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How well do we recognise gout disease?

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Abstract

Objective: The clinical burden of gouty arthritis has historically been well recognized; however, gout is often misdiagnosed and mismanaged. In this study, we aimed to evaluate the diagnoses and treatments given to gout patients admitted to different specialties.

Methods: Patients who were diagnosed with gout attacks and treated by a rheumatologist were included, while patients with other non-gout rheumatic diseases (connective tissue diseases, rheumatoid arthritis, spondyloarthropathies, calcium pyrophosphate disease, etc.) were excluded. The branches the patients applied to during the attack, the treatments and diagnoses they received drugs, the number of attacks they had, demographic data, comorbidities, and laboratory data were recorded retrospectively.

Results: 424 gout patients were included. Patients were mostly male (70.7%). The mean age was 62.4± 12.4 years, and women were older than men (67.9±10 vs 62.4±12 years, p<0.001). Hypertension was the most common comorbidity, observed in 230 patients (54.2%). Among the patients who applied, 86 (20.2%) had previously been diagnosed, while 338 (79.7%) were diagnosed for the first time. The number of patients who had their first attack was 210 (49.5%), the number of patients who had their second attack was 88 (20.7%), and the number of patients who had ≥3 attacks was 126 (29.7%). The most commonly involved joint was the 1st metatarsophalangeal joint (MTF) and the second most commonly involved joint was the ankle joint. The rate of gout diagnosis was higher in patients presenting with podogra. The initial departments consulted during the incident were the emergency department first, followed by orthopedics and infectious diseases. Gout was the most common diagnosis, followed by trauma and injury, cellulitis, septic arthritis, and soft tissue infection. Nonsteroidal anti-inflammatory drugs(NSAIDs) were the most frequently prescribed drugs, followed by antibiotics and colchicine.

Conclusion: Gout is still not sufficiently recognized. Different diagnoses and treatments other than gout are made in applications to different branches. All physicians, regardless of their specialties, may be the first to see patients with gout attacks and therefore play a critical role in the diagnosis and treatment of these patients. With correct diagnosis and treatment, many visits to the doctor can be reduced.

Keywords: Gout, Attack, Gout mimics

Gut Hastalığını ne kadar tanıyoruz?

Öz

Amaç: Gut artritinin klinik yükü tarihsel olarak iyi bilinmektedir; ancak gut hastalığı sıklıkla yanlış teşhis edilmekte ve yanlış yönetilmektedir. Bu çalışmada, farklı uzmanlık alanlarına başvuran gut hastalarına konulan tanıları ve uygulanan tedavileri değerlendirmeyi amaçladık.

Yöntemler: Gut atağı tanısı alan ve romatoloji uzmanı tarafından tedavi edilen hastalar çalışmaya dahil edilirken, gut dışı diğer romatizmal hastalıkları (bağ dokusu hastalıkları, romatoid artrit, spondiloartropatiler, kalsiyum pirofosfat hastalığı vb) olan hastalar çalışma dışı bırakıldı. Hastaların atak sırasında başvurdukları branşlar, aldıkları tedaviler ve tanılar, geçirdikleri atak sayısı, demografik verileri, eşlik eden hastalıkları, laboratuvar verileri retrospektif olarak kaydedildi.

Bulgular: 424 gut hastası çalışmaya dahil edilmiştir. Hastalar çoğunlukla erkekti (%70,7). Ortalama yaş 62,4±12,4 yıldı ve kadınlar erkeklerden daha yaşlıydı (67,9±10'a karşı 62,4±12 yıl, p<0,001). Hipertansiyon 230 (%54,2) hastada görülen en yaygın komorbidite idi. Başvuran hastaların 86' sına (%20,2) daha önce tanı konmuşken, 338' ine (%79,7) ilk kez tanı konulmuştu. İlk atağını geçiren hasta sayısı 210 (%49,5), ikinci atağını geçiren hasta sayısı 88 (%20,7) ve ≥3 atak geçiren hasta sayısı 126 (%29,7) idi. En sık tutulan eklem 1. metatarsofalangial (MTF), ikinci sırada ayak bileği eklemiydi. Podogra ile başvuran hastalarda gut tanısı konulma oranı daha yüksekti. Atak esnasında ilk başvurulan bölümleri ilk sırada acil servis, ikinci sırada ortopedi ve üçüncü sırada enfeksiyon hastalıkları oluşturmaktaydı. Tanılardan ilk sırada gut varken, daha sonra en sık görülenler sırayla travma ve yaralanma, sellülit, septik artrit ve yumuşak doku enfeksiyonu oluşturmaktaydı. Nonsteroid antiinflamatuvar ilaçlar (NSAİD) en sık yazılanken, ikinci sırada antibiyotikler, üçüncü sırada kolşisin yer almaktaydı.

Sonuç: Gut hastalığı hala yeterli düzeyde tanınmamakta. Farklı branşlara başvurularda gut dışı farklı tanılar ve tedaviler yapılmakta. Uzmanlık alanları ne olursa olsun tüm hekimler gut atağını ilk gören kişiler olabilir ve bu nedenle bu hastaların teşhis ve tedavisinde kritik bir rol oynarlar. Doğru teşhis ve tedavi ile birçok doktor ziyareti azaltılabilir.

Anahtar kelimeler: Gut, Atak, Gut Taklitçileri.

INTRODUCTION

Gout is a common and curable disease caused by the deposition of monosodium urate crystals in tissue. Gout, historically known to as "the unwalkable disease" and the "disease of kings," was first recognized by the Egyptians in 2640 B.C. and later by Hippocrates in the fifth century B.C[1]. Gout was defined by podagra, which is discomfort in the first metatarsophalangeal joint[1]. The clinical impact of gouty arthritis has long been known; nonetheless, gout is frequently misdiagnosed and mistreated. The most important risk factor for the development of gout is a high blood urate content. Hyperuricemia (blood urate concentration over the saturation threshold) is commonly recorded in clinical practice and research when serum urate is greater than or equal to 7 mg/dL[2]. When deposited monosodium urate crystals trigger gout flare-ups, it manifests as intermittent, severely painful attacks of arthritis[2]. Over the 20th century, gout became more common, most likely as a result of shifting demographics in terms of age and the rise in the frequency of metabolic syndrome and related diseases[2]. There is no one number that accurately represents the frequency of gout worldwide because it varies greatly throughout ethnic groups and geographical areas[3]. Gout typically first manifests as an acute flare-up of inflammation that affects the foot or ankle[4]. It is self-limiting during 1–2 weeks, the so-called intercritical period, with total remission of joint inflammation signs and symptoms[2]. The first flare occurs after an asymptomatic period of hyperuricemia. Persistent hyperuricemia may lead to recurring flare-ups, known as polyarticular flares, that affect several joints, including the joints in the upper limbs, and grow

more frequent and persistent[4]. Acute arthritic symptoms, such as pain, edema, heat, redness, and difficulty moving the inflamed joint, are prevalent during gout flare-ups[5]. The first MTF joint is the most frequently involved site, while other foot and ankle locations are also frequently impacted, which can make difficulty with walking and other activities[6]. Flares frequently happen at night, when the patient wakes up with severe joint pain[7]. One could characterize the discomfort as throbbing, burning, gnawing, or stabbing[8]. The flare is accompanied by variable degrees of erythema, warmth, and swelling[9]. Fever and other signs of systemic inflammation may also exist, especially in the event of a polyarticular flare[3]. Patients seek the first available physician due to these symptoms. The consulted branches usually make differential diagnoses according to their areas of interest. Septic bursitis, septic arthritis, erythema nodosum, paronychia, fight bite, cellulitis, necrotizing fasciitis, tenosynovitis, and abscess are among the conditions that mimic gouty arthritis[2].

This study aimed to analyze the differential diagnoses and treatment approaches of various specialties in acute gouty arthritis attack.

METHODS

This study includes patients who applied to the rheumatology outpatient clinic with a diagnosis of gout between December 2019 and September 2023. The study included 424 patients aged between 18 and 89 years and diagnosed with gout according to the 2018 EULAR/ACR classification criteria[10]. Patients who were diagnosed with gout attacks and treated by rheumatologists were included, while patients with other non-gout rheumatic diseases (connective tissue diseases, rheumatoid arthritis, spondyloarthropathies, calcium pyrophosphate disease, etc.) were excluded. The specialties consulted during the attack, the treatments and diagnoses received, the number of attacks, demographic data, comorbidities, and laboratory data were recorded retrospectively. Demographic data; age, gender, body mass index, and comorbidities were recorded. The diagnoses made by other specialties in the patients were reviewed repeatedly and the diagnoses were clarified again with further examinations, imaging examinations, and consultations when necessary. Patients with a definite diagnosis of gout were included in the study after the exclusion of trauma, insect bite, paronychia, abscess, deep vein thrombosis (DVT), septic arthritis, erythema nodosum. Patients with gout and these diseases were excluded from the study. Pseudogout was not included in the study because of the potential difficulties in the early stages of differential diagnosis. Laboratory indicators were examined including blood urea nitrogen (BUN), serum creatine (Cr), uric acid(UA), glucose, alanine aminotransferase (ALT), aspartate aminotransferase (AST), total protein (TP), albumin (ALB), total bilirubin (TB), total cholesterol (TC), triglycerides (TG), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C); inflammatory indicators, involving erythrocyte sedimentation rate (ESR, normal range: 0–20 mm/H) and C- reactive protein (CRP, normal range: 0–5 mg/L). We defined hyperuricemia as a uric acid level ≥ 7 mg/dl for men and ≥ 6 mg/dl for women[11]. Body mass index (BMI) was calculated using the standing height and weight recorded in the medical record at the time of gout diagnosis. BMI was categorized based on the World Health Organization classification[12]: normal (18.5–24.9 kg/m2), overweight (pre-obese; 25–29.9 kg/m2), class I obesity (30–34.9 kg/m2), class II obesity (35–39.9 kg/m2), class III obesity ($\geq$ 40 kg/m2) Those with a BMI$\geq$30 kg/m2 were considered obese. This study was approved by the local ethics committee (approval date: 22/11/2023, decision no: ESH/GOEK 2023/55). All procedures were carried out according to the ethical rules and the principles of the Declaration of Helsinki.

Statistical Analysis

When evaluating the study data, quantitative variables were determined by mean, standard deviation, median, minimum, and maximum values; qualitative variables were indicated by descriptive statistical methods such as frequency and percentage. The Independent Sample T test was used for two-group comparisons of normally distributed parameters, and the Mann-Whitney U test was used for two-group comparisons of non-normally distributed parameters. Statistical analysis was performed using Statistical Package for Social Sciences (SPSS) 21. If $P<0.05$, the difference between the means was considered significant.

RESULTS

The study involved 424 patients and all patients were evaluated by a rheumatologist. Characteristics of the study group are listed in Table 1. Patients were mostly male (70.7%). The mean age was 62.4± 12.4 years, and women were older than men (67.9±10 vs 62.4±12 years, p<0.001). Of the gout patients, 384 (90.5%) were over 50 years old, while 40 (9.4%) were under 50 years old. The frequency of the comorbidities in the study group was as follows; obesity (n: 226, 53.3%), diabetes (n:100, 26 %), hyperlipidemia (n: 140, 36.4%), hypertension (n: 230, 54.2%), heart failure (n: 65, 16.9%), coronary heart disease (n: 120, 31.2%) and chronic renal failure (n: 132, 34.3%), stroke (n: 25, 6.5%), hepatic disorders (n: 26, 6.7%), malignancy (n: 18, 4.6%), osteoporosis (n: 45, 11.7%), other diseases (n: 20, 5.2%) and any comorbidity (100, 23.5%). The most commonly involved joint was the 1st MTF and ankle joint. The rate of gout diagnosis was higher in patients presenting with podogra. Among the patients who applied, 86 (20.2%) had previously been diagnosed, while 338 (79.7%) were diagnosed for the first time. The number of patients who had their first attack was 210 (49.5%), the number of patients who had their second attack was 88 (20.7%), and the number of patients who had ≥3 attacks was 126 (29.7%).

Table I: Patient characteristics and associated comorbidities

Variables	Overall, *n*(%)	Men, *n*(%)	women, *n*(%)
Sex	424	300 (70.7)	124 (29.2)
Age, mean, years	62.4	60.1	67.9
18-49	40 (9.4)	28 (9.4)	12 (9.6)
50-59	120 (28.3)	87 (27.6)	33 (26.6)
60-69	133 (31.3)	91 (29.8)	42 (33.8)
70-79	85 (20.0)	52 (18.1)	33 (26.6)
80-89	46 (10.8)	42 (14.9)	4 (3.2)
BMI, kg/m^2			
Underweight (<18.5)	6 (1.4)	6 (2.0)	0
Normal (18.5-24.9)	28 (6.6)	19 (6.3)	9 (7.2)
Overweight (25.0-29.9)	146 (34.4)	117 (39.0)	29 (23.3)
Class I Obesity(30.0-34.9)	137 (32.3)	104 (34.6)	33 (26.6)
Class II obesity(35.0-39.9)	50 (11.7)	25 (8.3)	25 (20.1)
Class III obesity (≥ 40)	39 (9.1)	21 (7.0)	18 (14.5)
Unknown	18 (4.2)	8 (2.6)	10 (8.0)
Major associated comorbidities			
			50 (40.3)
Hypertension	230 (54.2)	180 (60.0)	40 (36.6)
Coronary artery disease	125 (29.4)	85 (28.3)	27 (24.7)
Heart failure	65 (16.9)	38 (13.8)	10 (0.9)
Stroke	25 (6.5)	15 (5.4)	35 (32.1)
Diabetes mellitus	100 (26.0)	65 (23.6)	52 (47.7)
Hyperlipidemia	140 (36.4)	88 (32.0)	38 (34.8)
Renal disease	132 (34.3)	94 (34.1)	11 (10.0)
Hepatic disorders	26 (6.7)	15 (5.4)	8 (0.9)
Malignancy	18 (4.6)	10 (3.6)	30 (27.5)
Osteoporosis	45 (11.7)	15 (5.4)	24 (19.3)
Any comorbidity	100 (23.5)	76 (25.3)	4 (3.6)
Other	20 (5.2)	16 (5.8)	
Involved joint			
1.MTF			
Ankle	384 (90.5)	290 (96.6)	94 (75.8)
Knee	75 (17.6)	56 (18.6)	19 (15.3)
Metacarpophalangial	36 (8.4)	31 (10.3)	18 (4.0)
Proximal interphalangeal	12 (2.8)	6 (2.0)	6 (4.8)
Distal interphalangeal	14 (3.3)	12 (4.0)	2 (1.6)
	24 (5.6)	20 (6.6)	4 (3.2)

Table 2 shows the first admissions during the attack. The emergency department was the most common, followed by orthopedics and infectious diseases. While the number of patients admitted to the rheumatology department during the attack period was 58, according to the number of branches to which the patients were referred before coming to

rheumatology, the number of patients with one branch application was 102 (27.8.0%), two branch applications was 109 (29.7%), three branch applications was 124 (33.8%), four branch applications were 22 (6.0%), and the number of patients with five or more branch applications was 9 (2.4%). The number of patients who were laboratory tests checked by the physician to whom they were first applied were 285 (67.2%). The number of patients in whom uric acid level was checked in these tests was 186 (65.2%).

Table II: Distribution of patients according to attacks and branches applied

First applied branches	Total n(%):424	1st attack n(%): 210	2nd attack n(%): 88	≥3. attack n(%): 126
Emergency physician	127 (29.9%)	70 (33.3%)	32 (36.3%)	25 (19.8%)
orthopedics	93 (21.9%)	42 (20.0%)	21 (23.8%)	30 (23.8%)
Infectious diseases	44 (10.3%)	18 (8.5%)	14 (15.9%)	12 (9.5%)
Rheumatology	58 (13.6%)	10 (4.7%)	8 (9.0%)	40 (31.7%)
Family physician	23 (5.4%)	16 (7.6%)	3 (3.4%)	4 (3.1%)
Internal Medicine	33 (7.7%)	25 (11.9%)	4 (4.5%)	4 (3.1%)
Physical therapy and rehabilitation	22 (5.1%)	16 (7.6%)	3 (3.4%)	3 (2.3%)
Nephrology	14 (3.3%)	8 (3.8%)	2 (2.2%)	4 (3.1%)
Other branches	10 (2.3%)	5 (2.3%)	1(1.1%)	4 (3.1%)

Table 3, distribution of patients according to attacks and diagnoses. The most common department visited during the attack was the emergency department and the number of admitted patients was 127 and 48(37.7%) of them were diagnosed with gout. The diagnoses made in order of frequency are gout, trauma and injury, cellulitis, septic arthritis, soft tissue infection, deep vein thrombosis, and paronychia. The number of patients whose uric acid levels were checked is 40. All patients with gout were administered NSAIDs, while steroids were initiated in 8 cases and NSAIDs in combination with colchicine in 32 cases. Of the patients who were started on colchicine, 10 were given 2 tablets at 2-hour intervals of 8-12 tablets daily, 6 were given 6 tablets/day, 12 were given 3 tablets/day, and 4 were given 2 tablets/day. Five patients were prescribed allopurinol while 68 patients (53.5%) were started on antibiotics. The number of patients referred to rheumatology from the emergency department was 40, most of whom had elevated uric acid levels. In 12 patients with suspected DVT, Doppler USG was performed, but no evidence of DVT was found.

Orthopaedics was the second most frequent specialty, admitting 93 patients (21.9%). The most common diagnoses are trauma, injury, septic arthritis, tendonitis, and soft tissue infection. Gout was considered in 18 (19.3%) patients. X-rays were taken in 85 of the patients. Five patients underwent arthrocentesis of the knee for suspected septic arthritis. The number of patients whose uric acid levels were checked is 25. All patients were given oral and local NSAIDs. Antibiotics were started in 52 patients. The number of patients who were started on NSAIDs and colchicine in patients with gout was 10, allopurinol was started in 4 patients, and colchicine and antibiotics were started together in 5 patients. Three patients with tophus who had not yet been diagnosed with gout were operated on with the preliminary diagnosis of tumor.

The third most common specialty was infectious diseases and the number of patients admitted was 44 (10.3%). The first diagnoses considered were respectively soft tissue infection, cellulitis, septic arthritis, paronychia, trauma, injury, septic arthritis, and gout.

Gout was considered in 8 (18.1%) of the patients. Number of patients whose uric acid levels were checked[15]. All patients were given antibiotics and NSAIDs. The number of patients who were started on NSAID and colchicine for gout was[2].

Most of the patients admitted to internal medicine and nephrology departments had comorbid factors and were followed up in these departments, so they were also admitted during the attack. The percentage of gout diagnosed in internal medicine and nephrology is 75.7% and 85.7%. Patients diagnosed with gout were started on colchicine, NSAID, steroid, and allopurinol.

Patients presenting to the rheumatology department with a gout attack were examined on the same day. While the number of patients presenting with the first attack was low (4.7%), the rate of referral to rheumatology with recurrent attacks increased with the exclusion of other causes as the number of attacks increased (31.7% with ≥3rd attack). The number of patients on colchicine at admission was 75, allopurinol 28, and febuxostat6. All patients were diagnosed by excluding other causes and observing an acute gouty arthritis attack. Diagnosed patients were treated according to their comorbid factors. The number of patients given colchicine during the attack was 412, the number of patients given steroids was 225, the number of patients given NSAİDs was 140, the number of patients started on uric acid lowering therapy during the attack was 82, while the number of patients started on uric acid lowering therapy after the attack was 302.

Patients also applied to physical therapy, family physicians, dermatology, cardiovascular diseases, and cardiology departments during the attack, and it was observed that each department was examined and treated for their diseases. It has been observed that, like other branches, the differential diagnosis of gout is little considered.

Table III: Distribution of patients according to attacks and diagnoses

Diagnosis at first presentation	Total n(%):424	1st attack n(%): 210	2nd attack n(%): 88	≥3. attack n(%): 126
Gout	117 (27.5%)	53 (25.2%)	22 (25.0%)	42 (33.3%)
Trauma and injury	66 (15.5%)	33 (15.7%)	14 (15.9%)	19 (15.0%)
Cellulite	62 (14.6%)	38 (18.0%)	14 (15.9%)	10 (7.9%)
Septic arthritis	54 (12.7%)	25 (11.9%)	11 (12.5%)	18 (14.2%)
Soft tissue infection	48 (11.3%)	20 (9.5%)	12 (13.6%)	16 (12.6%)
Deep vein thrombosis	21 (4.9%)	10 (4.7%)	3 (3.4%)	8 (6.3%)
Erythema nodosum	15 (3.5%)	9 (4.2%)	4 (4.5%)	2 (1.5%)
Paronychia	12 (2.8%)	6 (2.8%)	2 (2.2%)	4 (3.1%)
Tendinitis	8 (1.8%)	6 (2.8%)	0	2 (1.5%)
Insect bite	10 (2.3%)	6 (2.8%)	2 (2.2%)	2 (1.5%)
Abscess	11 (2.5%)	4 (1.9%)	4 (4.5%)	3 (2.4%)

DISCUSSION

The typical first presentation of gout is an intensely painful acute inflammatory arthritis (gout flare) affecting a lower limb joint[13]. In the absence of treatment, the gout flare is typically self-limiting over 7–14 days. After resolution, there is a pain-free asymptomatic period (intercritical gout), until another gout flare occurs. Over time, some people with persistent hyperuricemia also develop tophi, chronic gouty arthritis (persistent joint inflammation induced by monosodium urate crystals), and structural joint damage[2].

Gouty attacks often begin at night. They are characterized by a rapid onset and build-up of pain (usually 2–4 hours). The exquisite pain in acute gout is associated with warmth, redness, swelling, and decreased range of motion of the affected joint. Systemic symptoms and signs may also be present, such as malaise and low-grade fever (usually well tolerated and even unnoticed by the patient). Trauma, alcohol abuse, surgery, dietary excess, hypouricemia

and diuretic therapy, and severe medical illness can precipitate attacks[14].

The diagnostic value of a UA level is limited. A normal UA level does not exclude acute gout. As many as half of patients with acute gout may have normal UA levels during acute gout despite their increased UA pool[15]. Serum urate levels clearly can either increase or decrease with gout attacks and may even be below saturation levels for urate (6.8 mg/dL)[15]. As many as 49% of patients may have normal UA levels during bouts of acute gout[15]. Conversely, an elevated UA level alone does not serve as the sole criterion for gout. Most patients with hyperuricemia will never have an attack of gout.

The presence of local redness (erythema), uncommon in other causes of acute inflammation of articular structures, can be seen in crystal-induced arthritis and infectious (septic) arthritis, typically limited to small peripheral joints or superficial bursae or tendon sheaths. Overall, distinguishing between an infection and acute arthritis (septic or crystal-induced, like gouty arthritis) may be quite challenging. Ultrasound scans of the joints involved together with synovial fluid analysis remain the gold standard exams for the appropriate diagnosis; however, laboratory tests, including urate serum, inflammatory markers, and procalcitonin levels should be performed to provide a global view of the patient. Septic arthritis was considered in 12.7% of our patients, synovial fluid analysis was performed in those with knee swelling and no bacterial growth, synovial fluid analysis was not performed in those with MTF arthritis and antibiotic treatment was started. Septic arthritis was not considered in any of the patients who subsequently presented to rheumatology. Orthopedics and infectious diseases were the most common specialties to make this diagnosis.

Local symptoms and signs accompanying acute inflammation of articular and periarticular joint structures such as soft tissue edema and erythema of overlying skin may vary widely, from mild to severe, with the latter often mimicking cellulitis. Cellulitis causes pain and tenderness, edema, swelling caused by fluid buildup, redness of the skin warm to the touch, and fever. Cellulitis is a potentially serious skin infection caused by different types of bacteria (β-hemolytic streptococci, and generally group A streptococcus, i.e., Streptococcus pyogenes, followed by methicillin-sensitive Staphylococcus aureus[16]) may be clinically similar to a gouty attack, especially when involving lower limbs with concomitant redness and soft tissue swelling. Cellulitis was considered in 14.6% and soft tissue infection in 11.3% of our patients and antibiotics were started in all of them and infectious diseases and orthopedics were the most common specialties to make this diagnosis.

Erythema nodosum is the most common form of panniculitis and is characterized by tender erythematous nodules mainly in the lower limbs on the pretibial area[17]. The clinical course of EN is characterized by an acute onset of sensitive and erythematous nodules and plaques of 1–6 cm in diameter. Lesions are bilateral and symmetric, typically distributed on the distal lower extremities of the pretibial areas, although lesions can also involve the ankles, thighs, and forearms[17]. Lesions in and around the ankle may be confused with gout due to sudden onset and accompanying fever. However, it can be differentiated from gout by being symmetrical and distant from the joint periphery, especially in the pretibial area. It was considered in 3.5% of our patients and emergency physicians were the most common specialty to make this diagnosis.

Several insects, including bees, spiders, fleas, hornets, wasps, and mosquitoes can bite or sting. This is especially common in rural areas. Suspicion of insect bites may be among the preliminary diagnoses in emergency

applications in patients with findings such as redness, swelling, pain, and tenderness in and around the ankle. Insect bites were suspected in 2.3% of our patients at emergency presentation. The most important point in the differential diagnosis is the location of the bite and the accompanying itching and non-articular locations.

Sprains and strains are usually minor injuries that often occur during sports, exercise, or other physical activity. A sprain is an injury to a ligament, the tissue that links bones together at joints. Sprains happen most often in the ankle, knee, elbow, or wrist. Strain or trauma is the initial diagnosis in patients presenting with swelling of the big toe and ankle Although none of our patients had a history of trauma, accident, etc., it was observed that it was associated with a history of long travel, long-standing, and long walking. This diagnosis was especially high in orthopedics and emergency department applicants. Trauma, injury, strain, and sprain were diagnosed in 15.5% of our patients and most of them were treated with rest, cold treatment, and NSAIDs.

There are 3 different types of treatment needed in patients with gout[18]. The treatments include treatment of the acute attack; using urate-lowering drugs to decrease the increased total UA pool, and providing prophylaxis to prevent acute attacks while using urate-lowering drugs. The options available for the treatment of acute gout are NSAIDs, colchicine, and systemic and intraarticular corticosteroids. The most frequently used combinations are NSAIDs with intraarticular or oral corticosteroids and NSAIDs with oral colchicine. The number of patients diagnosed with gout before consulting a rheumatologist was 117 (27.5%) and the number of patients on colchicine at admission was 75 (17.6%). It was observed that the use of colchicine in some of our patients was incorrect. Historical dosing of colchicine followed the "dose to diarrhea" mantra, with a dose

administered every 2 hours until any of the following occurred: relief of gouty arthritis, toxicity (diarrhea, nausea, vomiting), or achieving a maximum dose of 4.8 mg[19]. Although colchicine has been used for many years, it has been studied in only two randomized controlled trials for acute gout flares[20]. Low-dose colchicine commenced within 12 h of a flare (1.2 mg immediately followed by 0.6 mg after 1 hour) is as effective as high dose (1.2 mg immediately followed by 0.6 mg hourly for 6 hours) and is associated with substantially fewer adverse effects, particularly gastrointestinal adverse effects[20]. Thus, low-dose colchicine is the preferred option.

Important developments in the clinical management of gouty arthritis have occurred in recent years. The ACR/EULAR gout classification criteria provide clinicians with the ability to more specifically identify patients with acute gouty arthritis[10].

When asked about the reasons why patients applied to the branches during the attack, they stated that they thought it was due to the accessibility of emergency services and being seen without an appointment, for orthopedics, they thought it was due to a cause such as a fracture or sprain due to sudden swelling, limitation of movement, and for infectious diseases, they stated that they applied with signs of infection such as an increase in temperature and fever in that area.

In conclusion, although gout has been known for centuries, it can be confused with different diseases. Gout should always be considered in cases with a gout-like clinic such as septic arthritis, cellulitis, soft tissue infection, trauma, EN, DVT, and paronychia, which start with redness and pain in the lower extremities. With early diagnosis and treatment, participation in social life, work attendance, unnecessary treatment, and admissions can be prevented.

CONCLUSION

The burden of gout is significant. Acute gouty arthritis is a very painful and bothersome condition that is associated with a decreased quality of life. All physicians, regardless of their specialties, may be the first to see patients with gout and therefore play a critical role in the diagnosis and treatment of these patients. With correct diagnosis and treatment, many visits to the doctor can be reduced.

Ethics Committee Approval: This study was approved by the local ethics committee (approval date: 22/11/2023, decision no: ESH/GOEK 2023/55). It complied with the Helsinki Declaration's ethical criteria for human testing (2013).

Conflict of Interest: The authors declared no conflicts of interest.

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