

Low community seroprevalence of Hepatitis C virus infection in the Gampaha district

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Hepatitis C virus (HCV) infection is an important cause of chronic hepatitis, cirrhosis, and hepatocellular carcinoma. With the possible exception of India, there are few epidemiological data on the prevalence of HCV infection in south Asia. Published data show a wide variation in seroprevalence rates within the region (1). In Sri Lanka, HCV seroprevalence is low among blood donors (1) and new entrant medical students (2). Seroprevalence is relatively high among patients with alcoholic cirrhosis (3, 4), renal transplant recipients – especially those in whom transplant surgery had been performed in India (5), and multiply transfused patients (6). HCV seroprevalence in the general community in Sri Lanka is not known.

We studied the community seroprevalence of HCV in the Gampaha district. This district was selected as it includes both highly urbanised and rural areas, has a wide variety of population groups, and a high population density. A multi-stage cluster sampling technique was employed. The Gampaha district comprises 14 Medical Officer of Health (MOH) divisions, and 3 of these (Wattala, Gampaha, Mirigama) were randomly selected for the survey. Each MOH division has several Public Health Midwife (PHM) areas, and 14 PHM areas were randomly selected from each of the 3 MOH divisions. A cluster was based in a Public Health Midwife area, and included individuals over 1 year of age. Only one individual was selected from each household. A pre-tested questionnaire was administered to assess risk of exposure to infection and, after informed consent, 1 to 3 ml of blood was obtained from those recruited. Serum was separated and stored at -70°C . Sera were tested for IgG anti-HCV using a third generation commercial ELISA (Enzyun-Test Anti-HCV, Boehringer Mannheim, Germany) which determines antibodies to HCV structural (c22-3, c200) and non-structural (NS5) proteins. Samples giving positive or intermediate results were retested in duplicate by the same ELISA, and reactivity was confirmed using a Western blot confirmatory test (Murex Welicozyme HCV Western Blot). Confirmed positive samples were also tested for HCV-RNA by RT-PCR. Ethical approval for the study was obtained from the Ethics Committee, Faculty of Medicine, University of Kelaniya.

Of the 534 individuals included in the survey [Male:female = 1.1:1; median age 36 years (inter-quartile range 17 to 55)] 174 (32.6%) had at least one and 48 (9%) had more than one risk factor for exposure to HCV infection. However, only 3 (0.6%) (95% CI, 0.12 – 1.63) sera were confirmed positive for anti-HCV. Two of the three sera were from patients who had received more than one blood transfusion within five years of the survey. All three samples were negative for HCV-RNA.



Seroprevalence of HCV infection was low in this community survey in the Gampaha district. This is despite a significant proportion of those surveyed having risk factors for the infection, and a hepatitis B surface antigen carrier rate of 2.5% (7) that is higher than the overall national prevalence rate of 1 to 2% (8). However, a low (0.9%) HCV seroprevalence in the general community has also been found recently in the adjoining Colombo district (Premaratne R, Epidemiology Unit, Ministry of Health, personal communication). This low prevalence may be indirectly reflected in the low place (17th out of 25 in order of frequency) that hepatocellular carcinoma occupies among cancers in Sri Lanka (9).

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