DOES COMBINED NEEDLE AND SYRINGE PROGRAM AND OPIOID AGONIST THERAPY REDUCE HIV AND HEPATITIS C VIRUS ACQUISITION AMONG PEOPLE WHO INJECT DRUGS IN DIFFERENT SETTINGS?

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Background: The Netherlands, Canada and Australia were early adopters of harm reduction programs for people who inject drugs (PWID). However, the current HIV and hepatitis C (HCV) epidemics in this group differ in these countries. We assessed the effect of needle and syringe program (NSP) and opioid agonist therapy (OAT) participation on HIV and HCV incidence in these settings.

Methods: We included PWID at risk of infection from the Amsterdam Cohort Studies (ACS, 1985–2014), Vancouver Injection Drug Users Study (VIDUS, 1997-2009), and Melbourne Injecting Drug User Cohort Study (SuperMIX, 2008-2021). For each cohort, we emulated the design and statistical analysis of a target randomized trial. We compared the effect of complete harm reduction participation (on OAT and 100% NSP coverage, or on OAT if no recent injection drug use) versus no or partial harm reduction participation combined (no OAT and/or <100% NSP coverage) on HIV and HCV risk (only HCV in SuperMIX given low HIV transmission). Marginal structural models were used to analyze data for each cohort. Pooled hazard ratios (HR) and 95%CI were calculated using random-effect models to estimate combined effects across countries.

Results: During follow-up, there were 61/624 HIV seroconversions in ACS and 37/1,399 in VIDUS, and 34/129 HCV seroconversions in ACS, 30/216 in VIDUS, and 21/122 in SuperMIX. When combined across cohorts, complete harm reduction participation led to a 46% lower risk of HIV acquisition (pooled HR= 0.54, 95%CI=0.32-0.90, I^2=0%), and a 69% lower risk of HCV acquisition (pooled HR = 0.31, 95%CI=0.16-0.60, I^2=0%), compared with no/partial harm reduction participation.

Conclusions: Complete NSP and OAT participation led to a substantial reduction of HIV and HCV acquisition compared to no/partial participation across all settings. These findings reinforce the crucial role of comprehensive access to harm reduction interventions in optimizing infection prevention.

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