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Comparison of Efficacy of Prolonged Release Diclofenac Tablet, Zerodol - SP tablet, and Hot fomentation with Salt in the management of Acute Gout Attack

Case Report

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ABSTRACT

A male in his thirties experienced an acute gout attack. Initially, physicians prescribed a combination tablet of paracetamol, aceclofenac, and serratiopeptidase, along with a topical diclofenac spray, but it did not provide full relief. Subsequently, he attempted hot fomentation with salt, which exacerbated his pain. Finally, after consulting with an orthopaedic specialist again, he opted for a prolonged-release diclofenac tablet, which ultimately alleviated his pain entirely.

Keywords: *NSAIDS, Hot fomentation with salt, Prolonged release preparation, Gout*

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INTRODUCTION

Gout is a prevalent type of inflammatory arthritis marked by sudden, intense episodes of pain, redness, and tenderness in the joints. This condition is caused by the accumulation of monosodium urate crystals in tissues, resulting from high levels of uric acid in the blood, known as hyperuricemia. The global incidence of gout has been rising, driven by dietary changes, increasing obesity rates, and aging populations.[1]

The development of gout is influenced by both genetic and environmental factors. Genetic factors play a key role in hyperuricemia, with variations in genes related to urate transport and metabolism. Environmental factors such as diet, alcohol intake, and certain medications also contribute to elevated uric acid levels.[2,3] Gout commonly presents as acute gouty arthritis, frequently affecting the first metatarsophalangeal joint, a condition referred to as podagra.

The standard treatment for acute gout attacks includes non-steroidal anti-inflammatory drugs (NSAIDs), colchicine, and corticosteroids. NSAIDs are the first-line treatment due to their effectiveness in reducing inflammation and pain. Commonly used NSAIDs for gout include indomethacin, naproxen, and diclofenac. Colchicine serves as an alternative for patients who cannot tolerate NSAIDs or have contraindications to their use, while corticosteroids are reserved for patients unresponsive to NSAIDs or colchicine or those with contraindications to these drugs.

Despite these treatment options, some patients may not find adequate relief with standard therapies, underscoring the need for personalized treatment approaches and alternative medications. In this regard, prolonged-release NSAID formulations, such as diclofenac, offer advantages in maintaining sustained drug levels, enhancing patient adherence, and reducing dosing frequency. [6]

This case report aims to highlight the limited effectiveness of certain NSAIDs, like aceclofenac and paracetamol, in treating acute gout attacks. It also emphasizes the potential harmful effects of using hot fomentation with salt in gout patients. Moreover, it demonstrates the efficacy of prolonged-release diclofenac tablets in managing acute gout attacks, supporting the consideration of this treatment option in clinical practice.

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Case Presentation

The patient, a man in his thirties with no history of trauma or comorbidities, experienced sudden and severe pain in the front of his left foot, behind the big toe. Despite attributing the pain initially to prolonged standing and possible insect bites, it persisted and worsened over two days. Seeking medical attention at Saveetha Medical College and Hospital in Chennai, X-rays revealed no fractures, leading the orthopaedician to diagnose musculoskeletal issues. Initially prescribed Zerodol-SP, a combination tablet of paracetamol, aceclofenac, and serratiopeptidase, the patient found no relief. Topical diclofenac spray provided partial relief, but the pain persisted despite two days of application. Attempting hot fomentation with salt on the affected area, as advised by a family member, only exacerbated the pain. Upon revisiting the orthopaedician, an acute gout attack was suspected, prompting a prescription of Prolonged-Release Diclofenac 100 mg tablet once daily for three days. With his serum uric acid level at 6.8 mg/dl, the patient experienced complete pain relief after taking just one diclofenac tablet, bringing him significant relief. The informed consent was obtained from the patient.

DISCUSSION

Gout is characterized by the deposition of uric acid crystals in tissues, commonly causing acute gouty arthritis, notably in joints like the first metatarsophalangeal joint (podagra). Non-steroidal anti-inflammatory drugs (NSAIDs) are the frontline treatment due to their anti-inflammatory properties.[5] However, in this case, initial therapies such as paracetamol, aceclofenac, and serratiopeptidase proved ineffective, highlighting paracetamol's lack of anti-inflammatory action unsuitable for managing acute gout.[7] Aceclofenac, known for its anti-inflammatory benefits, also failed to adequately alleviate severe gout symptoms, reflecting variability in NSAID efficacy.[8]

Moreover, topical diclofenac, typically effective for localized pain in musculoskeletal conditions, similarly failed to provide complete relief in this instance. This underscores challenges in achieving sufficient drug penetration and efficacy with topical treatments for acute gout attacks.

In comparison, NSAIDs like indomethacin, naproxen, and diclofenac have demonstrated efficacy in managing gout pain.[5] The ineffective response to aceclofenac highlights the necessity for personalized treatment strategies, including consideration of alternative medications or prolonged-release formulations, as demonstrated with diclofenac. Prolonged- release diclofenac not only effectively reduced inflammation and pain but also enhanced patient compliance through sustained drug levels and reduced dosing frequency.[6]

Additionally, exacerbation of symptoms with hot fomentation aligns with literature cautioning against heat application in acute gout due to potential exacerbation of inflammation.[9] This contrasts with the beneficial effects of cold therapy in symptom reduction, reinforcing current management guidelines.[10]

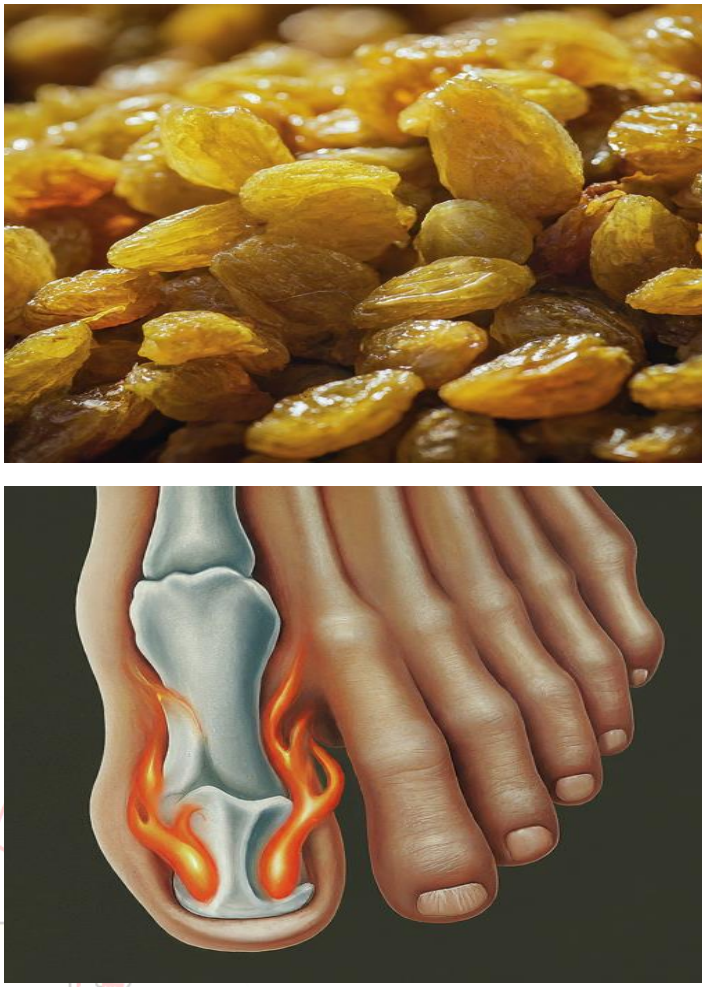

Figure 1. Image illustrating golden raisins and an acute gout attack at great toe.

Upon reviewing the patient's medical history, it was discovered that frequent consumption of golden raisins, high in purine content, likely triggered the acute gout attack. Consequently, the patient was advised to avoid protein-rich foods *[Figure 1]*.

The dietary trigger in this case—frequent consumption of purine-rich foods like golden raisins—underscores the importance of dietary modifications in gout management. This aligns with recommendations to limit purine intake to prevent recurrent attacks.[11]

CONCLUSION

In conclusion, this case underscores the limited efficacy of specific NSAIDs and the potential drawbacks of heat therapy in managing acute gout attacks. It emphasizes the ineffectiveness of topical diclofenac and the efficacy of tailored treatments like prolonged-release diclofenac, alongside the significance of dietary adjustments in gout management.

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