger sample. It is imperative however, that health care workers be sensitized about universal precautions and safe disposal of needles and other contaminated materials, to decrease the risk of infection.

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