



Title: Is there a role for topical nonsteroidal anti-inflammatory drugs in the treatment of tendonitis? (Clinical report)

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Abstract:

Evaluation of: Mazieres B, Rouanet S, Guillon Y, Scarsi C, Reiner V: Topical ketoprofen patch in the treatment of tendinitis: a randomized, double-blind, placebo-controlled study. *J. Rheumatol.* 32(8), 1563-1570 (2005) [1]. This was a multicenter, double-blind, randomized, controlled trial to study the efficacy of the topical ketoprofen patch in the treatment of tendonitis. This trial suggests that using a ketoprofen once-daily 100 mg patch is helpful in the management of tendonitis. Topical nonsteroidal anti-inflammatory analgesics represent a promising alternative in the management of musculoskeletal pain for the aging population.

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Musculoskeletal pain is one of the most common disorders throughout the world and one of the leading causes of physical limitation in the elderly. Oral nonsteroidal anti-inflammatory drugs (NSAIDs) are among the most commonly prescribed drugs worldwide for musculoskeletal pain and are responsible for approximately a quarter of all adverse drug reaction reports ^[2]. An alternative and attractive approach to pain control is to apply drugs locally to the peripheral site of origin of the pain ^[3]. Topical applications include cream, lotion, gel, oil, aerosol or patch applied to somatic sites ^[4]. These topical remedies allow for a high local concentration of the drug at the site of the pain and lower or negligible systemic drug levels, producing fewer or no adverse drug effects ^[2]. Topical application of NSAIDs offers the advantage of local, concentrated drug delivery to affected tissues with a reduced incidence of systemic adverse effects, such as peptic ulcer disease and gastrointestinal hemorrhage. Other advantages of topical application include a lack of drug interactions and ease of use. It is of particular advantage for the elderly, since most are already receiving other medications for multiple medical conditions. The effectiveness of the topical approach may depend on the degree of inflammation, alteration in peripheral sensory processing and central sensitization involved ^[5]. Topical approaches are more likely to be effective where there is a prominent peripheral component. Tendonitis seems an ideal condition for the use of topical application. In the August issue of the *Journal of Rheumatology*, Mazieres and colleagues reported on the efficacy of the topical ketoprofen patch in the treatment of tendonitis ^[1].

Results

This multicenter, double-blind, randomized, controlled trial examined once-daily ketoprofen 100 mg patch in symptomatic tendonitis of recent onset. Patients were included if they had significant pain secondary to tendonitis of the upper or lower extremities not requiring orthopedic or surgical treatment. The primary outcome measure was change in pain score on daily activities, rated on a 100 mm visual analog scale. Other

outcome measurements included spontaneous pain at rest, pain on full passive motion, pain relief and pain intensity, assessed twice-daily by the patient. Statistical analysis was performed on the differences between the two groups in all enrolled patients (intent-to-treat population), with total of 172 patients.

A total of 85% of patients completed the 2-week study and 15% discontinued due to adverse events, inefficacy or cure. Pain decreased by 56% (-38.4 ± 25.6 mm) in the treatment group compared with 37% (-25.8 ± 24.5 mm) in the placebo groups ($p = 0.0013$). The most common adverse events reported were local skin reactions: 47 in the ketoprofen group versus 44 in the placebo groups. These local skin reactions resolved spontaneously and rarely led to premature termination of treatment. As expected, no severe or systemic adverse reactions were observed.

Significance of the results

This trial suggests that the topical ketoprofen patch is helpful in the management of tendonitis. No severe or systemic adverse reactions were observed. However, this study was of short duration and adverse events associated with long-term use are unknown. Other studies have demonstrated that since bioavailability and plasma concentration following topical application account for 5-15% of those achieved by systemic delivery [3], systemic adverse effects occur much less often compared with systemic delivery [6]. Local reactions are more common, with rash and pruritis at the site of application accounting for the majority.

Future perspective

The localized peripheral administration of drugs, such as by topical application, can potentially optimize drug concentrations at the site of origin of the pain, while leading to lower systemic levels, fewer adverse systemic effects and fewer drug interactions. Primary sensory afferent neurons can be activated by a range of inflammatory mediators such as prostanoids, bradykinin, ATP, histamine and serotonin, and inhibiting their actions represents a strategy for the development of analgesics. At present, topical and other forms of peripheral administration of NSAIDs, opioids, capsaicin, local anesthetics and [alpha]-adrenoceptor agonists are being used in a variety of clinical states. Topical analgesics represent a promising area in pain management for our aging population.

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