

Initial opioid prescription patterns and the risk of ongoing use and adverse outcomes

Background

- Prescription opioids are increasingly used to treat acute and chronic pain in North America, however their long-term use at high doses can lead to many harms, including opioid use disorder, overdose, and death.
- Although current guidelines recommend initial opioid doses below 50 milligrams of morphine or equivalent (MME) for chronic pain and initial durations of three days or less for acute pain, these are largely based on expert opinion.
- Opioids are an important tool in pain management and as more thoughtful opioid prescribing is encouraged in clinical practice, physicians require information on how to safely initiate their patients on these medications when their use is deemed necessary.

What did we investigate?

The association between initial opioid prescription characteristics and the risk of opioid-related overdose and long-term opioid use.

How was the study conducted?

- We conducted a population-based retrospective cohort study of Ontarians newly dispensed an opioid to treat pain between July 1, 2013 and March 31, 2016.
- The initial opioid prescription was characterised using average daily opioid dose dispensed, duration of prescription, and formulation.
- In our primary analysis, we examined opioid-related overdoses in the year following the initial prescription date, defined as an emergency department (ED) visit or hospital admission for opioid poisoning or opioid-related death.
- In our secondary analysis, we examined continued opioid use for at least one year.

Key points

- One in every 2,000 people newly dispensed a prescription opioid experienced an opioid overdose within one year, and more than 3% continued treatment for at least one year.
- Higher initial daily dose, longer prescription duration, and receipt of a long-acting formulation at the initial prescription were significantly associated with higher risk of overdose and long-term opioid use.
- These findings support recommendations in current opioid prescribing guidelines, quality standards, and stewardship programs. Better alignment of opioid initiation practices with these endeavours may lead to important reductions in opioid-related harm in this population.

For more information

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What did we find?

- Between July 1, 2013 and March 31, 2016, 2,021,371 Ontarians newly received a prescription opioid.
- The most commonly initiated opioids were codeine (58%), oxycodone (23%), tramadol (9%), and hydromorphone (8%).
- Within the first year after opioid initiation, 1,121 individuals (~one in every 2,000 new opioid recipients) experienced an opioid overdose. Of these, 525 (47%) occurred while the individual was actively being treated with prescription opioids and 286 (26%) occurred in the first 28 days following initiation.
- The majority of overdose events were ED visits (67%), followed by inpatient admissions (24%) and opioid-related deaths (9%).
- Overall, higher initial daily dose, longer prescription duration, and receipt of a long-acting formulation at the initial prescription were significantly associated with higher risk of overdose.
- The risk of overdose was most strongly associated with initial daily doses exceeding 200 MME (adjusted hazard ratio [aHR] 2.97, 95% confidence interval [CI] 1.62 to 5.44), prescription durations of five or more days (range of aHR 1.27 to 1.80), and long-acting opioids (aHR 1.58, 95% CI 1.14 to 2.19).
- Among the cohort, 64,013 (3%) people initiating an opioid were treated for at least one year, and there was a strong relationship between initial prescription duration and ongoing use.
- Long-term use was most strongly associated with initial durations of 30 days or longer (adjusted odds ratio [aOR] 8.02, 95% CI 7.69 to 8.36), daily doses above 200 MME (aOR 2.52, 95% CI 2.27 to 2.80), and receipt of a long-acting opioid (aOR 1.38, 95% CI 1.32 to 1.44).

Recommendations

Patients

- Speak to your healthcare provider about taking opioids safely and discuss any questions and concerns you may have prior to initiating your prescription.

Healthcare providers

- Review opioid prescribing guidelines, quality standards, and stewardship programs prior to initiating patients on opioid therapy.
- Ensure the prescription of opioids is clinically necessary and discuss alternatives and safe use with patients prior to initiating opioids.

Policymakers

- Encourage alignment of initial opioid prescribing practices with guidelines, quality standards, and stewardship programs and create opportunities for healthcare providers to access this information.