

# Antidepressant proves effective in alleviating osteoarthritis pain

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Antidepressants can play a key role in alleviating painful conditions like osteoarthritis and may result in fewer side effects than traditionally prescribed drug regimes, such as anti-inflammatories and opioids, according to a perspective paper published online ahead of print publication by the *International Journal of Clinical Practice*.

American doctors Leslie Citrome and Amy Weiss-Citrome analysed the latest clinical evidence on [duloxetine](#), a well-established antidepressant that received US [Food and Drug Administration](#) (FDA) approval in 2010 for use with [chronic musculoskeletal pain](#), including osteoarthritis.

"It is not uncommon to treat osteoarthritis with a combination of drugs that work in different ways" explains Dr Leslie Citrome, Clinical Professor of Psychiatry and [Behavioural Sciences](#) at New York Medical College, Valhalla, New York, USA. "Our review supports this approach and confirms that antidepressants are not just for depression and can play a key role in relieving this painful condition."

The authors looked at studies exploring the effects of duloxetine being used on its own or in combination with non-steroidal anti-inflammatory drugs (NSAIDs). These included the two randomised double-blind, placebo controlled clinical trials that formed the basis of [FDA approval](#) for duloxetine for the treatment of chronic [pain](#) associated with osteoarthritis.

Study results were analysed using number needed to treat (NNT) and number needed to harm (NNH). These quantify how many patients need to be treated with one intervention versus another before encountering one additional patient who experiences a desired outcome (NNT) or undesired disadvantage, such as a side-effect (NNH). A smaller number indicates greater advantages for NNT and greater disadvantages for NNH.

"Applying these simple methods to often complex research gives us a real indication of whether a drug will benefit or harm our patients, which is what we as clinicians are most interested in" explains Dr Citrome.

When duloxetine was compared with a placebo tablet containing no active ingredients, using data from the two FDA approval studies, the NNT was six. This means that six patients would need to be treated with duloxetine instead of receiving the placebo before encountering one additional patient experiencing an improvement in pain using a composite measure that brings together a number of indicators of efficacy. Such a low NNT makes a compelling case for this treatment approach.

The authors say that this finding, over 13 weeks, compared favourably with other studies of NSAIDs - the NNT was five for etodolac after four weeks and four for tenoxicam after eight weeks.

When the [side effects](#) of the various drugs were taken into account, this showed that when duloxetine was used on its own for 13 weeks it provided a number of advantages over NSAIDs, which can lead to gastrointestinal bleeding, and opiates such as morphine, which can cause constipation.

The most common side effects of duloxetine - nausea, fatigue and constipation - were small when compared to the placebo, resulting in NNHs of 16, 17 and 19 respectively. This means, for example, that 16 patients would need to be treated with duloxetine instead of receiving the placebo before encountering one additional patient experiencing nausea.

The studies used to gain FDA approval also showed that pain reduction using duloxetine on its own was not dependent on an improvement in depressive symptoms.

"Although the use of duloxetine as a monotherapy for pain has been approved by the regulatory agencies, it is quite common for patients to receive a combination of drugs and NSAIDs are the most frequently prescribed drugs for the pain associated with osteoarthritis" says co-author Dr Amy Weiss-Citrome, a specialist in Physical Medicine and Rehabilitation.

For that reason the authors also examined the findings of a recent study that showed the potential synergy of duloxetine and NSAIDs.

The study, a ten-week double-blind trial of 524 patients with osteoarthritis of the knee, found that those who took a combination of duloxetine and NSAIDs reported greater pain reductions than the control group who took a NSAID with a placebo.

The NNT for the outcome of substantial improvement in pain with combination treatment versus NSAIDs alone was six, underlining the benefits of this approach.

"We believe that our analysis of these studies demonstrate that clinicians managing patients suffering from [osteoarthritis](#) should also consider prescribing adjunctive antidepressants that can effectively impact on central pain pathways" concludes Dr Leslie Citrome.

**More information:** Antidepressants and the relief of osteoarthritic pain - Findings from a study examining adjunctive duloxetine. Citrome L and Weiss-Citrome A. International Journal of Clinical Practice. Online early ahead of print publication. (March 2012). [doi: 10.1111/j.1742-1241.2012.02899.x](#)

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