Tapentadol for Chronic Musculoskeletal Pain in Adults

Danette Y. Wall

Background

The presence of pain, especially uncontrolled pain, can negatively impact a patient's healing process, evidence-based care and treatment plans, as well as organizational and healthcare system outcomes. Chronic musculoskeletal pain (CMP) is a prevalent condition and a major cause of disability and absence from work worldwide (Santos, Alarcao, Fareleira, Vaz-Carneiro, & Costa, 2015). Irrespective of type, source, and cause, pain affects the whole person and requires a patient-centered interdisciplinary approach to managing it. Nurses' role in pain management is well established. Traditionally, nurses act as care coordinators, with increasing responsibility for interdisciplinary approaches in pain management to include assessment, monitoring, intervention, documentation, education (patient and professional), and evaluation of treatment modalities.

Pharmacological management is one such ever-changing treatment modality requiring nurses to be acutely aware and able to translate evidence-based practices and treatment modalities specific to pain management. Opioids, a pharmacological modality, are frequently prescribed to treat chronic pain, with some degree of adverse effects restricting their long-term use and benefits. By way of constant assessment, nurses often assess, identify, and collaborate inventions to mitigate these adverse effects.

In this commentary, tapentadol (Nucynta), a mu receptor agonist and norepinephrine reuptake inhibit opioid analgesic, approved for management of moderate-to-severe pain, is examined for use, efficacy, effectiveness, and tolerability by way of summarizing Santos et al.'s (2015) review of "Tapentadol for Chronic Musculoskeletal Pain in Adults."

Objective/s

The review authors' aim was to determine the efficacy, safety, and tolerability of tapentadol extended-release for moderate-to-severe pain for at least 3 months for any musculoskeletal cause.

Intervention/Methods

Various electronic databases, trial registers, and reference lists of retrieved studies were searched for all published and unpublished randomized controlled trials (RCTs) of tapentadol in people with CMP compared with a placebo, other strong analgesic agents, both, or other active controls. Studies were included if they were explicit and appropriate, parallel, and crossover; used Food and Drug Administration- and European Medicine Agency–approved extended release dosing of 100–500 mg a day; and participants were male and female, 18 years or older, with moderate to severe CMP of any cause lasting 3 months or longer.

Verbal, numerical, and visual analog rating scales were used to score and classify participant pain as either moderate or severe, as well as outcomes as primary and secondary. The primary efficacy outcome was a change in pain intensity score and responder's rate by at least 50%. The primary safety outcome was withdrawal rate due to adverse effects. Evidence-based tools were used to ensure rigor and eliminate bias such as the use of two review authors, consensus with a third author arbitrator for differences of opinion, data extraction forms, and various Cochrane tools, protocols, and best practices for conducting systematic reviews. Authors contacted the medication manufacturer for additional information.

Results

Four parallel-design RCTs of moderate quality comparing tapentadol with oxycodone in 4,094 participants met inclusion criteria. In comparison with placebo, tapentadol was associated with a mean reduction of 0.56 points

Danette Y. Wall, DNP, MBA, ACRN, RN, CPHQ, Department of Veterans Affairs, Veterans Health Administration (Retired), Founder and CEO-Grace Business Solutions, and a member of the Cochrane Nursing Care Field (CNCF).

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(95% confidence interval [CI] [−0.92, −0.20]) on the 11-point numerical rating scale (NRS) at 12 weeks and with a 1.36-point increase (95% CI [1.13, 1.64]) in the risk of responding to treatment (number needed to treat for an additional beneficial outcome [NNTB] = 16; 95% CI [9, 57], for 12 weeks). There was moderate-to-high heterogeneity for the efficacy outcome estimates.

Tapentadol was associated with a 2.7-fold increase (95% CI [2.05, 3.52]) in the risk of discontinuing treatment due to adverse effects (number needed to treat for an additional harmful outcome [NNTH] = 10; 95% CI [7, 12], for 12 weeks). In comparison with oxycodone, pooled data showed a 0.24-point reduction (95% CI [−0.43, −0.05]) in pain intensity from baseline on the 11-point NRS. Tapentadol was associated with a 50% risk reduction (95% CI [42, 60]) of discontinuing treatment due to adverse effects (NNTH = 6; 95% CI [5, 7], for 12 weeks). Tapentadol was also associated with a 9% reduction (95% CI [4, 15]) in the overall risk of adverse effects (NNTH = 18; 95% CI [12, 35], for 12 weeks) and with a nonsignificant 43% reduction (95% CI [33, 76]) in the risk of serious adverse effects. There was moderate-to-high heterogeneity for most efficacy (except for the primary outcome) and safety outcome estimates.

Conclusions

There was moderate-quality evidence that three out of 10 people treated with tapentadol had at least 50% pain reduction (responded to treatment) whereas only two out of 10 people treated with oxycodone and placebo responded to the treatment. There was moderate-quality evidence that tapentadol-treated people were at a higher risk of withdrawal from the trial due to side effects than placebo (two out of 10 tapentadol-treated people and one out of 10 placebo-treated people). For oxycodone-treated people, four out of 10 withdrew because of side effects. Constipation, nausea and vomiting, and itching (pruritus) were less with tapentadol than with oxycodone, but there was no difference in fatigue, insomnia, sleepiness (somnolence), and headache. The overall clinical benefit of tapentadol in moderate-to-severe CMP found in clinical trials was relatively small (a common conclusion found in all opioids trials for chronic pain). Further studies are needed to find out which people with CMP would benefit the most from this new opioid.

Implications for Practice

As with other chronic pain, CMP has clinical, psychological, and social implications that limit complex activities, contributes to lost work productivity, reduces quality of life, and carries stigma. Treatment of chronic pain continues to be a challenge for healthcare providers and healthcare systems, while affecting the whole patient. According to the Centers for Disease Control and Prevention, in 2012, healthcare providers wrote 259 million prescriptions for opioid pain medication, enough for every adult in the United States to have a bottle of pills (Dowell, Haegerich, & Chou, 2016). Opioids, such as tapentadol, are used in the management of cancer, noncancerous chronic pain, and end-of-life pain. Opioid prescriptions per capita increased 7.3% from 2007 to 2012, with opioid prescribing rates increasing more for family practice, general practice, and internal medicine than for other specialties. Nurses working in these clinical areas play an integral role in pain management. Nursing, like other professions, have a duty to relieve pain and suffering and ultimately do no harm while advocating for patients (Amstein & Broglio, 2016).

Data suggest the incidence and severity of adverse effects may be lower with tapentadol than with other strong opioids. As a newer opioid, it is relevant to review its benefits and risks for moderate to severe CMP. In comparison with placebo and oxycodone, tapentadol was found to improve pain control slightly, as well as to have a better safety and tolerability profile than oxycodone. However, in terms of pain reduction, the benefit was small. In both cases, people with osteoarthritis seemed to achieve better results than people with lower back pain. As full data emersion was not achieved, additional research is required to further examine the overall clinical benefits of tapentadol.

This review affords nursing to stay abreast of tapentadol, a newer pharmacological treatment modality, to better assess its safety, efficacy, and effectiveness when prescribed and make recommendations in respect to applying contextual evidence-based research into practice and educating patients and other professionals in its use, all of which are well within the scope of professional nursing.

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