

## MUSCLE RELAXANT FOR PAIN MANAGEMENT

Dr. Imran Aslam

Department of Pharmacology, Samarkand State Medical Institute,  
Samarkand, Uzbekistan

Yuldashev Soatboy Jiyanboyevich

Department of Pharmacology, Samarkand State Medical Institute,  
Samarkand, Uzbekistan

Abdurakhmanova Zamira Ergashboevna

Department of Pharmacology, Samarkand State Medical Institute,  
Samarkand, Uzbekistan

Ibragimova Elnara Farmanovna

Department of Pharmacology, Samarkand State Medical Institute,  
Samarkand, Uzbekistan

Normetova Sevara Yangiboevna

Department of Pharmacology, Samarkand State Medical Institute,  
Samarkand, Uzbekistan

### ABSTRACT:

**Muscle relaxant can be effective in pain management. This review article aims to check to the effectiveness of muscle relaxant for reducing pain due to muscle contraction. Muscle relaxants are drugs that assistance to relieve muscular spasm, which are spontaneous muscle contraction produced by the spine-related condition like stroke, fibromyalgia, or low back strain. Muscle spasms can be unbearably painful and damage movement. Skeletal muscle relaxants are a varied range of structurally unrelated drugs with varying pharmacologic and safety profiles, while being grouped under a same pharmacological class. Spasticity and local musculoskeletal spasms are two disorders that are routinely treated with skeletal muscle relaxants.**

**Keywords: Muscle relaxants, a spasm, pain management.**

### INTRODUCTION:

The term muscle relaxer relates to a class of medications that function as CNS depressants and also have tranquilizing and musculoskeletal relaxant characteristics. Low-slung back pain (LBP) is routinely treated with muscle relaxants, but there is little indication of their clinical usefulness or tolerability. (Abdel et al., 2016) Muscle relaxant treats back pain. (Peter & Jason 2004) Tension headaches, low back pain, neck pain, myofascial pain and fibromyalgia syndrome are all common musculoskeletal diseases for which skeletal muscle relaxants are given. Management muscle, discomfort and increasing purposeful status so the patient can resume previous activities return to work are the main goals of treatment. (vanTulder et al., 2003) A muscular contracture is a persistent and involuntary muscle shortening that is the main cause of low back discomfort. The objective of a pharmaceutical treatment for a severe low

back pain is thus not only the pain that relieve but also muscular spasm and inflammation decreases. Eperisone, a novel muscle relaxant with no harmful effects on the central nervous system, has been effectively used. (Witenko et al., 2014)

Muscle relaxants that are antispasmodic or antispasticity have received extensive clinical approval as an adjuvant in the dealing of prolonged musculoskeletal pain. Medications that diminish muscular spasm like benzodiazepines (alprazolam (Xanax), lorazepam (Ativan), and diazepam (Valium)) and the medications that prevent increased muscle tone are examples of muscle relaxants (baclofen and dantrolene). (Richards & Bethan 1996) This class of medicines is extensively used to tackle severe back pain; it is frequently taken in greater doses and for longer periods of time than indicated. Because the data only supports their usage for acute low back pain, it should only be taken as a temporary pain reliever. This also avoids any underlying problem causing the discomfort from being covered up for too long. Muscle pain is a frequent ailment with a typically positive prognosis in the short term. In the delicate situation, muscle relaxants are usually recommended by the doctors. There are no clear indications for use or consequences. (Bernstein et al., 2004)

Skeletal muscle relaxants dampen the CNS and should be taken with caution in patients who are also taking opioid analgesics, alcohol, anxiolytics or other painkilling drugs. There is compelling proof that skeletal muscle relaxants are linked to an increased risk of overall deleterious effects, particularly those including the central nervous system. (Jackson & Kenneth 2008) Dizziness and drowsiness were most common and constant side effects linked by the central nervous system. (Toth & Urtis 2004)

#### LITERATURE REVIEW:

The phrase "skeletal muscle relaxants" mentions to a wide range of medicines with differing structural and pharmacological properties. Both spasticity and local musculoskeletal spasms are treated with skeletal muscle relaxants. Spasticity develops centrally as an effect of a motor neuron problem, whereas musculoskeletal twinges develop secondarily as an outcome of muscle strain or trauma. As a consequence, skeletal muscle relaxants centrally acting (e.g. baclofen) and peripherally acting (e.g. orphenadrine, cyclobenzaprine) cannot be used alternatively. Musculoskeletal spasms caused by throbbing peripheral musculoskeletal sicknesses are cured by using an Orphenadrine (Steyn, 2019)

More than the one-third of blunted thoracic injuries is rib fractures, which are associated with significant consequences. The use of nonopioid pain relievers such as the muscle relaxant methocarbamol has risen dramatically. The goal of this study was to see how adding methocarbamol to pain treatment affected on the daily basis opioid requirements of immature adults with the rib fractures. The major goal was to see how methocarbamol affected every day opioid requirements. The duration of stay in the hospital and the diagnosis of pneumonia were both secondary outcomes. There were 50 patients in all, with 28 patients in the postprotocol and 22 patients in the preprotocol groups, respectively. Methocarbamol was given to all of the patients in the later group, but not to any of the patients in the preprotocol group. Patients hospitalized after methocarbamol was added to the regimen had significantly lower cumulative opioid exposure (219 vs 337 mg oral morphine equivalents;  $P = 0.01$ ), as well as a shorter hospital stay (4 vs 3 days;  $P = 0.03$ ). There were no noteworthy dissimilarities in the occurrence of the pneumonia or unfavorable

effects. The study showed that the hazards associated with opioids, it may be appropriate to utilize methocarbamol as an analgesia-enhancing, opioid-sparing multimodal drug (Deloney et al., 2020).

**RELEVANCE:**

The research articles and reviews mentioned in this study are relevant to the goal of this study. The literature used is providing understanding the role of muscle relaxant in pain reduction. They explain which muscle relaxants are more efficient to overcome pain due to muscle spasms and contractions, especially in lower back.

**PURPOSE OF THE STUDY:**

Main goal of the study is to check an effect of the muscle relaxants for muscle involuntary contractions, low back strain or fibromyalgia. These ailments are common in the adults, especially the females and the review are done to reveal that whether muscle relaxants are helpful for pain management.

**METHODS OF RESEARCH:**

In this research a systemic review was conducted, random trails were performed individually and data was extracted. The goal of this study was to look at causes of back pain as well as the risks and the benefits of muscle relaxants, which is often used to treat the back pain. To find the most widely prescribed medications for the management of musculoskeletal pain, data from Intercontinental Marketing Services from January 2003 to January 2004 was collected. More than half of all such prescriptions were for carisoprodol, cyclobenzaprine hydrochloride, or metaxalone. The Cochrane Library, EMBASE and MEDLINE databases were examined.

Carisoprodol (13.29 percent), cyclobenzaprine hydrochloride (21.58 percent), and metaxalone (11.69) percent were the most commonly prescribed agents for management of musculoskeletal pain; according to Intercontinental Marketing Services (IMS) data (IMS is a company that manages pharmaceutical data.) Its data was used; as it is a leading source of information and analytics for health-care and pharmaceutical industries.

Cyclobenzaprine hydrochloride 5 mg and the metaxalone, clinical trials data was examined by US Food and Drug Administration (FDA) for the approval. To find these studies, researchers used a computer assist search of the Cochrane Library, MEDLINE, and EMBASE databases, as well as hand-searching reference lists from recognized articles. Back discomfort, pharmacotherapy carisoprodol, cyclobenzaprine, muscle relaxants, and metaxalone were among search phrases used from 1960 to January 2004.

**RESULTS:**

The Cochrane Library database revealed three carisoprodol trials (N = 197). In the literature, there were 2 double-blind, randomized, placebo-controlled trials examining the safety and efficacy of cyclobenzaprine hydrochloride (N = 1405). In two reports 3 double-blind were found, placebo-controlled studies for metaxalone (N = 428). The central nervous system was involved in the types of adverse effects documented with these drugs. Drowsiness, weariness, and dizziness are all symptoms of the neurological system. Pain alleviation was the key efficacy criteria utilized to assess the efficiency of cyclobenzaprine hydrochloride 5 mg. According to studies, cyclobenzaprine hydrochloride blocks alpha-motoneuronal tonic excitation formed by downward

serotonergic systems by acting on serotonin receptors at spinal level. For most people, the suggested dose of the cyclobenzaprine hydrochloride for the muscle spasm treatment is 5 mg TID. However, a high dosage has adverse effects.

#### CONCLUSION:

Muscle relaxant is a wide range of drugs used to deal muscle contractions and spasms in different regions of the body. Acute pain due to muscle contraction and spasms may result in immobilization. Randomized trials were conducted to check the efficiency of cyclobenzaprine and metaxalone. The trials demonstrated the benefit of carisoprodol and metaxalone overcome dysfunctional anatomy of muscles.

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