

SEX DISCREPANCIES IN THE PROTECTIVE EFFECT OF OPIOID AGONIST THERAPY ON INCIDENT HEPATITIS C INFECTION

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Background: Opioid agonist therapy (OAT) has been shown to reduce hepatitis C virus (HCV) incidence by 50% among people who inject drugs (PWID). Recent research suggests that the protective effect of OAT may be attenuated in females compared to males. This study assessed sex disparities in HCV incidence among PWID exposed to OAT and factors independently associated with decreased protective efficacy.

Methods: Inc3 pooled biological and behavioural data from 10 prospective observational studies examining incident HIV and HCV infections in high-risk cohorts. This study synthesised data from seven of the ten cohorts. Cox proportional hazards regression models with random effects for handling clustered survival data were used to identify predictors of incident HCV infection. Entry in each study to the estimated date of HCV infection was used to calculate person-year observation (PYO) and adjusted hazard ratios (aHRs) among participants who reported recent (last 12 months) OAT (methadone, buprenorphine or buprenorphine-naloxone).

Results: Among 701 participants exposed to OAT observed over 3,003 visits and 1,427 person-years observation (PYO), HCV incidence was 16.5 PYO (95%CI 13.1-20.7) in females and 7.6 PYO (95%CI 6.0-9.5) in males (F:M aHR 1.80, 95%CI 1.37-2.22, $p < 0.001$). Factors associated with HCV acquisition among females exposed to OAT included non-white race (aHR 1.79, 95%CI 1.25-2.56, $p = 0.001$), recent unstable housing (aHR 4.00, 95%CI 3.62-4.41, $p < 0.001$), recent daily or more frequent injection (aHR 1.45, 95%CI 1.01-2.08, $p = 0.042$) and recent receptive syringe sharing (aHR 1.43, 95%CI 1.33-1.53, $p < 0.001$).

Conclusion: Among respondents exposed to OAT, HCV incidence among females was twice that compared to males. Independent associations with attenuated effect included bio-social (non-white race), structural (unstable housing), and behavioural (frequent injecting and receptive syringe sharing) factors. Structural and behavioural

interventions that target women are needed to bolster the efficacy of OAT in females in order to prevent HCV transmission.

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