



Risk of HCV Infection among Heroin and Methamphetamine Users

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SUMMARY

Aims: The objective of the study was to find out, if there is a difference in the prevalence of HCV infection between opiate and methamphetamine users. **Patients and methods:** There were 222 patients in the study with the average age 23 years (SD±4.3), males 75%, females 25%. Retrospective, comparative study was conducted among the patients who requested treatment due to drug dependence on opiates (101 patients) and methamphetamines (121). **Results:** 65% of heroin users and 12% of methamphetamine users were infected with HCV, the prevalence among those who injected drugs was 69% and 28%, respectively. 93% of opiate users and 35% of methamphetamine users were injecting drug some time in their life. The risk of HCV infection was significantly higher among the opiate users (OR 13.75). **Conclusions:** The prevalence of injecting behavior and the risk of the HCV infection is lower among the methamphetamine in comparison with the opiate users. Still, this is much higher than in the general population. Because no substitution treatment is available for methamphetamine users, the detoxification followed by drug-free treatment is the important part of the risk reduction of the transmission of drug-related infectious diseases in general, and HCV in particular.

INTRODUCTION

Drug market as well as scene is dynamic. Decrease of availability and purity of heroin influenced also the European drug scene in the last fifteen years. Decrease of heroin use was replaced by higher consumption of amphetamine stimulants in several countries in the Central Europe (Rácz et al. 2012). The trend of higher methamphetamine use has been also observed in treatment demand in Slovakia. Research has shown that local markets influence drug use practices (Ciccarone, D. 2009, Roth et al. 2015).

Research on the relationship between illicit drug use and infectious diseases have primarily focused on the major problem of heroin injection and HIV transmission. Over the past decade, however, the rates of HCV infection among injection drug users have surpassed those of HIV infection. Studies have shown that the type of drugs injected, and frequency of injection were associated with an increase risk of hepatitis C infection (HCV) (van den Berg et al. 2007). Rodriguez (1998) found that the only risk factor associated with HCV positivity was drug injecting (OR: 9.2). According to Xia (2008) IDUs were 9.24 times more likely to be infected with HCV than non-IDUs.

Gonzales (2006) found that HCV infection was more associated with injection use, roughly 15% of total sample and 44% of the injectors were infected with HCV. Garefein (2013) has shown that HCV-positive IDUs injected more times, were more likely to inject daily, inject heroin alone or in combination with other drugs vs. no heroin users.

OBJECTIVES OF THE STUDY

Different drug scenes have different health consequences, which requires different health interventions. This is also the case of the risk of HCV infection transmission. The objective of this study was to find out if and how much the risk of HCV transmission is different between heroin and methamphetamine users entering treatment for drug dependence. The aim was to explore differences in drug administration as possible factor associated with expected difference of HCV infection prevalence between opiate and methamphetamine users.

PATIENTS AND METHODS

There were 222 patients in the study with average age 23 years (SD±4.3), 75% of males. Naturalistic observational clinical retrospective comparative study was conducted among patients who requested treatment due to drug dependence on opiates (101 patients) and methamphetamines (121 patients). Modeling logistic regression analysis was performed. Analyzed variables: age, sex, diagnosis opiate/meth, injecting, lifetime injecting prevalence, last year injecting prevalence, last month injecting prevalence, injecting frequency, HCV status.

RESULTS

Among a sample of all 101 heroin users 65% were found to be anti-HCV positive and also 12% of 121 methamphetamine users. The difference was statistically significant ($\chi^2 = 66.6, p < 0.001$). HCV prevalence among heroin IDUs was 69% and among methamphetamine IDUs 28% ($\chi^2 = 19, p < 0.001$). (Fig. 1). Self-reported frequency of drug injecting was: life-time - 93% of heroin users vs. 35% of methamphetamine users ($\chi^2 = 81, p < 0.001$); last-month - 81% of heroin users vs. 28% of methamphetamine users ($\chi^2 = 66, p < 0.001$); daily - heroin 64% vs. 9% of methamphetamine users ($\chi^2 = 72, p < 0.001$). (Fig. 2). Overall risk of contracting HCV was higher among heroin in comparison with methamphetamine users (OR 13.75, $r^2 = 0.38$). (Fig. 3).

Risk of HCV infection was higher among heroin IDUs vs. methamphetamine IDUs (OR 23.90, $r^2 = 0.37$). Within the group of only primarily heroin users was risk of HCV higher among IDUs vs. non-IDUs (OR 10.93, $r^2 = 0.09$) and in the group of methamphetamine users was risk of HCV also higher among IDUs vs. non-IDUs (OR 9.10, $r^2 = 0.20$). (Fig. 4).

The type of drug and injecting were associated with an increased risk of HCV infection ($r^2 = 0.46$).

RESULTS

Figure 1: HCV prevalence

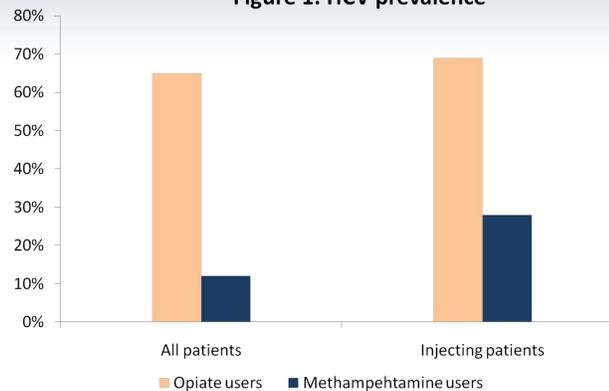


Figure 2: Injecting prevalence

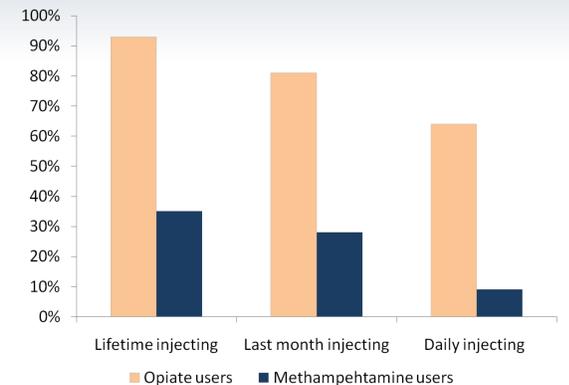


Figure 3: HCV risk - primary drug and injecting

Comparison	OR	r ²
opiate users versus methamphetamine users	13.75	0.38
injectors versus non-injectors	23.90	0.37

Figure 4: HCV risk - injectors versus non-injectors

Comparison	OR	r ²
among opiate users	10.93	0.09
among methamphetamine users	9.10	0.20

DISCUSSION

Our findings indicate that injecting drug use is associated with substantially higher prevalence of HCV. Prevalence was significantly higher among heroin users in our study. This could be due to different reasons. Except for lower proportion of injectors among methamphetamine users, also different course of disorder, with lower frequency of injecting and lower tendency to chronicity could probably play some role in lowering HCV incidence/prevalence in comparison to opiate users.

Research has predominantly focused on a single route of administration - injecting drug use (IDU). IDUs also exhibited higher rates of abuse/dependence, perceived need for substance abuse treatment, and co-occurring physical and psychological problems. Novak and Kral (2011) found in their study that about half of heroin users injected, compared to 13% of methamphetamine users. Difference in our study was heading in the same direction: 93% vs. 35%.

While many studies include IDUs as part of the patient population, only rarely are analyses conducted that specifically test the robustness of these interventions to the user's preference for type of drug and route of administration. Therefore, efforts are needed to understand and potentially expand the repertoire of evidence-based treatments that are available to frontline treatment providers to address unique subpopulations based on different primary drugs and routes of their administration. Sacks-Davis (2012) in conclusion of their systematic review stated that it is unlikely that behavioural interventions can have a considerable effect on HCV transmission amongst people who inject drugs. Aspinall (2014) came with similar findings.

Review-level evidence indicates that harm reduction interventions can reduce injecting risk behaviour, with sufficient evidence of effectiveness in relation to HIV with strongest evidence for OST and NEP. But there is a little evidence regarding the effectiveness of these interventions in preventing HCV transmission among IDUs (McArthur 2014). According to Mehta (2014), given the higher prevalence of stimulant injection in these populations, HIV prevention and treatment programs may need to be redesigned to maximize effectiveness. Rowson (2008) presented the findings, which suggested that treatment of methamphetamine dependence is promising for reducing behaviors that have been shown to transmit HIV. Matrix or treatment as usual reduces drug injecting.

CONCLUSIONS

The findings indicated that risk behaviors and health outcomes are different between injecting drug users who primarily inject heroin vs. those who use methamphetamines.

The prevalence of injecting behavior and the risk of the HCV infection was lower among the methamphetamine in comparison to opiate users, who were seeking treatment for dependence.

There is significantly higher proportion of non-injecting methamphetamine users and they were injecting less frequently than heroin users.

Traditional harm reduction model, where access to substitution treatment has an important role, is tailored for opiate users.

Different complex approach to harm reduction, treatment intervention model should be applied in the population where prevailing problem of drug users are methamphetamines.

Here, instead of substitution, good access to detoxification followed by psychosocially assisted treatment is playing an important role.

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