

Long-term opioid dose trajectories and associations with clinical outcomes

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Introduction: Opioid deprescribing has been recognized as a crucial clinical strategy for reducing opioid-related adverse effects and enhancing quality of life. However, international research has identified periods of opioid dose reduction as being associated with increased risk of overdose and mental health events. This study aims to examine the association between differing opioid dose trajectories and the association with emergency department (ED) presentations and hospital admissions related to substance use and mental health in Victoria, Australia.

Method: This is a retrospective cohort study of individuals receiving long-term opioids between 01/01/2018 and 31/05/2022, using an 18-month follow up period to examine study outcomes. De-identified primary care data were linked with hospital records from three metropolitan hospital networks in Victoria. Trajectory modelling was used to identify different prescription opioid dose patterns. Cox proportional hazards regression modelling was used to examine associations between opioid dose trajectories and clinical outcomes.

Key Findings: A total of 39,767 patients on long-term opioids were included in the study, and five different opioid dose trajectories were identified. After adjusting for covariates, a delayed decreasing dose trajectory showed a higher incidence of overall ED presentations and hospital admissions (adjusted hazard ratio [aHR], 1.284; 95% CI, 1.148-1.435) compared to a low dose group. Those in the delayed decreasing dose trajectory had a 77.2% increase in mental health (95% CI, 1.441-2.070) and a 41.0% increase in substance use (95% CI, 1.068-1.861) related ED visits and hospital admissions compared to the low dose reference group. An early decreasing dose trajectory was also associated with an increase in mental health-related ED visits and hospital admissions (aHR, 1.284; 95% CI, 1.079-1.527) compared to the low dose reference group.

Conclusions: Patients who experienced a decrease in their opioid dose tended to have an elevated risk of adverse clinical outcomes. Future studies should investigate whether there is a causal relationship between opioid dose changes and later harms.

Disclosure of Interest Statement: This work is funded by an NHMRC Ideas Grant (#20029193), LP and SN are the recipients of NHMRC Investigator Grant (#2016909[EL1] and #2025894[L2]). All research funds were paid to the employing institution.