MUSCLE SORENESS

The following study found that transdermal ketoprofen was effective in treating delayed-onset muscle soreness, with a minimal incidence of systemic absorption and/or adverse events - "Efficacy of transdermal ketoprofen for delayed onset muscle soreness" (Clin J Sport Med. 2003 Jul;13(4):200-8).

OBJECTIVE: To determine the efficacy of transdermal ketoprofen in reducing delayed-onset muscle soreness (DOMS), limiting systemic absorption, and improving postexercise function following repetitive muscle contraction.

DESIGN: Double-blind, placebo-controlled clinical trial.

SETTING: OrthoMed, University of California at San Diego, La Jolla, CA, U.S.A.

PARTICIPANTS: Thirty-two healthy males 18 to 35 years old.

INTERVENTIONS: Subjects performed a leg extension and flexion exercise program designed to create DOMS in quadriceps muscles. Subjects were randomly assigned to receive any combination of transdermal ketoprofen or placebo cream, applied TID, to their right and left quadriceps.

MAIN OUTCOME MEASURES: Subjective measure of DOMS in quadriceps muscles, serum ketoprofen levels, strength index scores (a measure of postexercise function), and adverse reactions were assessed at baseline, 24 hours, and 48 hours.

RESULTS: Within-subjects analysis (n = 16) showed a significant reduction in DOMS scores in legs receiving transdermal ketoprofen compared with legs receiving placebo cream (P = 0.002 at 48 hours and 0.000 at 24 and 48 hours combined). Between-subjects analysis (n = 16) showed a marginally significant reduction in DOMS scores at 48 hours (P = 0.05 in right legs and 0.053 in left legs). Systemic absorption was minimal, with serum ketoprofen levels in the ng/mL range. No differences in strength index scores were observed. No adverse reactions were reported.

CONCLUSIONS: Transdermal ketoprofen appears to be effective in reducing self-reported DOMS after repetitive muscle contraction, particularly after 48 hours. Systemic absorption of the drug was minimal. Treatment did not appear to have any effect on postexercise function, and there were no reported adverse reactions. PMID: 12855921

We have the ability to compound ketoprofen as a transdermal gel in varying strengths to meet the unique needs of each of your patients.

This study found that ketoprofen treatment after muscle damaging exercise reduces muscle soreness and improves force recovery - "Effect of ketoprofen on muscle function and sEMG activity after eccentric exercise" (Med Sci Sports Exerc. 2001 May;33(5):702-10).

PURPOSE: This study examined whether ketoprofen, a nonsteroidal anti-inflammatory drug, attenuated muscle soreness (SOR), improved maximal isometric force (MIF) recovery, and/or altered myoelectric activity after high-force eccentric exercise.

METHODS: 48 subjects were randomly assigned to one of four groups: CON: no exercise/no drug (N = 12); PLA: exercise + placebo (N = 12); TRT-100: exercise + 100 mg oral ketoprofen (N = 12); and TRT-25: exercise + 25 mg oral ketoprofen (N = 12). PLA, TRT-100, and TRT-25 were administered in a double-blind fashion. Baseline measurements of SOR, MIF, and surface electromyographic (EMG) amplitude were taken, and PLA, TRT-100, and TRT-25 performed 50 maximal eccentric contractions of the elbow flexors; 36 h later, subjects reporting moderate soreness were given ketoprofen or placebo and SOR measures were taken hourly for 8 h. EMG amplitude was assessed during MIF before dosing and again 8 h later and during submaximal contractions of 5%, 10%, and 20% of MIF before dosing and hourly for 8 h.

RESULTS: Eccentric exercise increased myoelectric activity during submaximal force measurements in PLA, TRT-100, and TRT-25 in all conditions. Ketoprofen had no effect on reducing this increase in EMG activity. Ketoprofen attenuated perceived SOR ($P < 0.05$) and enhanced MIF recovery ($P < 0.05$) compared with placebo. TRT-100 and TRT-25 demonstrated 10% and 19% reductions in SOR, respectively, and 16% and 9% increases in MIF, respectively, whereas PLA demonstrated a 1% increase in SOR and 9% decrease in MIF over 8 h.

CONCLUSION: Ketoprofen treatment after muscle damaging exercise reduces muscle soreness and improves force recovery. PMID: 11323536

An example of how you might prescribe follows:

COMPOUNDED MEDICATION

Ketoprofen 10%
Transdermal Gel
90gm
Apply sparingly TID