

Injecting and drug use factors associated with recent hepatitis C infection: new findings from a national sample of people who inject drugs in the United Kingdom (UK)

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INTRODUCTION

Globally 130-150 million people are estimated to have the hepatitis C virus (HCV); around 10% of these are people who inject drugs (PWID) [1]. In high income countries PWID are the group most affected, and in the United Kingdom (UK) around 90% of hepatitis C cases are believed to have been acquired as a result of injecting drug use [2].

Studies indicate that the sharing of injecting equipment is involved in the acquisition of hepatitis C infection among PWID [3,4,5]. The types of drugs being used may also have an impact on the risk of hepatitis C infection; with evidence indicating higher levels of infection risk among those injecting stimulants [6,7]. The currently available data on the impact of the sharing of different items of injecting equipment and of the types of drugs being used on hepatitis C risk is however limited.

We examined factors associated with recently acquired HCV infection in a national sample of PWID.

METHODS

PWID throughout the UK (except Scotland) have been recruited into a voluntary unlinked-anonymous survey since 1990 [8]. Participants in this multi-site survey currently provide dried-blood spot samples and complete a short behavioural questionnaire. The samples collected between 2011 and 2013 that tested negative for antibodies to hepatitis C [anti-HCV] were then tested for HCV RNA. Those participants whose samples were found to be anti-HCV negative and HCV RNA positive were classified as recent infections [9].

Bivariate associations between recent infection and a range of injecting risk practices and the types of drug used were initially examined (χ^2 test). Multivariable logistic regression was then used to adjust for age, gender and recruitment region. Analyses were undertaken using SPSS.



RESULTS

Among 4,479 participants who had injected during the 28 days preceding their participation in the survey, the anti-HCV prevalence was 51% (mean age 35 years; 23% women).

Among the 2,209 anti-HCV negative participants (mean age 33 years; 24% women), 54 (2.4%) had HCV RNA, and were thus classified as recent infections. Those with recent infections were more likely to be women (3.8% of women had a recent infection, figure 1) and younger (4.4% of those aged under 25 years had a recent infection compared with 1.8% of those aged 35 years and over, figure 1).

In the multivariable analyses, having a recent hepatitis C infection was associated with:

- sharing mixing containers, such as spoons; with 46% of recent infections having shared these vs. 28% of those not infected, adjusted odds ratio [AOR]=1.97, (95%CI 1.13-3.42); and
- injecting with needles/syringes that had been cleaned before reuse; with 48% of recent infections having cleaned and reused needles and syringes vs. 30% of those not infected, AOR=1.95 (95%CI 1.09-3.49).

The sharing of filters was also more common among those with a recent infection (37% vs. 23%, figure 2), though this difference was significant in the bivariate analysis this didn't remain so on adjustment (AOR=1.69, 95%CI 0.95-2.97).

The sharing of needles and syringes was also more common among those with recent infections 20% vs. 15%, but this difference was not significant (figure 2; AOR=1.26, 95%CI 0.64-2.50; respectively).

The injection of crack-cocaine and heroin were both associated with an elevated risk of recent hepatitis C infection (AOR=2.95, 95%CI 1.67-5.23; and AOR=8.68, 95%CI 1.91-63.3; respectively) (figure 3).

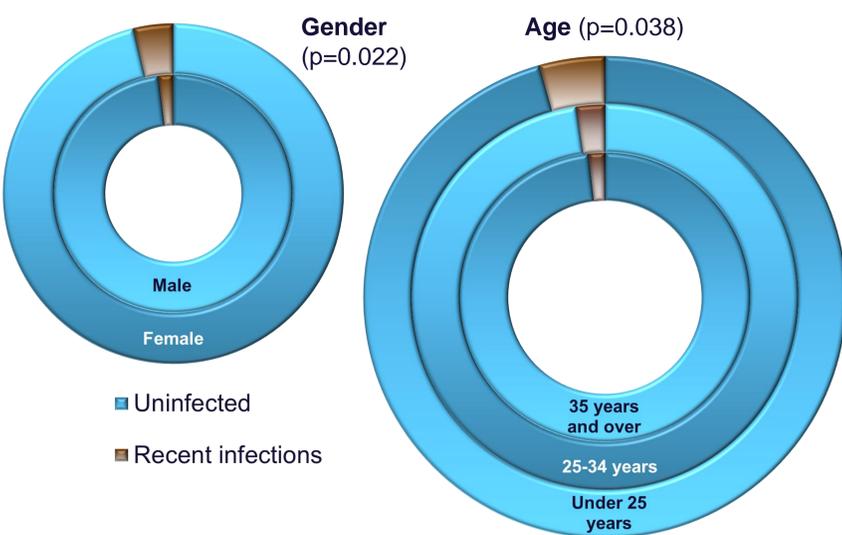


Figure 1. Demographic characteristics and recent hepatitis C infection.

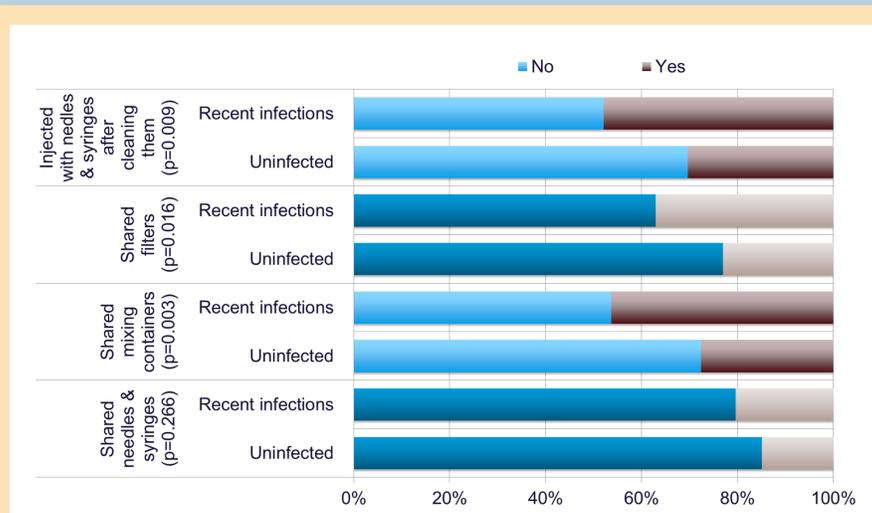


Figure 2. Injecting risk factors during the preceding 28 days and recent hepatitis C infection.

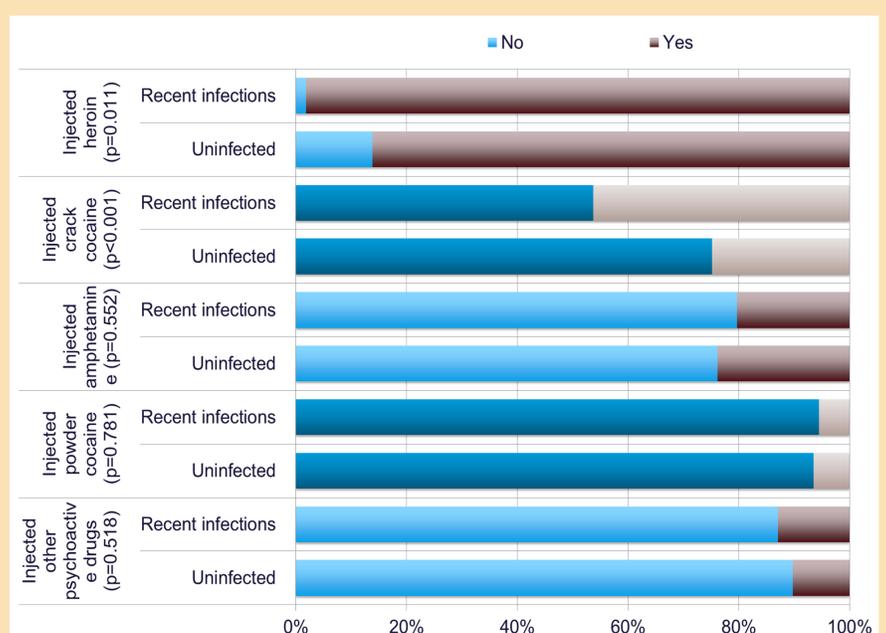


Figure 3. Drug types injected during the preceding 28 days and recent hepatitis C infection.

DISCUSSION

Our findings corroborate previous evidence indicating that injecting equipment sharing is associated with the recent acquisition of hepatitis C infection [3,4,5].

The association with the use of cleaned needles and syringes has not to our knowledge been reported before. It indicates that the use of ineffectively cleaned needles/syringes plays an important role in HCV transmission. It also suggests that potentially 'unknown' sharing – due to people being unaware that their previously used injecting equipment has been mixed up with that of someone else's - could also play an important role.

Our findings indicate that interventions to reduce the reuse of injecting equipment and to decrease the harms that occur when this cannot be avoided are needed. These interventions need to:

- support access to new sterile injecting equipment through, for example, increasing its distribution through needle and syringe programmes, promoting the secondary distribution of injecting equipment, and the use of outreach services;
- prevent the accidental re-use of other people's injecting equipment, for example, by promoting personalizing syringes, and;
- promote good cleaning techniques, for example, by providing simple and clear written instructions.

CONCLUSIONS

- **One in 40 of those who were susceptible to infection with hepatitis C were newly infected.**
- **Women and those aged under 25 years were more likely to have recent infections.**
- **The sharing and re-use of injecting equipment were both more common among those with recent infections.**
- **Recent infections were also associated with the injection of certain types of drugs such as crack-cocaine.**
- **Interventions to support access to new injecting equipment, to prevent accidental re-use of other people's injecting equipment, and to promote good cleaning techniques are needed.**

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