Time to consider topical capsaicin for acute trauma pain?

Topical capsaicin is more effective than topical piroxicam at reducing pain in acute upper extremity injuries.

**PRACTICE CHANGER**

Use topical capsaicin gel 0.05% for pain reduction in patients with isolated blunt injuries of the upper extremity without fracture.

**STRENGTH OF RECOMMENDATION**

B: Based on a single randomized controlled trial (RCT)\(^1\)


**ILLUSTRATIVE CASE**

A 23-year-old man with no significant past medical history presents to an urgent care center after a fall on his right arm while playing football. He reports a pain level of 6 using the visual analog scale (VAS). Physical exam reveals minor erythema and edema of his forearm with pain to palpation. Range of motion, strength, and sensation are intact. No lacerations are present. His vital signs are normal. No fracture is found on imaging. The physician decides that treatment with a topical analgesic is reasonable for this uncomplicated contusion of the right forearm. Is there a role for topical capsaicin in the treatment of this patient’s pain?

Topical nonsteroidal anti-inflammatory drugs (NSAIDs) are effective for the treatment of acute non–low back pain musculoskeletal injuries.\(^2\) They are generally well tolerated and just as effective as oral NSAIDs or acetaminophen for localized injuries. Their ubiquitous availability, affordability, and low adverse effect profile make them an attractive first-line treatment option for acute musculoskeletal pain.

Capsaicin, a topical agent derived from a genus of red peppers, has been used for the treatment of neuropathic and chronic pain via its interactions with substance P, transient receptor potential vanilloid subtype 1 (TRPV1), and nociceptive nerve fibers.\(^3,4\) It has demonstrated effectiveness in the management of diabetic neuropathy, knee osteoarthritis, and postherpetic neuralgia, as well as various causes of pruritus.\(^5,6\)

Although many studies have compared oral and topical NSAIDs, opiates, and acetaminophen, few studies have directly compared topical NSAIDs and capsaicin. This study compared the topical NSAID piroxicam with topical capsaicin.

**STUDY SUMMARY**

**Topical capsaicin demonstrated superior pain reduction**

This prospective, double-blind RCT compared the efficacy of topical capsaicin vs topical piroxicam for the treatment of acute pain following upper extremity blunt trauma. Patients (ages ≥ 18 years) who presented to a Turkish emergency department within 2 hours of upper extremity injury were randomized to receive either 0.05% capsaicin gel (n = 69) or 0.5% piroxicam gel (n = 67). Patients reported level 5 or higher pain on the VAS. Those with fractures, dislocations, skin disruption, or other trauma were excluded. Age, gender, pain duration, and mechanism of injury did not differ significantly between study groups.\(^1\)
Topical capsaicin is an effective alternative to a topical NSAID in reducing pain associated with acute upper extremity injuries.