Osteoarthritis pain getting you down? Duloxetine

Clinical Question: Do Serotonin Norepinephrine Reuptake Inhibitors (SNRIs), specifically duloxetine, improve pain in patients with osteoarthritis?

Bottom Line: Duloxetine can meaningfully reduce osteoarthritis pain scores (by at least 30%) for ~60% of patients compared to ~40% on placebo. An average pain of ~6 (scale 0-10) will be reduced by ~2.5 points, compared to 1.7 on placebo. Duloxetine adverse effects lead to withdrawal in 12% of patients versus 6% on placebo.

Evidence:

- Six systematic reviews with 2-7 randomized controlled trials (RCTs) and 487-2102 patients.\(^{1-6}\) Duloxetine 60-120mg daily versus placebo, results statistically significant unless indicated.
  - Proportion of patients attaining a meaningful pain reduction (generally ≥30% reduction in pain score):
    - Systematic review (6 RCTs, 2060 patients)\(^1\) of hip or knee osteoarthritis, over 10-18 weeks: 64% taking duloxetine versus 43% taking placebo, number needed to treat (NNT)=5.
    - Other systematic reviews found similar:\(^3,5-6\) NNT=6-9.
    - One RCT (231 patients) randomized patients to 60mg or 120mg and found no difference.\(^7\)
  - Improvement in baseline pain scores (0-10 point scale, lower scores indicate less pain):
    - Systematic review (5 RCTs, 2059 patients),\(^5\) patients started with an average score of 5.8: duloxetine improved pain 0.8 more than placebo, achieving a mean pain score of 3.3 versus 4.1 for placebo which is likely clinically meaningful.
    - Another systematic review found similar.\(^3\)
  - Adverse events:
    - Overall adverse events:\(^4\) 55% versus 37% (placebo), number needed to harm (NNH)=6.
      - Most common adverse events:\(^4\) gastrointestinal 36% versus 8% (placebo), (NNH=4).
        - Specifically\(^6\) nausea (NNH 16), fatigue (NNH 17), constipation (NNH 19), erectile dysfunction (NNH 20), abdominal pain (NNH 34).
    - Withdrawal due to adverse events:\(^4\) 12% versus 6% (placebo), NNH=17.
    - Other systematic reviews found similar.\(^1-6\)
Limitations: all industry-funded studies.

Context:
- No RCTs looked at venlafaxine to treat osteoarthritis pain.
- Duloxetine is “conditionally recommended” by the Osteoarthritis Research Society International guidelines and by the American College of Rheumatology, however, tolerability needs to be considered.8-9
- A PEER Simplified Decision Aid on osteoarthritis can assist with patient informed decision making and is available online.10

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Disclosures:
Authors do not have any conflicts of interest to declare.

References: