MADISON MEDICAL COMPOUNDING PHARMACY

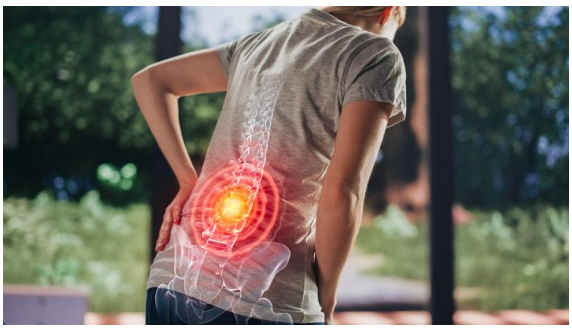
Phone 601-707-7545
Fax 601-856-8985
www.mmcpharmacy.com

Thank you for entrusting in the compounding services at Madison Medical Compounding Pharmacy to help meet the unique medication needs of your patients. We are excited to share our monthly newsletter with you and look forward to working with you. Please don't hesitate to let us know how we can assist you and your practice.

LeAnn Chambers, Pharm.D. and Matthew Chambers, Pharm.D.

The International Association for the Study of Pain has declared September Pain Awareness Month in order to raise awareness about chronic pain and pain management. This year's focus is on the importance of individualized, multidisciplinary, and multimodal approaches to managing pain. Find out how compounding allows us to provide an individualized approach to pain management.

Managing Osteoarthritic Pain with Topical NSAIDs



Osteoarthritis (OA) is a leading cause of pain and disability worldwide. Due to the rapid aging of the world's population, OA of the hands, knees and lower back is expected to be one of the major challenges to maintaining physical function and quality of life in the elderly. Topical NSAIDS are expected to be at the forefront of providing relief from osteoarthritic pain while avoiding systemic exposure – an important consideration in a patient population with frequent co-morbidities and age-related decline in renal and hepatic function.

Best available evidence indicates that topical NSAIDs have a moderate effect on relief of osteoarthritic pain, comparable to that of oral NSAIDs but with a better risk-to-benefit ratio. International clinical practice guidelines recommend topical NSAIDs on par with or ahead of oral NSAIDs for pain management in patients with knee and hand osteoarthritis, and as the first-line choice in persons aged ≥ 75 years.

Primary symptoms of OA include joint pain, stiffness and movement limitation with occasional effusion and variable degrees of local inflammation. Treatment goals are to manage pain, reduce inflammation and maintain joint function. NSAIDs are central to the

pharmacological management of OA. However, frequent or prolonged use of oral NSAIDs in chronic conditions such as OA raises tolerability and safety concerns, especially in more vulnerable populations such as the elderly and those with predisposing comorbidities including high cardiovascular risk, type 2 diabetes and renal dysfunction. Oral NSAIDs are associated with age- and dose-related risks of gastrointestinal, cardiovascular, renal and hepatic adverse events.

Topical NSAIDs operate under the same mechanism of action as oral NSAIDs but with localized absorption and effect. Topical NSAIDs provide analgesic concentrations at the site of pain/inflammation, while avoiding systemic distribution of drug at physiologically active levels.

Systematic reviews and meta-analyses reporting on the efficacy and safety of topical NSAIDs found that most evidence exists for topical ketoprofen and diclofenac. ***"Topical NSAIDs are effective and should be recommended as a first-line intervention for mild to moderate pain associated with musculoskeletal disorders."***

The National Institute for Health and Clinical Excellence (2014) recommends that for hand and knee OA, topical NSAIDs should be considered for pain relief ahead of oral NSAIDs, COX-2 inhibitors or opioids. The Osteoarthritis Research Society International reported topical NSAIDs are appropriate to treat knee OA in patients with or without comorbidities.

In the treatment of acute musculoskeletal pain (e.g., sprains, strains and overuse injuries) in adults, topical NSAIDs were found to provide significantly higher rates of clinical success (more patients with ≥50% pain reduction) than topical placebo during short-term use (less than 7 days), with an efficacy comparable to that of oral NSAIDs. Topical NSAIDs were well tolerated during short-term use.

The balance of lipophilic and hydrophilic components in gel-based formulations allows for faster diffusion across the skin and greater absorption in local tissues when compared with ointments and creams. Gels have better cosmetic acceptability since they spread and vanish more readily and are devoid of fatty components that leave a greasy residue. When assessed for ease of application, rate of penetration, after-feel and scent, ketoprofen gel scored higher than diclofenac and piroxicam.

Pain Manag. (2018) 8(2), 115–128

Ask our pharmacist about customized topical NSAIDs.

Low Dose Naltrexone (LDN): Non-opioid Treatment for Chronic Pain Syndromes

Patients with cardiac failure, chronic lung disease, diabetes, and other terminal illnesses account for two-thirds of patients in need of palliative care, and they can experience comparable pain to that of patients with cancer. Management is crucial because pain can have a devastating impact on the quality of life. Opioid-based medications can cause gastrointestinal (GI) side effects such as nausea and constipation, mental status changes, hemodynamic disturbance, and respiratory depression. There is also concern about the long-term use of opioids, given the potential for addiction and abuse, as well as the possibility of opioid-induced hyperalgesia.

Non-opioid analgesics have limitations due to GI, cardiovascular, and renal adverse effects; therefore, an alternative approach to pain management is needed that would adequately alleviate pain and enhance quality of life without significant risks. Low Dose Naltrexone (LDN) is increasingly used as an off-label treatment for several autoimmune diseases including multiple sclerosis and inflammatory bowel disease, as well as chronic pain disorders including fibromyalgia, complex regional pain syndrome (CRPS), and diabetic neuropathy. LDN also has the potential to improve mood disorders and enhance the quality of life.

Naltrexone used in doses of 1 to 5 mg (LDN) acts as a glial modulator with a neuroprotective effect. LDN binds to Toll-like receptor 4 (TLR4) and acts as an antagonist, therefore inhibiting the downstream cellular signaling pathways that ultimately lead to pro-

inflammatory cytokines, therefore reducing inflammatory response. Another mode of action of LDN involves transient opioid receptor blockade which upregulates opioid signaling and results in increased levels of endogenous opioid production, known as opioid rebound effect.

LDN may also be helpful in treating cancer-related pain and may improve quality of life in patients unable to tolerate chemotherapy due to LDN's immune-enhancing effects. Research indicates that LDN may promote resilience and emotional well-being, as well as improvement of psychiatric problems such as anxiety and depression. However, larger studies need to confirm these potential benefits.

LDN is inexpensive and has a low side effect profile, with some reported incidences of vivid dreams, nightmares, headaches, and anecdotal reports of anxiety and tachycardia. There has not been any observed toxicity or withdrawal symptoms with chronic use. Naltrexone is primarily renally excreted; however, dose adjustment is not needed with mild-renal impairment. Dose adjustments in moderate to severe renal impairment have not been studied. Naltrexone does not significantly affect liver function.

LDN is not commercially available but can be prescribed for preparation by our compounding pharmacy.

Am J Hosp Palliat Care. 2019 Oct;36(10):907-912.