OPIOID DOSE ESCALATION

Background  A common question from trainees is how fast, and by how much, can opioids be safely dose escalated? I like to use the analogy of furosemide (Lasix) when discussing this topic. I have never seen a resident order an increase in Lasix from 10 mg to 11 mg, yet that is precisely what often happens with opioids, especially parenteral infusions. Like furosemide, dose escalation of opioids should be done on the basis of a percentage increase. In fact, this is reflexively done when opioid-non-opioid fixed combination products are prescribed; going from one to two tablets of codeine/acetaminophen represents a 100% dose increase. The problem arises when oral single agents (e.g. oral morphine) or parenteral infusions are prescribed. Increasing a morphine infusion from 1 to 2 mg/hr is a 100% does increase; while going from 5 to 6 mg/hr is only a 20% increase, and yet many orders are written, “increase drip by 1 mg/hr, titrate to comfort.” Some hospitals and nursing units even have this as a standing pre-printed order or nursing policy.

Key Points: In general, patients do not notice a change in analgesia when dose increases are less than 25% above baseline. There is a paucity of clinical trial data on this subject. A common formula used by many practitioners is:

- For ongoing moderate to severe pain increase opioids doses by 50-100%, irrespective of starting dose.
- For ongoing mild to moderate pain increase by 25-50%, irrespective of starting dose.
- These guidelines assume the patient is tolerating the opioid well (with no or minimal sedation); clinicians will need to be more cautious and should consider expert help for patients with ongoing uncontrolled pain despite sedation from opioids or another cause.

When dose escalating long-acting opioids or opioid infusions, do not increase the long-acting drug or infusion basal rate more than 100% at any one time, irrespective of how many bolus/breakthrough doses have been used. These guidelines apply to patients with normal renal and hepatic function. For elderly patients, or those with renal/liver disease, dose escalation percentages should be reduced (see Fast Facts # 161 for Opioid use in renal failure and # 260 for Opioid use in liver failure).

The recommended frequency of dose escalation depends on the half-life of the drug.

- Short-acting oral single-agent opioids (e.g. morphine, oxycodone, hydromorphone), can be safely dose escalated every 2 hours.
- Sustained release oral opioids can be escalated every 24 hours.
- For methadone, levorphanol, or transdermal fentanyl no more frequently than every 72 hours is recommended.

Note: transbuccal fentanyl products have specific guidelines for dose escalation. See the manufacturers’ prescribing information and Fast Fact #103

See related analgesic Fast Facts:
#18 Oral opioid dosing intervals
# 51 Opioid combination products
# 70 PRN range orders
# 74 Good and Bad analgesic orders
# 215 Opioid poorly-responsive cancer pain

References:


Fast Facts and Concepts are edited by Sean Marks MD (Medical College of Wisconsin) and associate editor Drew A Rosielle MD (University of Minnesota Medical School), with the generous support of a volunteer peer-review editorial board, and are made available online by the Palliative Care Network of Wisconsin (PCNOW); the authors of each individual Fast Fact are solely responsible for that Fast Fact’s content. The full set of Fast Facts are available at Palliative Care Network of Wisconsin with contact information, and how to reference Fast Facts.

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