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"ONLY ENGLISH"

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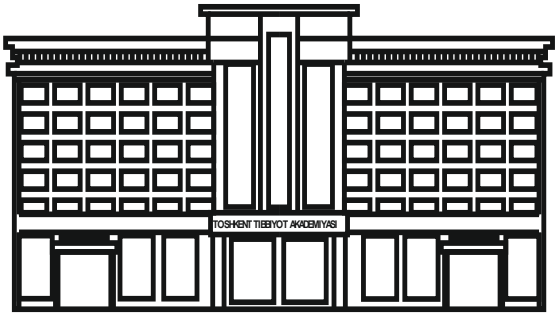

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GOUT AND GOUTY NEPHROPATHY: NEW ANALYSES AND INSIGHTS

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Abstarct: *Gout is a chronic metabolic disorder caused by the accumulation of uric acid in the body, primarily affecting the joints with the formation of uric acid crystals. It is a condition that can lead to joint inflammation, pain, and, in severe cases, result in gouty nephropathy, a kidney disorder. In this article, we will explore the prevalence of gouty nephropathy among patients with gout, diagnostic methods used, and the role of specific markers such as serum creatinine, systatin C, and renal Doppler ultrasound in diagnosis.*

Keys*: Gout, Nephropaty, doppler*

Patient Data. A total of 50 patients were included in the study. Among them, 46 were male and 4 were female. The patients' ages ranged from 40 to 70 years. A significant number of the patients were over the age of 55. During the study, these patients underwent a variety of diagnostic tests, including general blood tests, biochemical analysis, systatin C testing, and renal Doppler ultrasound.

Among the 50 patients with gout, 27 were diagnosed with gouty nephropathy, a condition where kidney function is impaired due to the deposition of uric acid crystals in the renal tissue. These 27 patients were predominantly older than 55 years, and their condition was often linked to chronic gout.

Gouty Nephropathy: Onset and Symptoms Gouty nephropathy is a late-stage complication of chronic gout, where uric acid crystals accumulate in the kidneys, causing tissue damage and inflammation. This condition usually develops after years of untreated or poorly managed gout, and the symptoms are often subtle, with kidney function declining over time. Gouty nephropathy is often asymptomatic until the kidney damage becomes more severe, which is why early diagnosis is crucial to prevent irreversible kidney failure.

Diagnostic Methods

1. Serum Uric Acid and Biochemical Analysis:

Among the patients in the study, elevated serum uric acid levels were found to be a common feature, particularly in those over the age of 55. The serum uric acid levels in most patients ranged between 7.0–9.0 mg/dL, indicating an increased risk of uric acid crystal formation and joint inflammation. High serum uric acid levels also correlate with kidney damage and the development of gouty nephropathy.

Biochemical tests showed elevated creatinine and urea levels in most of the patients with gouty nephropathy, suggesting impaired kidney function. These markers serve as indicators of renal stress and dysfunction, signaling the presence of kidney injury due to the effects of prolonged high uric acid levels.

2. Systatin C:

Systatin C is a sensitive marker used to evaluate kidney function. It is produced by all nucleated cells and is freely filtered by the glomeruli in the kidneys, making it an excellent biomarker for assessing glomerular filtration rate (GFR). Elevated systatin C levels are indicative of reduced kidney function, and in this study, systatin C levels were found to be significantly higher in the 27 patients diagnosed with gouty nephropathy. This increase suggests that these patients' kidneys were struggling to filter waste products efficiently, likely due to the accumulation of uric acid crystals.

3. Renal Doppler Ultrasound:

Renal Doppler ultrasound is a non-invasive imaging technique that assesses renal blood flow and the overall health of the kidneys. The study revealed that in patients with gouty nephropathy, there was a noticeable reduction in renal blood flow, especially in those over 55 years of age. The decreased blood flow is an indicator of kidney dysfunction and can be attributed to the damage caused by uric acid crystal deposition and the associated inflammatory processes. Renal Doppler ultrasound can therefore be a valuable tool for monitoring kidney health in patients with chronic gout.

The Relationship Between Gout and Gouty Nephropathy

The relationship between gout and gouty nephropathy is a crucial area of study. Gout, which begins with the accumulation of uric acid crystals in the joints, can progress to involve other organs, including the kidneys. The kidneys become affected when uric acid crystals deposit in the renal tissue, leading to inflammation and decreased renal function. Chronic gout is the most significant risk factor for developing gouty nephropathy, and this condition is more likely to occur in older individuals with poorly controlled serum uric acid levels.

In this study, the prevalence of gouty nephropathy was notably higher in patients aged over 55 years. The majority of these patients exhibited elevated systatin C levels, which correlated with kidney damage, and Doppler ultrasound showed reduced renal blood flow. These findings underline the importance of early detection and the need for continuous monitoring of kidney function in older gout patients.

Conclusion: The study highlights the significant association between elevated serum uric acid levels and the development of gouty nephropathy, particularly in older patients. The use of systatin C as a marker for kidney function and renal Doppler ultrasound as an imaging tool proved useful in identifying early signs of kidney damage in patients with gout. Furthermore, it is clear that older patients (especially those over the age of 55) are at higher risk of developing gouty nephropathy due to the prolonged exposure to high uric acid levels and the resulting kidney dysfunction.

Early intervention and regular monitoring are essential to prevent or slow the progression of gouty nephrop-

athy. Management strategies include controlling serum uric acid levels, improving hydration, dietary modifications, and the use of medications to lower uric acid levels. These measures, if taken early, can reduce the risk of kidney damage and improve the quality of life for patients with gout.

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