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Letter to the Editor

The Efficacy of Muscle Relaxants for Lower Back Pain Depends on the Underlying Pathophysiology

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Letter to the Editor

We read with interest the article by Long *et al*., which presents a systematic review and meta-analysis of studies involving adult patients with lower back pain (LBP) [1]. The study examined the systemic administration of antispasmodic muscle relaxants compared to an inactive control group [1]. The analysis of the existing literature indicated that muscle relaxants do not lead to better treatment outcomes for acute LBP and, therefore, should not be routinely prescribed in the emergency department [1]. Although the study is noteworthy, there are several aspects that warrant further discussion.

First, it should be noted that there is no single, monolithic form of "lower back pain". Rather, it can stem from a wide variety of causes. It may arise from the overuse of muscles, fascia, ligaments, tendons, or joint capsules - for instance, as a result of overstretching, lifting heavy loads, or sudden, awkward movements. Poor posture (e.g., a forward-leaning head position, a hunched posture, or prolonged sitting), obesity, or pregnancy can also trigger LBP. Furthermore, there may be structural or disc-related causes, such as disc bulges or herniations, degenerative disc disease, chondrosis, osteochondrosis, spinal stenosis, or scoliosis. Conditions affecting the bones or joints. Such as spondylosis, spondylarthrosis, osteoarthritis of the facet joints, Baastrup's phenomenon, osteoporosis, bone edema, compression fractures, or traumatic injuries, can also cause LBP. Furthermore, kidney stones, urinary tract infections, pyelonephritis, tumors, spinal infections (osteomyelitis, spondylodiscitis), radiculitis (e.g., Elsberg syndrome), ankylosing spondylitis, or rare systemic diseases can lead to LBP [2]. Given this etiological heterogeneity, treatment should vary depending on the underlying cause. The question therefore arises as to whether, and in which cases, the use of muscle relaxants might nonetheless offer a benefit.

Another point to consider is that there is not just one single muscle relaxant, but rather a whole range of them. Therefore, the effect depends significantly on the specific preparation used. Orally administered muscle relaxants include, among others, cyclobenzaprine, methocarbamol, tizanidine, baclofen, carisoprodol, orphenadrine, and benzodiazepines. Since the mechanisms of action of these substances differ, it is crucial to tailor the indication to the individual patient's health status, coexisting conditions, concomitant medications, and nutritional status. Furthermore, the effect and outcome can be substantially influenced by the dosage, as well as the pharmacokinetic and pharmacodynamic properties of the specific substance.

A third aspect is that the assessment of LBP in the studies examined was conducted using various pain scales [1]. In general, LBP can be evaluated through one-dimensional scales for measuring pain intensity (e.g., visual analogue scale, numerical rating scales), specific instruments for assessing functional limitations and disability (e.g., Oswestry Disability Index, Roland-Morris Disability Questionnaire, Quebec LBP Disability Scale), and multidimensional, general pain assessment tools (e.g., Brief Pain Inventory, McGill Pain Questionnaire, West Haven-Yale Multidimensional Pain Inventory) [3]. Because each of these instruments has its own specific advantages and disadvantages, the results of an LBP assessment can depend heavily on the particular scale employed.

Fourth, studies in which cannabidiol was used to alleviate low LBP were not included in the meta-analysis [1]. It is known that cannabidiol can be highly effective for certain patients suffering from LBP [4].

In summary, it cannot be stated categorically that muscle relaxants are generally ineffective for LBP. They can certainly be effective, though this depends heavily on the underlying cause and pathophysiology of the pain and the specific medication used. If the LBP has a muscular component, muscle relaxants can be a useful addition to other pain management interventions.

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