

# EXAMINING THE ASSOCIATION BETWEEN PRESCRIPTION OPIOID INJECTION AND HCV TRANSMISSION DURING TRANSITION OF A DRUG EPIDEMIC IN MONTREAL, CANADA.

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## Background:

It was postulated that “drug epidemics” pass through four phases: incubation, expansion, plateau and decline. Whether transitions between phases are accompanied by changes in HCV risk remain to be examined. The aim was to examine the association between prescription opioid (PO) injection and HCV seroconversion during the expansion and plateau phases of PO epidemic in Montreal.

## Methods:

HCV-seronegative persons who inject drugs (PWID) were recruited in a cohort study between 2004 and 2016. At each follow-up visit, participants completed interview-administered questionnaires and were tested for HCV-Ab. Trend tests were used to examine PO injection use overtime and time-to-event methods to estimate incidence rates. Time-updated Cox regression models evaluated associations between incident HCV and PO injection.

## Results:

PO injection use expanded steadily between 2004-2010, and plateaued afterwards (trend tests <0.001 and 0.559 respectively). Of 432 HCV-seronegative PWIDs enrolled with ≥one follow-up visit (Baseline: 81% males, mean age 34 (sd 9.8), 57% IV cocaine, 38% IV PO, 36% IV heroin past month), 153 became HCV-Ab positive during 1230 years of follow-up, for an incidence of 12.4 per 100 person-years (95% CI=10.6, 14.6). PO injectors were 3.8 times more likely to seroconvert to HCV, relative to non PO injectors. In multivariate analyses, an interaction was found in the association between PO injection and HCV seroconversion, with a greater risk of getting HCV for participants followed during the plateau (>2010: aHR=8.6; 95%CI: 4.1, 18.1) vs. the expansion period, (aHR 2004-2010= 1.9; 95%CI: 1.2, 2.9), when compared to no PO injection (p-value: <0.001). Other factors associated with HCV seroconversion included recent incarceration, injection paraphernalia sharing and IV cocaine.

**Conclusions:** The risk of HCV acquisition was higher during the plateau period of the PO epidemic. Drug use dynamics have to be better understood in relation to drug epidemic cycles in order to improve prevention efforts.

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