

Acute and chronic pain are significant sources of suffering for patients with advanced illnesses. Adverse effects from systemic analgesics (oral, rectal, parenteral, or transdermal) can limit dose titration, thus hindering effectiveness. Topical analgesics offer a solution to limit systemic adverse effects and are recommended whenever the location and level of pain allow for achievable pain relief with topical application.<sup>1</sup>

There are several considerations to make prior to initiating topical therapy including the source, extent and severity of localized pain, class and formulation of topical medication, and patient-specific factors. Topical pain analgesics are typically applied to unbroken skin. Covering of the application site with dressings, or external heat sources (e.g., heating pads), are discouraged because their use may increase absorption and introduce unwanted adverse effects.

## SOURCES OF LOCALIZED PAIN

Localized pain can arise from both acute and chronic sources. Below are examples of each type.

<b>Acute</b>	Strains Sprains	Acute back pain Muscle aches	Tendonitis
<b>Chronic</b>	Arthralgia (e.g., osteoarthritis, rheumatoid arthritis) Lower back pain Neuropathic pain (e.g., diabetic neuropathy, localized neuropathic pain, post-herpetic neuralgia) Skin structure and mucous membranes (e.g., cutaneous ulcers, wounds, stomatitis, painful pruritis)		

## TOPICAL ANALGESIC TREATMENT OPTIONS

### Local Anesthetics and Counterirritants

- Lidocaine
  - For well localized neuropathic pain (especially postherpetic neuralgia) alongside systemic therapy<sup>3</sup>
  - Useful for anesthesia of the skin and mucous membranes, and for stomatitis
  - Lidocaine is available in several formulations, both over-the-counter (OTC) and prescription (Rx): patch (4%, 5%), ointment (5%), cream (3%, 4%, 5%), jelly (0.5%, 2%, 3%, 4%), solution (2%, 4%), oromucosal solution (2% viscous solution), and lotion (2.75%, 3%, 3.5%, 4%)
  - Compounded 1% or 10% topical spray by Enclara Pharmacia
- Capsaicin
  - According to a 2004 systematic review, capsaicin has moderate to poor efficacy for chronic musculo-skeletal or nerve pain, but may be useful as an adjunct or for pain unresponsive to other therapies<sup>4</sup>
  - Capsaicin is indicated for rheumatoid arthritis, osteoarthritis, myalgia, arthralgia (simple back pain, sprains, or strains) diabetic neuropathy, diabetic foot pain, and postherpetic neuralgia
  - OTC formulations include topical patch (0.025% is most common), creams (0.025%, 0.033%, 0.035%, 0.075%, 0.1%, 0.25%), gels (0.025%, 0.05%, 0.075%), pad (0.025%), lotion (0.035%), and solution (0.15%)
- Other Counterirritants (methyl salicylate, salicylates, menthol and camphor)
  - In general, these medications may help with mild to moderate acute pain
  - Topical salicylates are not effective for osteoarthritis
  - Many products available with varying strengths and formulations; the most common include BenGay®, Icy Hot®, Aspercreme® and Salonpas®

## Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

- For acute mild to moderate pain (sprains, strains and contusions) and less effective for chronic low back pain, extensive musculoskeletal pain, and peripheral neuropathic pain<sup>3</sup>
- Topical NSAIDs are recommended for patients with mild osteoarthritis localized to small joints (knees, hands) - recommended application is 2 to 4 times daily as needed<sup>5</sup>
- Diclofenac products (OTC and Rx) – topical patch (1.3%), gel (1%, 3%), cream (1%, 2.5%), and solution (1.5%, 2%)
- Compounded ketoprofen 50 mg/mL (5%) PLO gel by Enclara Pharmacia

## Tricyclic Antidepressants (TCAs)

- Relieve pruritis-related discomfort and pain but also may help with neuropathic pain<sup>6, 7</sup>
- Doxepin is available in a cream (5%)

## PLO (pluronic acid and lecithin oranogel) gels

- Topical compounds using PLO differ from other types of topical creams, gels or ointments in that they in theory work systemically rather than locally, but evidence is lacking and conflicting in the demonstration of the extent of systemic effects of PLO gels. For most PLO compounds, the percentage of drug absorbed is unknown<sup>8,9</sup>
  - Specifically, there is evidence that morphine and ABHR PLO gels are NOT reliably absorbed across the skin for systemic effect<sup>10</sup>
- PLO gels compounded by Enclara Pharmacia for pain include Dexamethasone 4 mg/ml, Ketamine 50 mg/ml, Ketoprofen 50 mg/ml (5%), and Morphine 10 mg/ml (1ml syringe)

For more information on topical analgesics for localized pain, refer to Enclara's Palliative Pearls case studies on [Topical Analgesics for Local Pain](#) and [Pluronic Lecithin Organogel \(PLO\) Gels: Exploring the Evidence](#).

## REFERENCES

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