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## Q / How effective are opioids for chronic low back pain?

### EVIDENCE-BASED ANSWER

**A / SHORT-TERM** (<4 months) treatment with opioids provides modest relief of chronic low back pain, but only minimal improvement in function compared with placebo (strength of recommendation [SOR]: **B**, systematic review of lower-quality randomized controlled trials [RCTs]).

Tramadol isn't superior to nonsteroidal anti-inflammatory drugs (NSAIDs) for pain relief (SOR: **A**, consistent results from

RCTs). In addition, oxycodone with titrated morphine isn't better than naproxen for relieving pain or improving function (SOR: **C**, a low-quality RCT).

Although no long-term RCTs have been done, cohort studies have shown that 6 to 12 months of opioid use is associated with a small decrease in pain and either very minimal improvement in, or worsening of, disability (SOR: **B**, prospective cohort trials).

### Evidence summary

A systematic review and meta-analysis of 15 RCTs with a total enrollment of 5540 assessed the efficacy of opioids in adults with chronic low back pain of at least 12 weeks' duration.<sup>1</sup> Five low-quality studies (1378 patients) that compared tramadol with placebo found tramadol to be moderately superior to placebo for relieving pain (standard mean difference [SMD]= -0.55; 95% confidence interval [CI], -0.66 to -0.44) but only modestly better for improving function (SMD= -0.18; 95% CI, -0.29 to -0.07).

Six trials with 1887 patients compared strong opioids (morphine, hydromorphone, oxycodone, oxymorphone, and tapentadol) with placebo. The opioids were better than placebo for improving pain (SMD= -0.43; 95% CI, -0.52 to -0.33) and function (SMD= -0.26; 95% CI, -0.37 to -0.15). The general interpretation of SMD effect size is 0.2=small, 0.5=medium, 0.8=large. In this case, larger negative numbers correlate with greater improvement.

### How opioids stack up against NSAIDs

Two separate double-blind, double-dummy

studies randomized adults with low back pain of at least 12 weeks' duration to receive celecoxib 200 mg twice daily (404 and 398 patients, respectively) or tramadol 50 mg 4 times daily (392 and 404 patients, respectively) for 6 weeks.<sup>2</sup> The primary outcome measure was at least a 30% improvement in pain using a 0 (no pain) to 10 (worst possible pain) scale. In both studies, more patients taking celecoxib had positive responses than patients taking tramadol (63% vs 50%,  $P<.001$ , and 64% vs 55%,  $P<.008$ , respectively).

A small RCT (36 patients who had suffered low back pain for more than 6 months) randomized patients to one of 3 treatment groups for 16 weeks: oxycodone as much as 20 mg/d (13 patients); naproxen as much as 1 g/d (12 patients); or oxycodone and sustained-release morphine (titrated up to 200 mg morphine equivalent/d (11 patients)).<sup>3</sup> After 16 weeks, patients receiving oxycodone or naproxen were treated with oxycodone and sustained-release morphine for another 16 weeks, as were patients already receiving this therapy. Pain was assessed on a 0 (none) to 100 (worst possible pain) scale.

Both opioid groups had significantly less



### INSTANT POLL

Which medication would you be most likely to prescribe for a patient with chronic low back pain who failed to respond to non-pharmacologic treatments?

- A nonsteroidal anti-inflammatory drug
- An opioid
- Acetaminophen
- An antidepressant
- Other

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pain on average (59.8 for oxycodone, 54.9 for titrated morphine) than the naproxen group (65.5;  $F=16.07$ ;  $P<.001$ ) but no significant difference in activity level. However, an independent analysis of the naproxen group and titrated morphine group found no significant difference in either pain relief (SMD= -0.58; 95% CI, -1.42 to 0.26) or disability (SMD= -0.06; 95% CI, -0.88 to 0.76) between the 2 groups.<sup>4</sup>

### How does long-term opioid use affect pain and function?

Two prospective cohort studies have evaluated long-term opioid use. The first (715 patients) used a Roland-Morris Disability Questionnaire (RMDQ) to assess disability at 6 months in patients taking opioids compared with patients not taking opioids.<sup>5</sup> Patients using opioids showed an increase in RMDQ score of 1.18 units (95% CI, 0.17-2.19) on a 0 to 24 scale, with 24 representing greatest disability.

The second study evaluated pain and function in 1843 adults with acute back injuries taking opioids for a year.<sup>6</sup> Pain, rated on a 0 to 10 scale, decreased from 7.7 at baseline to 6.8 at one year (no  $P$  value). At the end of the first quarter, the RMDQ score decreased from 18.8 at baseline (the end of the first quarter)

to 17.5 at one year (no  $P$  value). Clinically meaningful improvement in pain and function (30% or more) occurred in 26% (95% CI, 18%-36%) and 16% (95% CI, 10%-25%) of patients, respectively.

### Recommendations

The 2007 clinical practice guideline on low back pain from The American College of Physicians and American Pain Society recommends opioids, including tramadol, for patients with severe back pain who don't get adequate relief from acetaminophen or NSAIDs.<sup>7</sup>

The 2009 National Institute for Health and Care Excellence (NICE) guidelines for early management of persistent, nonspecific low back pain recommend considering strong opioids (buprenorphine, fentanyl, and oxycodone) for short-term use in severe pain and referral to a specialist for patients requiring prolonged use of strong opioids.<sup>8</sup>

The 2013 British Pain Society guidelines for low back and radicular pain recommend tight restrictions on the use of strong opioids. They also recommend giving the lowest possible dose of opioids for the shortest time possible.<sup>9</sup>

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➤ Short-term treatment with opioids provides modest relief of chronic low back pain, but only minimal improvement in function compared with placebo.

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