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Effectiveness of RICE/PRICE Protocol on Acute Ankle Sprain: A Literature Review

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ABSTRACT

Ankle sprains (AS) are one of the most common musculoskeletal injuries, associated with a high rate of visits to the emergency department. These injuries are particularly prevalent in sports like basketball and volleyball. These present up to 25% of all musculoskeletal injuries, and almost half of them are sports related. Lateral AS affecting the anterior talofibular ligament, calcaneofibular ligament, and peroneus muscles are most affected among all the ankle sprains. Rest, Ice, Compression, Elevation (RICE) and Protection, Rest, Ice, Compression, Elevation (PRICE) protocols are commonly used to treat acute AS. Despite widespread use, the effectiveness of the RICE/PRICE protocol for acute or subacute AS lacks strong evidence support. Therefore, this literature review aims to evaluate and discuss their effectiveness in reducing pain and improving functional outcomes for individuals with acute or subacute AS. A comprehensive literature search was conducted within the databases PubMed, EMBASE, and Cochrane Library for full-text articles published in English language between 2019 to 2024, exploring the treatment of acute or subacute AS with RICE or PRICE protocol. The search strategy used terms such as “RICE”, “PRICE”, “Acute Ankle Sprain”, “Pain Management” and “Functional Outcomes” employing Boolean operators.No articles were excluded based on their geographical origin or the manner in which their study design was presented. A total of 748 articles were identified, out of which only five met the inclusion criteria. These studies suggest the use of RICE and PRICE protocol as an adjunct to conventional physiotherapy and external orthotic support to have an effective and significant improvement in pain and functional outcomes following acute AS. The quality of the included research varied, and several had methodological problems, despite the encouraging data. While initial findings from a limited number of studies suggest potential benefits when combined with conventional physiotherapy and external support, the evidence base remains weak. Further high-quality research with robust methodologies is crucial to establish the true efficacy of RICE/PRICE in improving pain and functional outcomes for individuals with AS.

Keywords: Ankle injuries, Lateral ligaments, Pain management, Physical therapy modalities, Sprains and strains