Ketorolac for Pain Management: A Review

Context
Dental pain is most commonly caused by dental caries (cavities), gum disease, or dental procedures, but there are many other causes — including referred pain from a non-dental problem. Non-steroidal anti-inflammatory drugs (NSAIDs) play an important role in the management of dental pain and other types of non-cancer, non-dental pain including soft tissue pain, arthritis, and ankylosing spondylitis. NSAIDs work by blocking cyclooxygenase enzymes that are needed to produce prostaglandin. Prostaglandins increase sensitivity to pain, and higher prostaglandin concentrations can cause pain directly.

Technology
Ketorolac tromethamine (Toradol) is an NSAID available in Canada, administered by either oral tablets or intramuscular injection. Oral ketorolac has a Health Canada indication for short-term management (not to exceed five days for postsurgical patients or seven days for patients with musculoskeletal pain) of moderate to moderately severe acute pain including postsurgical pain, acute musculoskeletal trauma, and post-partum uterine cramping. The recommended dose for oral administration is 10 mg every four to six hours, not to exceed 40 mg per day.

Issue
Ketorolac is associated with a number of side effects including gastrointestinal bleeds. Given the potential safety risks and the uncertain benefit over other NSAIDs, a review of the clinical effectiveness of oral ketorolac for the management of dental pain and non-cancer, non-dental pain will help to guide decisions.

Methods
A limited literature search was conducted of key resources, 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
- Ketorolac’s effectiveness in managing dental pain does not appear to differ from other NSAIDs.
- Ketorolac’s effectiveness in managing non-dental, non-cancer pain does not appear to differ from other NSAIDs.
- Evidence on the clinical effectiveness of ketorolac compared with other NSAIDs is limited.

Results
The literature search identified 428 citations, 22 of which were deemed potentially relevant. No additional articles were identified from other sources. Of these 22 reports, 4 randomized controlled trials met the criteria for inclusion in this review.