

## Abstract

The present study was designed with the objective of determining the sero-prevalence of hepatitis B and C infections in the Colombo district and estimating the contribution of these infections in the aetiology of chronic liver disease.

The study consisted of two components, a community based sero prevalence study and a hospital based case control study. One thousand seven hundred and fifty subjects were selected from all age groups except infants for the community survey using a multistage stratified cluster sampling technique. Fifty clusters comprising 35 individuals in each were selected probability proportionate to size of the populations in the Grama Niladhari Divisions. Information was collected on socio demographic characteristics and risk factors for hepatitis B and C infections using an interviewer administered, pre coded, structured questionnaire. Blood samples were collected for serological testing for viral markers anti-HBc, HBsAg and anti-HCV.

Two hundred and sixty two consecutive patients diagnosed as having chronic liver disease were enrolled for the case control study, from hospitals above the level of Base Hospitals in the Western province. Controls, three per two cases, were randomly identified from the participants of the community survey in such a way that the age-sex distribution of them was similar to that of cases. Information on exposure to chemicals, medicinal drugs, alcohol intake and smoking was gathered using an interviewer administered questionnaire. Blood samples collected were tested for anti-HBc, HBsAg and anti-HCV.

The study revealed that the sero-prevalence of anti-HBc and HBsAg in Colombo district is 5.49% (95% C.I. 4.42-6.55) and 0.46% (95% C.I. 0.14-0.77) respectively. The prevalence of anti-HBc was seen to increase progressively with age. Lower educational level, history of acupuncture treatment, risky sexual behaviour in self, being infected with a sexually transmitted infection either in self or the partner and history of imprisonment were significantly associated with anti-HBc positivity. Though tattooing was found to be associated with HBV infection the difference was not statistically significant, probably due to small numbers. Results of logistic regression analysis of

multiple risk factors with anti-HBc sero positivity showed significant associations for first three of the above risk factors. However, previous history of blood transfusions was not associated with HBV infection, either in univariate or multivariate analysis.

HBsAg carrier status was significantly associated with ethnicity, Moors having a higher risk, in spite of the small number of positive individuals.

The overall prevalence of anti-HCV in the study sample was 0.97% (95% C.I. 0.51-1.43). Anti-HCV prevalence was significantly higher among study subjects who had received blood transfusions compared to those who had not. A non significant association between past history of acupuncture treatment and anti-HCV in univariate analysis became significant after being adjusted for other risk factors. The findings of the study highlight the importance of a national policy to introduce universal screening of blood donors for hepatitis C infection.

Strengthening of health education services is recommended as it was found that risky sexual behaviour and acupuncture to be associated with increased risk of contracting hepatitis B and C infections.

According to the findings of the logistic regression analysis, a strong association was observed between heavy alcohol consumption and chronic liver disease (OR = 5.4). The study also revealed that HBsAg positivity increases the risk of chronic liver disease by eight fold, although it was not statistically significant probably due to the small numbers involved. In addition, presence of anti-HCV was found to be associated with a three-fold increase of developing chronic liver disease, though statistically not significant due to same reason. Over 30 percent of chronic liver disease could be attributed to heavy alcohol consumption (aetiologic fraction 31.17%). The contribution of hepatitis B carrier state and hepatitis C infection were as low as 2.94% and 1.68% respectively.

This study highlights the need of an interventional programme to prevent alcohol abuse as an important cause of chronic liver disease.