

Injection of Prescription Opioids and Risk of Blood-Borne Infections Among People Who Inject Drugs in Toronto

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BACKGROUND

- Injection of controlled-release prescription opioids may be associated with infective endocarditis (IE) and hepatitis C (HCV) incidence among people who inject drugs
- We investigated HCV infection and IE hospitalization among people injecting different types of opioids in Toronto, ON

METHODS

- **Population:** Adults (18+) enrolled in the community-recruited prospective cohort of people who inject drugs, *Ontario Integrated Supervised Injection Services* (Mar/2018-Mar/2020)
- **Data:** Self-reported, linked to provincial administrative health data
 - Recent drug injection (past 6 months) defined as use of hydromorphone (normal and controlled-released (CR) formulations) vs. other CR opioids (e.g. oxycodone/morphine) vs. unregulated opioids (e.g., fentanyl, heroin, etc.)
- **Outcomes of interest:**
 - IE hospitalization (ICD-10 I330, I339, I38, I39, B376)
 - HCV infection (ICD-10 B17.1, B18.2 or drug dispensation).
- **Analysis:** Multivariate Cox regression estimated adjusted hazard ratios (aHR) with 95% confidence interval (CI) for drug injected. and time to outcome, adjusted for age, male sex at birth, and race/ethnicity (white vs. other).
- Restricted to those with non-missing outcome, exposure, and covariate data

RESULTS

- ❖ **IE Analysis:** Cohort (n=514), 67% cisgender men, median age 40, 55% white
 - IE hospitalization rate (per 100 person-years):
 - Hydromorphone: 1.6
 - CR opioids: 3.3
 - Other injectable drugs: 1.8
 - For IE hospitalization, hydromorphone's aHR was 0.6 (95% CI 0.0-6.5) vs. other CR opioids and 0.8 (0.2-3.5) vs. unregulated opioids
- ❖ **HCV Analysis:** Cohort (n=415), 66% cisgender men, median age 39, 54.5% white
 - HCV incidence (per 100 person-year):
 - Hydromorphone: 20.2
 - CR opioids: 9.9
 - Other injectable drugs: 9.0
 - For HCV infection, aHR for hydromorphone injection was 2.2 (95%CI 0.5-9.2) vs. CR opioid injection and 2.2 (1.2-4.1) vs. unregulated opioids

Hazard Regressions, IE Hospitalization and HCV Infection

Outcome	Contrast		Events/100 person-years) ^a		Unadjusted	Adjusted
	Exposure of interest	Reference	Exposure	Reference	HR (95% CI)	HR (95% CI)
Hospitalized IE	Recent hydromorphone injection	Recent injection of other CR opioids	1.6	3.3	0.5 (0, 4.9)	0.6 ^b (0.0, 6.5)
		Other injected drug	1.6	1.8	0.9 (0.2, 3.9)	0.8 ^b (0.2 -3.5)
		Recent injection of other CR opioids	20.2	9.9	2.0 (0.5, 8.5)	2.2 ^c (0.5 -9.2)
HCV infection)		Other injected drug	20.2	9.0	2.2 (1.3, 4.0)	2.2 ^c (2, 4.1)

^a Due to small cells, unable to separately report numerator and denominator per exposure group. ^b Adjusted for baseline age, cisgender male, White race/ethnicity, frequency of drug injection (daily, weekly, less-than-weekly), recent hospitalization serious injection-related infection. ^cAdjusted for baseline age, cisgender man, White race/ethnicity, frequency of drug injection (daily, weekly, less-than-weekly), and recent income from sex work

CONCLUSIONS

- We noted increased HCV risk for CR opioid injection compared to injection of unregulated opioids.
- We did not detect any clearly differential risk of IE hospitalization across exposure groups.

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