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Prevalence of hepatitis C infection in injection drug users in Hong Kong

Key Messages

1. Hepatitis C virus (HCV) infection is highly prevalent in Hong Kong injection drug users (IDUs).
2. Infection with HCV is associated with a long history of injections, older age, and recent practice of high-risk behaviours.
3. There is a discrepancy between the low HIV rate and high HCV rate in Hong Kong IDUs, despite the common route of transmission through needle sharing.

Introduction

Injection drug use is the most common route of hepatitis C virus (HCV) transmission. In the United States, it accounted for 60% of HCV transmission.[1] High prevalence rates have been reported: 62% in Ireland,[2] 80 to 90% in Thailand,[3,4] such that HCV infection is often indicative of risk-taking injection behaviours.

The HCV situation among injection drug users (IDUs) in Hong Kong is unknown. Studies on left-over laboratory samples showed HCV antibody prevalence of 46 to 74%, with a decreasing trend over time.[5] However, the tested subjects had not been characterised in terms of risk behaviours. Whether the observed decrease in HCV rate was genuine remains speculative.

The wide network of methadone clinics has contributed to a low level of risk behaviour and thus a low HIV prevalence (less than 1%) in the IDU population.[6] In southern China, the HIV prevalence in IDUs ranged from 18 to 56% in the provinces of Guangdong and Guangxi.[7]

Aims and objectives

To establish the prevalence of HCV infection among Hong Kong IDUs and identify any associated demographic or behavioural risk factors.

Methods

Between 20 February and 27 March 2006, a survey was conducted on drug users (recruited near major methadone clinics) in clinics where blood taking and counselling could be organised, with the assistance of volunteers who were ex-heroin users. Inclusion criteria were persons who (1) had a history of injection, (2) spoke Chinese or English, (3) agreed to participate, and (4) had blood taken for HCV antibody test.

The HCV antibody test was performed by the Public Health Laboratory Centre. Specimens negative for the first enzyme immunoassay (EIA) [Murex, Dartford, UK] were considered negative, whereas those tested positive were confirmed by a different EIA kit (Ortho Diagnostic Systems, Raritan [NJ], US). A third EIA (Bioelisa, Biokit; Barcelona, Spain) was performed if the first two tests showed incongruent results. Written consent was obtained from all participating drug users. Ethical approval was obtained from the Chinese University of Hong Kong and the Department of Health. An incentive in the form of a HK$30 meal coupon was offered to each participant.

Results

Of 598 IDUs participated, 567 were included after excluding duplicates and inconsistent results. Most subjects were male (84%) and Chinese (98%). The median age was 49 years. All had a long history of drug abuse, with a median duration of 17 years.

Although most subjects received methadone treatment, three quarters admitted having injected drugs in the preceding 3 months (recent injectors). About 80%

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of the recent injectors reported using new needles for most (>50%) or all injections. About two thirds of the subjects admitted ever sharing injecting equipment, of which 15% admitted to recent sharing (in past 3 months), and 85% tested positive for HCV antibody.

Univariate analyses showed that HCV prevalence was higher in IDUs who were male, older, a longer duration of injection drug use, ever shared needles, and concurrent use of midazolam/triazolam/rohypnol. Multivariate analysis identified duration of injection, recent injection, ever sharing and use of midazolam/triazolam/rohypnol as independent factors associated with HCV seropositivity.

Discussion

Prevalence of HCV antibody was higher in IDUs than reported previously. These results may indicate that (1) all subjects had a definitive history of injection; and (2) sampling bias occurred owing to higher representation of experienced drug users. Follow-up studies are needed to establish infection rates and genotype distributions, which carry clinical and public health implications. In view of a low HIV rate in heroin users, it appears that risk behaviours tend to accumulate over the years, leading to increased HCV infection prevalence. The low HIV prevalence could be associated with a relative decline in high-risk behaviours after the 1980s, though the exact reasons need further exploration.

Conclusions

The HCV antibody prevalence in IDUs was 85%; many of them received methadone treatment. Positive HCV antibody is associated with a long history of injection, though needle-sharing practice is uncommon. Owing to the high prevalence of HCV infection in local drug users, follow-up studies (including HCV RNA tests and genotype analysis) should be useful to determine the clinical and public health implications. Treatment strategy should take into consideration of the high prevalence of HCV infection in local drug users. The discrepancy between the prevalence of HCV (85% in our study) and HIV (less than 1% from surveillance) suggests that behavioural factors alone may not account for the transmission risk in the context of public health.

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