Heroin Abuse Among IDU and Local PO Dispensing Levels in Ontario Cities

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Abstract

Background: Amid Ontario's growing opioid crisis, heroin abuse remains widespread in select urban areas and contributes to a large proportion of opioid overdoses provincially. Compared to prescription opioids (POs), heroin is especially hazardous to abuse since it is illicitly manufactured and frequently consumed by injection. PO abuse can also transition to heroin if access to preferred POs is impacted via diversion, dispensing or prescribing. However, the dynamics between preferences for heroin and local PO saturation (in this case, dispensing) are not well understood.

Methods: Heroin abuse data were gathered from PHAC's I-Track surveillance system while PO dispensing data were from the Ontario Drug Benefit (ODB) claims database. Using an unmatched repeated cross-sectional design, datasets spanning 2003 to 2011 were merged. The hierarchical structure consisted of individual-level I-Track responses nested within year and again within five city-level (Kingston, London, Sudbury, Thunder Bay and Toronto) dispensing rates. Mixed-effects multilevel logistic regressions were used to examine relationships.

Results: Almost one third (30.5%) of I-Track respondents abused heroin in the previous six months with marked variation by city, from roughly half of Toronto participants (51.0%) to about one in twenty (5.2%) in Thunder Bay. The final multivariate model for heroin abuse contained morphine dispensing (OR=1.04, $p=0.011$), present age (OR=0.99, $p=0.045$) and age of first injection (OR=0.97, $p\leq 0.001$). That is, considering age and age of first injection, heroin abuse was 4.4% more likely among IDU with each increase in annual morphine dispensing rates in their respective cities.

Implications: The connection between heroin abuse and dispensing rates of chemically similar morphine, but not other POs, reflects a substitution effect for specific opioid types regardless of whether illicit or prescription. Precautions should be taken to prevent heroin abuse and establish harm reduction strategies before expected interference to local dispensing levels of any chemically analogous POs (particularly morphine).