

NOUVELLE PRÉOCCUPATION CONCERNANT LA TRANSMISSION DU VIRUS DE L'HÉPATITE C CHEZ LES USAGERS DE DROGUES INJECTABLES À MONTRÉAL, CANADA

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Background

An estimated 242,500 Canadians are infected with HCV and new infections are still ongoing with nearly 8000 new cases occurring in 2007. Of the acute HCV cases with known risk factor information, injection drug use is associated with 63% of infections.

HCV incidence is very high among Canadian IDUs. For instance, in the Vancouver IDUs cohort study, HCV incidence rate was 37.3 per 100 person-years among participants aged between 13 and 24 years old at study entry. In Montréal, data from the street youth cohort study showed that 55% of young IDUs became HCV-antibody positive within the first four years of injection.

Background

- The risks of HCV transmission associated with the sharing of various pieces of drug injection equipment have been examined in many studies.
- The injection of drug residues has been described in some ethnographic studies. This practice consists of rinsing containers and filters with water to extract the leftover drug and inject (“doing a wash”).

Background

Recent ethnographic work carried out among street drug users in Montréal has shown that contrary to the preparation of cocaine or heroin powder, the preparation of medications (opioids) for injection...

- ...often implies that IDUs have to use big amounts of water to dissolve and inject the drug which means that they have to use the filter/container repeatedly to prepare a single hit
- ...may leave large amounts of residue in both containers and filters.

Background

- Filters and containers containing residues of drugs have a currency value in the street milieu. They can be used in case of withdrawal symptoms, swapped for other drugs or gifted as a token of gratitude.
- Many IDUs do not consider that “doing a wash” using the filters/containers of others involves the use of drug injection materials already used by someone else.

Background

- Drug residue injection could entail risks for bloodborne pathogen acquisition or transmission.
- In a North American context where the misuse of prescriptions drugs (opioids) is being on the rise among IDUs, this issue deserves further consideration.

Objective

To examine the association between drug-related behaviours, in particular the practice of drug residue injection, and HCV incidence among young IDUs.

Methods – Prospective cohort

Recruitment

- ➔ From 07/2001 to 06/2004 in street youth agencies in Montréal (14-23 y.o.)

Eligibility criteria

- ➔ Having been without a place to sleep more than once, or regularly used street youth services in the past 12 months
- ➔ Being 14 to 23 years of age
- ➔ Able to speak French or English

Data collection (07/2001 to 12/2005)

- ➔ Face-to-face interviews every 6 months including collection of a blood sample

Methods

- ✓ Youth who were HCV negative and active injectors at any visit during the study period were included in the analyses
- ✓ Variables under study
 - Socio-demographics: age, gender
 - Drug use behaviours (covering prior six months)
 - ⇒ using injection materials already used by someone else (syringe, filter, container, water)
 - ⇒ backloading, frontloading
 - ⇒ other drug sharing behaviours (in a syringe and then poured in a container and directly in a container)
 - ⇒ drug residue injection
 - ⇒ main drug injected

Methods – Statistical analyses

- ➔ Incidence rate was calculated using the person-time method
- ➔ Cox proportional hazards regression
 - ⇒ analysis restricted to intervals ≤ 1 year between 2 questionnaires
 - ⇒ time-varying covariates
 - ⇒ purposeful selection of covariates

Results

Final *street youth* sample: 858 participants

- ✓ 69% males
- ✓ 92% Canadian born
- ✓ mean age: 20.4 years
- ✓ Nb of visits: mean= 5.1 (range 1-9)
- ✓ 46 % ever injected drugs
- ✓ 31% injected drugs in the last six months
 - ✓ 51.0% mostly cocaine
 - ✓ 44.0% mostly heroin

Results

Of the 346 youth who reported having injected drugs in the six months prior to an interview, 235 were HCV antibody negative. Of these, 175 (74.5%) did a follow-up visit and were included in the analyses.

Results – Characteristics and drug use behaviours of young IDUs at first visit (n=175)

	N	%
Gender = male	105	60.0%
Mean age	21.1 years old	
Principal drug injected = cocaine	62	38.0%
« Sharing » :		
Syringe	52	29.9%
Cotton or filter	25	14.5%
Container	54	31.2%
Dilution water	43	25.1%
Cleaning water	23	13.3%
Frontloading	1	0.6%
Backloading	22	12.6%
Injecting residue	12	7.2%
Dividing drug in a syringe then poured in a container	18	10.5%
Dividing drug in a container	20	11.6%

Results – HCV incidence

Of the 175 young IDUs retained in the predictor analyses (median follow-up = 1 year), 57 seroconverted to HCV for an incidence rate of 26.3 per 100 person-years [95% CI: 19.2-34.1]

Results – Univariate regression analyses

Predictors	Hazard ratio	P-value
Gender (male vs female)	1.27	0.39
Age	0.89	0.09
« Sharing »		
Syringe	2.87	0.0002
Cotton or filter	1.80	0.12
Container	1.98	0.02
Dilution water	1.35	0.32
Cleaning water	1.40	0.35
Frontloading	1.27	0.82
Backloading	1.45	0.26
Injecting residue	3.35	0.004
Dividing drug in a syringe then poured in a container	1.75	0.12
Dividing drug in a container	2.40	0.005

Results – Multivariate analyses

Model without <i>Principal drug injected</i>	Adjusted hazard ratio	95% CI	
Sharing a syringe	2.54	1.44	4.49
Injecting residue	2.15	0.99	4.67

Model with <i>Principal drug injected</i>	Adjusted hazard ratio	95% CI	
Sharing a syringe	2.45	1.39	4.32
Principal drug injected – cocaine vs others	2.22	1.26	3.90
Injecting residue	2.11	0.97	4.62

Strengths and Limitations

Strengths

- ➔ Prospective cohort design
- ➔ High retention rate

Limitations

- ➔ Generalizability?
- ➔ Self reported behaviours
- ➔ Loss to f-up bias

Conclusion

- ➔ This study shows that injection of drug residue could play a significant role in HCV transmission
- ➔ Given the ongoing epidemic of non medical use of prescription opioids among Canadian IDUs, this question should be further examined

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