

# Topically Applied Quaternary Ammonium Compound Exhibits Analgesic Effects for Orthopedic Pain

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## Abstract

**OBJECTIVE:** To investigate the effectiveness of a topically applied emulsion of an analgesic ammonium solution for the temporary treatment of pain associated with arthritis, tendinitis, and bursitis. **DESIGN:** 100 subjects in a single center, presenting with chronic pain associated with arthritis, tendinitis, or bursitis trialed against placebo in a double-blind cross-over protocol. **MAIN OUTCOME MEASURES:** Measures of treatment success include reduction in pain, improvement in clinical and/or mechanical evaluations, and evaluation of local and systemic adverse effects. Analysis was conducted at two weeks, after one week's clearance, and again after two weeks. **RESULTS:** For chronic neuralgia associated with arthritis, tendinitis, and bursitis, the test material had a positive effect at temporary pain reduction. Several subjects also recorded improvements in mechanical evaluations from baseline. Withdrawals due to systemic or local adverse reactions were minimal. **CONCLUSION:** A topical emulsion of a strong ammonium solution utilizing quaternary ammonium, enhanced with certain penetration enhancers, is effective for temporary relief of pain associated with arthritis, tendinitis, and bursitis.

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## Introduction

Topically applied non-steroidal anti-inflammatory drugs (NSAIDs) are widely advertised and used for acute and chronic painful conditions. Relief from pain is a major impetus for seeking clinical intervention. There are millions of NSAID prescriptions written each year in the United States for the treatment of chronic pain and approximately \$300 million per year spent on over-the-counter topical remedies.<sup>1</sup> Marketing research indicates consumers are skeptical of the efficacy of topical products. There has been growing interest around the world in topically applied NSAIDs in over-the-counter preparations.

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