

# ASSOCIATION OF OPIOID AGONIST TREATMENT WITH MORTALITY OR REHOSPITALIZATION FOLLOWING INJECTION DRUG USE-ASSOCIATED BACTERIAL AND FUNGAL INFECTIONS: LINKAGE COHORT STUDY

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**Background:** Among people with opioid use disorder following hospital discharge with injecting-related bacterial or fungal infections, we assessed whether outpatient use of opioid agonist treatment (OAT; i.e. methadone or buprenorphine) was associated with decreased risk of death or infection-related rehospitalization.

**Methods:** We analyzed data from the Opioid Agonist Treatment Safety (OATS) Study, a population-based, retrospective linkage cohort including all people in New South Wales, Australia, who accessed OAT between 1 July 2001 and 28 June 2018. We included participants who survived a hospitalization with injecting-related bacterial or fungal infections (i.e., skin and soft-tissue infection, sepsis/bacteraemia, endocarditis, osteomyelitis, septic arthritis, or epidural/brain abscess). Outcomes were all-cause death and rehospitalization for injecting-related infection. We used separate Cox proportional hazards models to assess associations between each outcome and OAT exposure, classified as time-varying by days on or off treatment. Covariates included participant demographics, comorbidities, prior substance-use related hospitalizations and incarceration, and index hospitalization characteristics.

**Results:** The study included 8,943 participants (mean age 39 ± 11 years; 34% women). The most common infections during participants' index hospitalizations were skin and soft-tissue (7,021; 79%), sepsis/bacteraemia (1,207; 14%), and endocarditis (431; 5%). Prevalence of OAT exposure was 48% on day 1, and participants had median 2 [IQR 0-5] switches on or off treatment during follow-up. Over median 6.56 years follow-up, 1,481 (17%) participants died and 3,653 (41%) were rehospitalized for injecting-related infections. OAT was associated with lower hazard of death (adjusted Hazard Ratio [aHR] 0.63, 95% confidence interval [CI] 0.57 - 0.70) and of rehospitalization (aHR 0.89, 95% CI 0.84 - 0.96).

**Conclusion:** Following hospitalizations with injecting-related bacterial and fungal infections, OAT is associated with reduced risk of death and recurrent infections among people with opioid use disorder. OAT should be offered and facilitated as part of a multi-component treatment strategy for injecting-related infections.

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