Effects of Topical analgesics in acute and chronic pain
NEWS
Pain Management

A recent study has found reliable data regarding the efficacy of topical diclofenac and ketoprofen in acute pain conditions. The investigators have also highlighted the importance of the specific formulation used in acute or other pain conditions. Topical diclofenac and ketoprofen have not been found to be much efficacious in treating chronic musculoskeletal conditions after 6 to 12 weeks as did topical high-concentration capsaicin in postherpetic neuralgia.

Acute pain occurs due to problems like sprains, muscle aches or tendinopathy while the chronic pain arises as a result of severe diseases like osteoarthritis or neuropathic pain. The topical analgesics that are mostly used to counter pain are NSAIDs, lidocaine, capsaicin, and salicylate rubefacients, etc. The clinical study was conducted to estimate the efficacy of these analgesics and the related adverse events on the skin.

Systematic reviews related to acute and chronic pain published in February 2017 in the Cochrane Database of Systematic Reviews were identified. The primary outcome was defined as at least 50% reduction in pain at an appropriate duration as reported by the patient. The number needed to treat for one other beneficial outcome (NNT) for efficacy results for each topical analgesic or formulation, and the number needed to treat for one extra harmful result (NNH) for adverse events were extracted. The information on patients who withdrew from the study due to lack of effectiveness or adverse events was also obtained. The data was needed from a minimum of 200 participants, in at least two studies. The investigators ruled the risk for publication bias if the addition of four studies of typical size (400 participants) with zero effect increased NNT compared with placebo to 10 (minimal clinical utility).

Scientists created their grade assessment after obtaining the GRADE assessment from the original papers. A total of 13 Cochrane Reviews, including 206 studies were assessed for topical analgesics efficacy and harms in various acute and chronic painful conditions. The reviewers focused on evidence that involves the comparison of topical analgesics with placebo. Scientists considered moderate or high-quality evidence for several therapies providing 50% pain relief, based upon the basic quality of the studies and susceptibility to publication bias. Further, in acute musculoskeletal pain, the local analgesics estimation was done at seven days. The analgesics used in acute pain treatment were diclofenac Emulgel, piroxicam gel, diclofenac Flector plaster, ketoprofen gel, and diclofenac other plaster. In chronic musculoskeletal pain (especially due to osteoarthritis), diclofenac preparations and ketoprofen were used. The diclofenac preparations were either used for less than six weeks or over 6-12 weeks. The ketoprofen was also applied over 6 to 12 weeks. Moreover, in severe conditions like postherpetic neuralgia, capsaicin in high concentration showed moderate-quality evidence of limited efficacy. Other therapies were also analyzed, but the evidence was of low quality.

The topical preparations such as unspecified diclofenac formulations, ibuprofen gels and creams and diclofenac gel other than Emulgel, indomethacin, and ketoprofen plaster in acute pain reflected low efficacy evidence, potentially subject to publication bias. In case of chronic pain, salicylate rubefacients formulations showed low evidence. Further, evidence for other medications like NSAIDs, capsaicin, lidocaine, etc. was of low quality and was limited to single studies or comparisons with sparse data. The evidence on withdrawals was also of very low quality due to the small number of events.

The lack of efficacy withdrawals was lower with topical diclofenac than placebo and topical salicylate for chronic pain conditions. Adverse event withdrawals were higher with topical capsaicin low-concentration than placebo, topical salicylate and topical diclofenac. Systemic or local adverse event rates with topical NSAIDs were no higher than topical placebo in acute pain. Local adverse events with topical capsaicin low concentration were higher than topical placebo in chronic pain. Moderate-quality evidence showed more
local adverse events than placebo in chronic pain conditions with topical diclofenac and local pain with
topical capsaicin high-concentration. In chronic pain, there was moderate-quality evidence of no further
local adverse events with topical ketoprofen over topical placebo. Serious adverse events were rare.
GRADE estimates of moderate or low quality in some reviews were recognized very low by the scientists
due to scanty numbers of participants and events.

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