

Change in prescription opioid dose and the risk of mental health-related and substance use-related emergency department presentations: a case-crossover study

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Introduction: Opioid deprescribing is recommended to reduce opioid-related harms; however, no Australian studies have assessed the clinical outcomes of opioid dose reductions. This study aims to determine if opioid dose changes are associated with mental health-related or substance use-related emergency department (ED) presentations.

Method: This self-controlled case-crossover study used POpulation Level Analysis and Reporting (POLAR) primary care data linked with data from three metropolitan hospitals in Victoria, Australia. People who had an ED presentation between April 2018 and May 2022 and had received \geq four opioid prescriptions in the 12 months preceding their ED presentation were included. Adjusted odds ratios (aOR) for ED presentations were estimated using conditional logistic regression, comparing opioid dose change in the 30 days prior to ED presentation to that in five corresponding sets of control periods of equal length not immediately preceding an ED presentation.

Results: Of the 1,458 eligible patients, 75.9% experienced a $>25\%$ reduction in their prescribed opioid dose in the 30 days before ED presentation. Compared with receiving no opioid prescriptions in the 30 days prior, $>25\%$ reduction in prescribed opioid dose (aOR: 1.78; 95% CI: 1.44-2.21) or opioid discontinuation (aOR:2.04; 95% CI: 1.48-2.82) was linked to higher odds of ED presentation whilst 10-25% reduction (aOR:0.15; 95% CI: 0.10-0.23) and stable or increased dose (aOR:0.01; 95% CI: 0.008-0.022) was associated with lower odds of ED presentation.

Discussions and Conclusions: Larger opioid dose reduction or discontinuation is associated with increased risk of subsequent mental health-related and substance use-related ED presentations.

Implications for Practice or Policy: These findings provide critical evidence to support the recommendations for gradual tapering of opioids as an effective clinical strategy for promoting the safe and effective use of prescription opioids.

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