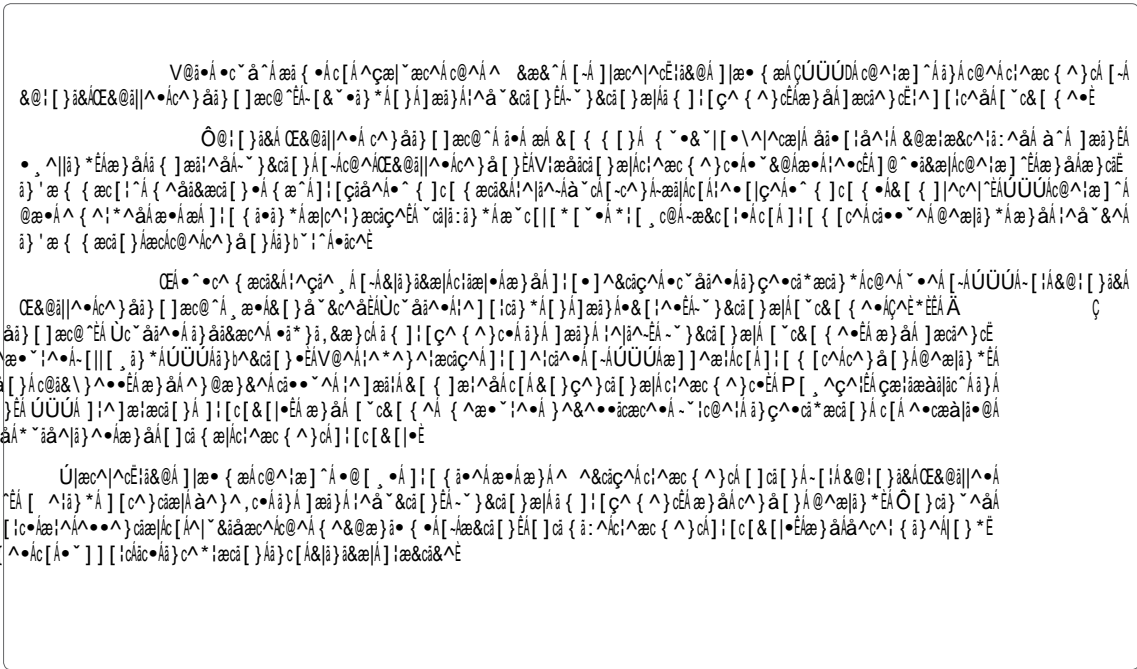


The Efficacy of Platelet-Rich Plasma in the Treatment of Chronic Achilles Tendinopathy

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Keywords: Platelet-rich plasma; Chronic achilles tendinopathy; Tendinosis; Tendon healing; Regenerative medicine

Introduction

Chronic Achilles tendinopathy represents a challenging condition characterized by persistent pain, swelling, and impaired function of the Achilles tendon, affecting both athletic and non-athletic populations. Despite various conservative treatments such as rest, physical therapy, and non-steroidal anti-inflammatory drugs (NSAIDs), many patients continue to experience symptoms and functional limitations. Platelet-rich plasma (PRP) therapy has emerged as a promising alternative in the management of chronic Achilles tendinopathy, leveraging the regenerative potential of autologous platelets to promote tendon healing and alleviate symptoms.

The Achilles tendon, the largest and strongest tendon in the body, is essential for normal ambulation and athletic performance. Overuse, repetitive stress, and biomechanical factors contribute to degenerative changes within the tendon, leading to the development of tendinopathy characterized by tendon thickening, disorganization of collagen fibers, and neovascularization. These structural alterations disrupt tendon function and contribute to the persistence of symptoms despite conservative treatments [1].

PRP therapy involves the extraction of a patient's own blood, which is then centrifuged to concentrate platelets and growth factors. The resulting PRP solution is injected into the site of tendon injury, where it releases bioactive proteins that promote cellular proliferation, collagen synthesis, and tissue regeneration. By harnessing the body's natural healing mechanisms, PRP therapy aims to accelerate tendon

repair, reduce inflammation, and improve tendon biomechanics.

The rationale behind PRP therapy for Achilles tendinopathy lies in its potential to address the underlying pathology of tendon degeneration rather than merely masking symptoms. Clinical studies and systematic reviews have reported encouraging results, with PRP injections demonstrating significant improvements in pain scores, functional outcomes, and patient-reported measures compared to placebo or traditional treatments. However, variations in PRP preparation protocols, injection techniques, and patient selection criteria contribute to the heterogeneity of study outcomes, warranting further investigation and standardization of treatment protocols [2].

This introduction sets the stage for a comprehensive review of the efficacy of PRP therapy in the treatment of chronic Achilles tendinopathy. By critically evaluating existing literature and clinical evidence, this study aims to elucidate the mechanisms of action, assess

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treatment outcomes, and guide clinical decision-making to optimize patient care and enhance treatment outcomes for individuals suffering from this debilitating condition.

Chronic Achilles tendinopathy is a prevalent and often debilitating condition characterized by persistent pain, swelling, and functional impairment of the Achilles tendon. As the largest and strongest tendon in the human body, the Achilles tendon plays a crucial role in facilitating ambulation and supporting athletic activities. However, repetitive stress, overuse injuries, biomechanical abnormalities, and age-related degenerative changes can lead to the development of tendinopathy, which significantly impacts the quality of life of affected individuals [3].

Traditional treatment approaches for chronic Achilles tendinopathy include rest, physical therapy, non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroid injections, and in severe cases, surgical intervention. While these interventions may provide temporary relief,

may further enhance its therapeutic potential and broaden its application in musculoskeletal medicine [10].

Conclusion

In conclusion, while PRP therapy shows promise as a viable treatment option for chronic Achilles tendinopathy, continued research e orts are essential to establish its role in clinical practice de nitively. By addressing current limitations and building upon existing evidence, orthopedic practitioners can better integrate PRP therapy into comprehensive treatment algorithms, ultimately improving patient outcomes and quality of life in individuals su ering from this challenging tendon disorder.

Acknowledgement

None

Conflict of Interest

None

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