

A white mortar and pestle is positioned on the left side of the image. The background is a lush green field of tall grass or reeds. In the bottom left corner, there is a small cluster of fresh green basil leaves. The overall image conveys a sense of natural medicine and pharmacy.

Compounded Topical Pain Medications Used in Health-Systems

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Indications for Compounded Topical Pain Medications

- Procedures
- Soft tissue injuries/arthritis
- Neuropathic





Most Common Formulations

➤ **Procedural:**

TAC, BLT, LET gels, nasal sprays, throat sprays

➤ **Soft tissue/arthritis:**

NSAIDs alone or in combo with Ketamine and/or glucocorticosteroids

➤ **Neuropathic:**

Patient-specific combinations of NSAIDs, anesthetics, anticonvulsants, antidepressants, NMDA receptor antagonists, ketamine, baclofen, clonidine, cyclobenzaprine, capsaicin

Case Report

Updated Case Report:

THE USE OF TOPICAL CONCENTRATED CAPSAICIN CREAM TO TREAT ERYTHROMELALGIA IN A PEDIATRIC PATIENT

Linda F. McElhiney, PharmD,
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Abstract

Case reports are extremely useful tools for pharmacists, especially compounding pharmacists. These valuable resources of compounded therapy assists pharmacists with the knowledge to adjust medications or use an alternative medication based on the results of previous patients. This article provides an update on a pediatric patient diagnosed with erythromelalgia who was previously treated topically with a compounded concentrated capsaicin cream.

Case Report:

» The Use of Topical Concentrated CAPSAICIN CREAM to Treat Erythromelalgia in a Pediatric Patient



Abstract The patient is a 10-year-old male with a long history of erythromelalgia, a rare condition characterized by severe burning pain in the extremities. The patient had been treated with various medications, including gabapentin, but with limited success. The patient's condition was exacerbated by heat and exercise. The patient's parents were seeking alternative treatments. The patient was brought to the attention of the pharmacist, who had experience with the use of topical concentrated capsaicin cream in the treatment of erythromelalgia. The patient was treated with a compounded concentrated capsaicin cream, which resulted in a significant improvement in the patient's symptoms. The patient's condition was stable for several months after treatment.

The symptoms can be very debilitating and so distressing to the patient that it can lead to suicide.

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CAPSAICIN Capsaicin is a naturally occurring compound found in chili peppers. It is known for its ability to cause a burning sensation on the skin. Topical concentrated capsaicin cream is used to treat various conditions, including erythromelalgia. The patient was treated with a compounded concentrated capsaicin cream, which resulted in a significant improvement in the patient's symptoms. The patient's condition was stable for several months after treatment.



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Information Shared with Physicians

- Provide published peer-reviewed journal articles
- Recommend formulas
- Instructions on use or ordering/prescribing process



Information Shared with Patients or Caregivers

- Instructions on use
- Possible side effects
- Missing doses
- Signs of degradation
- Contact information



Ingredients in Compounded Topical Pain Medications

Anesthetics

Bupivacaine	1%
Benzocaine	2-20%
Cocaine	4-10%
Lidocaine	2-10%
Tetracaine	0.5-5%

Analgesics

Methadone	0.1-2%
Tramadol	5%

NMDA-Receptor Antagonists

Ketamine	5-10%
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Ingredients in Compounded Topical Pain Medications

NSAIDs

Diclofenac	3-8%
Flurbiprofen	10-20%
Ibuprofen	2-20%
Indomethacin	1-20%
Ketoprofen	5-10%
Piroxicam	0.5-4%

Anticonvulsants

Carbamazepine	1-5%
Gabapentin	1-10%

Antidepressants

Amitriptyline	2-4%
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Ingredients in Compounded Topical Pain Medications

Miscellaneous

Baclofen	2%
Capsaicin	0.075-10%*
Clonidine	0.1-0.22%
Cyclobenzaprine	0.5-2%
Dextromethorphan	4-20%
Glucocorticosteroids	various
Menthol	0.25-10%
Methyl Salicylate	5-35%



Bases Used To Prepare Compounded Topical Pain Medications

- OTC topical creams, lotions, gels, and ointments are typically not suitable as bases for compounded topical pain preparations
- Use products designed for incorporation of active ingredients and tested for absorption
- Pluronic-Lecithin Organogels (PLO) may be compounded but also available as commercial products
- Manufacturers include PCCA, Humco, Fagron, Letco, Medisca



Developing Formulations

- Consult with physicians, medical team, clinical pharmacists
- Look for published information in peer-reviewed journals, textbooks, online resources, manufacturers: *IJPC*, **Trissel's Stability of Compounded Formulations**.
CompoundingToday.com, United States Pharmacopeia (USP)
- Select a suitable base
- Write a Master Formulation
- Follow USP standards for compounding
- Compounded medications added to formulary or protocols go through P&T Committee



Trends in Prescribing Compounded Topical Pain Medications in Health-Systems

- **Procedural:** All items are unit-dosed. Approximately 500-600 doses administered per month between 3 downtown hospitals (1 pediatric, 1 adult, 1 adult and pediatric)
- **Soft tissue/arthritic:** Used by the sports medicine facility. Typically ordered through retail pharmacies since patients are outpatient.
- **Neuropathic:** 1-2 patients started as inpatient per month between 3 downtown hospitals and continued on an outpatient basis. Seeing more use in pediatric patients.

Metered Devices Used in Compounded Topical Pain Medications

- Typically, a specific dose is not measured for neuropathic or soft tissue/arthritic topical pain medications; however, procedural topical pain medications are unit-dosed.
- Commercial devices available to measure specific doses: Unguator dosimeter, Topi-Click, UnoDose. topical syringes.





Monitoring for Safety and Efficacy

- Each patient in the hospital is followed by a medical team: 3-4 physicians (staff, residents, interns...), clinical pharmacist and pharmacy staff, nurses, dietician, therapists, students
- All patient medical records are electronic and easily accessible by staff to monitor progress
- Once discharged, patient receives a follow-up call within 24-48 hours from medical team (usually nurse)
- Follow-up visits scheduled before release or online through app
- Patient self-report; no laboratory tests done for topical pain medication unless there is a need or indication

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