



- **FACT SHEET No. 9**

## **Management of Postsurgical Pain in Patients Treated Preoperatively with Opioids**

Increasing numbers of patients present for surgery after having received opioids preoperatively because of:

- Cancer-related pain
- Chronic non-cancer pain (e.g., due to osteoarthritis)
- Recurrent acute pain (e.g., sickle cell disease or pancreatitis)
- Substance use disorder treated with daily opioid maintenance
- Illicit, untreated substance (i.e., opioid) use disorder
- Exposure to high doses and/or high potency opioids for prolonged intervals after surgery or trauma

Many of these patients are tolerant to the analgesic effects of opioids. “Tolerance” refers to the physiologically-based decrease in the effect of a drug administered repeatedly over time—or equivalently, the need for increasing doses over time to evoke the same physiological response as the initial dose.

Opioid-tolerant patients are at increased risk of acute and chronic postsurgical pain and of undertreatment of pain. Their management presents challenges that are best met with a systematic, evidence-guided strategy. Overarching principles of postoperative pain management in opioid-tolerant patients are:

- Careful assessment (including psychosocial factors)
- Provision of effective analgesia despite reduced efficacy of opioids
- Attenuation of tolerance and opioid-induced hyperalgesia (OIH)
- Prevention of opioid abstinence syndrome
- Close communication with other health-care professionals
- Appropriate discharge planning



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## Provision of Effective Analgesia

Even in opioid-tolerant patients, opioids can be used to provide analgesia in the postsurgical setting. However, opioid dosing must be titrated to effect (ideally initially by use of patient-controlled analgesia), and their analgesic effect may be limited. Multimodal analgesia is particularly useful in this setting:

- Regional analgesia techniques as feasible given the nature and site of the operation, and absence of contraindications such as coagulopathy
- Use of non-opioid analgesics
- Use of adjuvant medications as outlined immediately below

## Attenuation of Tolerance and Opioid-Induced Hyperalgesia (OIH)

Long-term use of opioids may, in addition to producing analgesic tolerance, also induce increased sensitivity to nociceptive stimuli—the latter termed “opioid-induced hyperalgesia” (OIH). A number of strategies have been described to attenuate these effects:

- “Rotation”—switching to a different opioid
- Use of NMDA receptor antagonists (e.g., ketamine)
- In some cases, modulators of the alpha-2-delta calcium channel (gabapentin, pregabalin)

## Prevention of Opioid Withdrawal in Inpatients After Surgery

Long-term use of opioids induces physical dependence, which creates a risk of withdrawal reactions when opioids are abruptly reduced or stopped or if the opioid antagonist naloxone is administered. Strategies to prevent postoperative opioid withdrawal include:

- Maintenance of preoperative opioid baseline doses perioperatively
- Substitution with a different opioid if pretreatment was with an oral agent and the oral route is not available postoperatively
- Caution when using opioid antagonists (e.g., to treat presumptive opioid-induced hypoventilation); when doing so, divide the intended naloxone dose into small aliquots and titrate to the minimal desired effect
- Alpha-2 adrenergic agonists (clonidine, lofexidine, dexmedetomidine) can attenuate withdrawal reactions, as may possibly alpha-2-delta modulators (gabapentin, pregabalin)

## Discharge Planning

Discharge of opioid-tolerant patients requires careful planning and coordination with the health-care professionals who will look after patients in the outpatient setting (including staff of opioid maintenance programs for substance use disorder). Emphasis should be placed upon the appropriate use of the lowest likely dose of postoperative opioids (allowing



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for the frequent presence of analgesic tolerance to opioids) for the shortest necessary duration after discharge. Vigilance must be maintained for chronification of acute pain so as to permit early treatment.

### **Patient-Centered Information**

There is an increasing use of opioids, morphine-like painkillers, worldwide, as well for pain treatment as in drug addiction and its treatment. Patients on opioids require specific care in the postoperative period, as they have an increased risk of postsurgical pain. Management requires careful use of appropriate painkillers and specific measures to reduce withdrawal reactions.

### **RESOURCES AND REFERENCES**

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- [3] Schug SA. Acute pain management in the opioid-tolerant patient. *Pain Manag* 2012;2:581–91.

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