

**PROTECTIVE ASSOCIATIONS BETWEEN OPIOID AGONIST TREATMENT AND FATAL OPIOID OVERDOSE VARY WITH TIME AND AGE: FINDINGS FROM THE OPIOID AGONIST TREATMENT AND SAFETY (OATS) STUDY, NEW SOUTH WALES, AUSTRALIA, 2001-2016.**

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**Background:**

Opioid overdose mortality rates are significantly reduced while in opioid agonist treatment (OAT) relative to time out of OAT. Increases in the population overdose mortality rate and aging of people accessing OAT, as observed in Australia, may influence this association. We aimed to assess changes in the strength of association between OAT and overdose death over time among younger and older people and explore possible explanations for observed changes.

**Methods:**

OAT prescribing data were linked to mortality data. We calculated unintentional opioid overdose mortality rate ratios (MRR, in OAT/out of OAT, adjusted for age, sex, Indigenous status) for those aged <45 years and ≥45 years, for 2001-04, 2005-08, 2009-12, and 2013-16.

**Results:**

In those aged <45 years, the MRR decreased over time (e.g. MRR in 2001-2004: 0.54; 95% confidence interval (CI) 0.38, 0.77; MRR in 2013-2016: 0.32; 95% CI 0.25, 0.43), indicating an increase in the strength of the protective association between OAT and fatal overdose. In contrast, in those aged ≥45 years, the MRR in 2001-2004 was 0.33 (95% CI 0.10, 1.14) and increased over time to 0.53 (95% CI 0.36, 0.77). Preliminary analyses indicated methadone was more commonly implicated in overdose deaths in those ≥45 years (51% of deaths) relative to those <45 years (39% of deaths).

**Conclusion:**

The protective association between OAT and overdose mortality strengthened over time for people <45 years. In people ≥45 years, this protective association weakened concurrent with increasing population overdose rates. Concerns over the role of methadone in overdose deaths in older people have been raised in other jurisdictions and there is a great need to better understand safety in methadone prescribing in older patients. The preliminary findings reported here require further work adjusting for higher likelihood of older people being prescribed methadone relative to buprenorphine.

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