

## Pentazocine versus Short-Acting Opioids for Acute or Chronic Pain: A Review

### Context

Acute pain has many different causes including injury, surgery, acute illness, and labour and childbirth. It usually has a sudden onset, may be mild to severe, and can last a few minutes to a few months. Acute pain normally resolves once the underlying cause has been addressed but can become chronic in some circumstances. Chronic pain persists for longer than three months and is frequently related to back pain, osteoarthritis, fibromyalgia, and headaches. Acute and chronic pain is often treated with opioid pain medications such as codeine (e.g., Tylenol with Codeine #3), tramadol, buprenorphine, morphine, hydromorphone (e.g., DILAUDID), oxycodone (e.g., OxyContin, OxyNEO, or Percocet), fentanyl, and methadone.

### Technology

Pentazocine (under the brand name Talwin, available in oral and parenteral formulations) was introduced in the late 1960s as the first agonist-antagonist analgesic. Although chemically related to morphine, its mechanism of action differs at the receptor level resulting in pentazocine having a maximal or “ceiling” effect (increasing the dose of the drug leads to smaller and smaller gains in pain relief until the “ceiling” point, at which increasing the dose results in no additional analgesia). Pentazocine can also precipitate withdrawal reactions in patients receiving opioids for a prolonged duration.

### Issue

It was thought that the development of agonist-antagonist drugs such as pentazocine would diminish some side effects of the opioid agonists, such as central nervous system and respiratory depression. However, pentazocine has been associated with hallucinations, delusions, mood changes, panic, and abnormal thoughts.

A review of the comparative clinical effectiveness and safety of pentazocine compared with short-acting opioids for acute and chronic pain in the community or palliative settings will help to inform decisions on its use.

### Methods

A limited literature search of key resources was conducted, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

### Key Messages

#### For the treatment of patients in the general community who are experiencing acute or chronic pain:

- It is uncertain whether pentazocine is more or less clinically effective than short-acting opioids.

#### For the treatment of patients in palliative care who are experiencing pain:

- It is uncertain whether pentazocine is more or less clinically effective than short-acting opioids.

### Results

The literature search produced 324 citations, with no additional studies identified from the grey literature. Of these, 3 articles were deemed potentially relevant; however, no articles met the criteria for inclusion in this review.

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