

Clinical Profile of Filipino Patients with Young-onset Gout

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ABSTRACT

Objectives. Recent studies show that patients with young-onset gout present with visible tophi or nephrolithiasis on diagnosis. In the Philippines, where gout is prevalent, there is no published work on this subset of patients. This study presents the clinical characteristics of a cohort of Filipino patients with gout whose symptoms started at 30 years of age or younger.

Methods. The case records of all patients who fulfilled the 1977 American College of Rheumatology (ACR) criteria for gout seen in four adult rheumatology services were reviewed. We selected those whose age of onset of gout was at 30 years or younger. The demographic characteristics, medical history, laboratory parameters, and presenting manifestations were described.

Results. Six hundred sixty-nine records of patients with gout were reviewed; 101 (15%) fulfilled the young-onset gout criteria. The mean age of onset was 25 ± 4.40 years (range 14-30), and the mean disease duration before diagnosis was 12.64 ± 11.91 years. All of the patients were male and most were married; 76% were alcoholic beverage drinkers and 38% were smokers. A family history of gout was noted in 47%. Most patients (66%) were already on nonsteroidal anti-inflammatory drugs (NSAIDs), 24% on colchicine, and 14% on urate-lowering therapy before consult at the rheumatology clinic. By history, at onset, the most common pattern of joint involvement was monoarthritis (95%), affecting the ankles (60%), knees (52%), and 1st metatarsophalangeal (MTP) joint (51%). However, on the first rheumatology clinic visit, 34% of arthritis was polyarticular, more than 68% had more than three arthritis attacks per year, and there were tophi in 35%. The mean duration before visible tophi formation was 2.81 ± 6.75 years. Around 21% had nephrolithiasis or a history thereof. The mean serum uric acid (SUA) was 9.18 mg/dL and the mean serum creatinine was 1.5 mg/dL. Thirty-seven percent had estimated glomerular filtration rate (GFR) < 60 mL/min.

Conclusion. Young-onset gout was present in 15% of our patients and gout was familial in 47%. There was a delay in diagnosis of as long as ten years in most of the patients. On presentation at the rheumatology clinic, more than 34% had polyarticular arthritis, 35% had tophi, and 37% had low estimated GFR. This emphasizes the importance of awareness and prompt diagnosis to ensure correct treatment and prevention of complications.

Key Words: young-onset gout, Philippines, gout

INTRODUCTION

Gout represents a heterogeneous group of diseases found exclusively in humans, with peak occurrence of the first attack at 40 to 60 years in men and after age 60 among women. Its pathogenesis requires the accumulation of monosodium urate at levels sufficient enough to cause precipitation of crystals, which initiates an inflammatory response.¹

Its prevalence varies among populations, with an overall majority ranging from less than 1% to 15.3%.¹ Based on a nationwide survey done in 2003, the prevalence of gout in the Philippines is 1.6%.²

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In a study of 1,079 Chinese with gout in 1993, Yu et al. found that 25% of these patients had their first gouty attack before age 30. A family history of gout was noted in 39% of this young-onset gout population.^{3,4} In 2005, Danda et al. reported that in the Indian population, young-onset gout was seen in 18%. These patients often presented with acute intermittent polyarthritis, early tophi formation, and lower frequency of podagra when compared to those with older onset.⁵

The different patterns of arthritis increase the chances of misdiagnosis, improper treatment, and complications. It is, therefore, vital that other populations of young-onset gout be studied, compared, and understood.

In the 1990s, the onset of gout before age 30 was considered rare.⁶ However, recent reports show higher numbers of younger onset of gout.³ This is the first study to describe the clinical characteristics of young-onset gout in Filipinos.

METHODS

This is a retrospective study of gout patients seen in four adult rheumatology out-patient clinics. Data were anonymized to ensure the confidentiality of the record. The University of the Philippines Manila - Research Ethics Board approved this paper.

The case records of all patients seen in four adult rheumatology clinics from 2000 to 2014 that fulfilled the 1977 ACR criteria for gout and had gout symptoms at 30 years or younger age were reviewed. The patients' demographic characteristics, medical history, laboratory parameters, and presenting manifestations were recorded in a data collection form. In particular, the following features were noted: 1) age of disease onset; 2) disease duration before diagnosis; 3) age at diagnosis; 4) presenting a type of arthritis as to monoarticular, oligoarticular, or polyarticular; 5) joints involved at the onset of symptoms; 6) presenting a type of arthritis on

diagnosis; 7) baseline uric acid level; 8) presence of tophi; 9) history of urolithiasis; 10) medications before gout diagnosis.

Statistical analysis

The data were collated and expressed in means, standard deviations, frequencies, and percentages, depending on the variables defined.

RESULTS

A total of 669 records of gout patients were reviewed and 101 (15%) had young-onset gout. The mean age of onset was 25±4.40 (range 14-30) and the mean disease duration before diagnosis was 12.64±11.91 years. All of the patients were males and mostly married; 76% were alcoholic beverage drinkers and 38% were smokers. A family history of gout was noted in 48% of the patients. Most of them were already on NSAIDs (66%), while 24% and 14% were already on colchicine and urate-lowering therapy, respectively, before consultation at the rheumatology clinic (Table 1).

At the onset, the pattern of joint involvement was monoarticular in 95% of the patients. The joints often affected were the ankles (60%), knees (52%), or the 1st MTP joint (51%) (Table 2). However, on the first rheumatology clinic visit, the pattern of joint involvement was equally distributed into mono-, oligo-, or polyarticular arthritis. Sixty-eight percent had more than three arthritis attacks per year. There were tophi in 35% and the mean duration from onset to visible tophi formation was 2.81±6.75 years. Around 21% had nephrolithiasis or a history thereof. The mean serum uric acid (SUA) was 9.81±6.75 mg/dL, and the mean serum creatinine was 1.50±0.93 mg/dL. Thirty-seven percent had estimated glomerular filtration rate (GFR) <60 mL/min.

Those with ≥3 attacks of arthritis per year had a significantly higher frequency of tophi (p<0.001). Those with a family history of gout had significantly less urolithiasis (p<0.01) and chronic kidney disease (p<0.01) (Table 3).

Table 1. Demographic characteristics of 101 patients with young-onset gout

Characteristics	Mean (SD) or Frequency (%)
Age at onset of symptom/s, mean (±SD), in years	25.00 (±4.40)
Age at diagnosis, mean (±SD), in years	36.20 (±11.70)
Disease duration before diagnosis, mean (±SD), in years	12.64 (±11.91)
Male gender	101 (100)
Single	27 (26.7)
Married	74 (73.3)
Secondary education (n=21)	7 (33.3)
Collegiate education (n=21)	14 (66.7)
Smokers (n=76)	29 (38.2)
Alcoholic beverage drinkers (n=76)	58 (76.3)
Family history of gout (n=78)	37 (47.4)
Medications before gout diagnosis	
NSAIDs	67 (66.3)
Colchicine	24 (23.7)
Allopurinol	14 (13.9)

Table 2. Joint involvement among patients with young-onset gout

Joint involvement (onset to diagnosis), n=90	Frequency (%)
Ankle	54 (60.0)
Knee	47 (52.2)
First metatarsophalangeal joint	46 (51.1)
Elbow	20 (22.2)
Wrist	17 (18.9)
MCP	16 (18.0)
Other metatarsophalangeal joints	11 (12.2)
PIP	10 (11.1)
DIP	3 (3.3)
Tarsal joints (n=82)	8 (9.8)

Table 3. Characteristics of patients classified according to the frequency of arthritis and family history of gout

	Mean (SD) or Frequency (%)			
	Serum uric acid	Presence of tophi at index consult	Presence/history of urolithiasis	GFR <60 mL/min at index consult
<3 attacks/year, n=25	8.67 (\pm 1.92)	2 (8)	2 (8)	4 (16)
\geq 3 attacks/year, n=54	9.13 (\pm 3.44)	27 (50)	8 (15)	17 (31)
No family history of gout, n=41	9.43 (\pm 3.74)	16 (39)	11 (27)	17 (41)
Family history of gout, n=37	9.48 (\pm 2.21)	13 (35)	2 (5)	6 (16)

There were no significant differences in serum uric acid values between those with less or more frequent gout attacks per year and between those with or without a family history of gout.

DISCUSSION

Early reports show that less than 10% of gout patients have disease onset before 30 years.² However, the current study shows young-onset gout in 15%. This is close to the report made by Danda et al. which shows 18% with young-onset gout in his review of an Indian population, while a study from Taiwan shows a higher prevalence of 25%.^{4,5} In the present study, the mean age of gout onset is similar to that done in India (25 \pm 4.40 versus 24). Tophi were noted at diagnosis in 35%, compared to that among the Indian population (28.6%). The mean time from disease onset to tophi formation was 2.81 \pm 6.75 years, similar to the study in India (2.63 years).

As more than 95% of the patients present with a monoarthritis of the ankles, knees, or first MTP at onset, similar to gout in the older age group, there should not be any difficulty in disease recognition by physicians. However, the study shows a long delay from the onset of the first symptom to diagnosis of around 13 years. This prolonged time lag can be attributed to physicians' inability to recognize gout among young individuals or poor health-seeking behavior by patients. This delay allows gout to take its natural course and result in tophi formation, nephrolithiasis, and chronic kidney disease. More than a third of the patients already had tophi or low GFR on diagnosis, while 20% reported a nephrolithiasis history.

It was observed that more of those with three or more arthritis attacks in a year had tophi. Thus, the frequency of arthritis can serve to warn physicians of the presence of complications if these are not readily apparent. These patients may also need to be referred to the rheumatologist/specialist for treatment planning and follow-up. Another interesting observation was that those with a family history of gout seem to have fewer renal complications. We can only speculate about the implications of this finding.

CONCLUSION

Young-onset gout was present in 15% of our cohort. There was a family history of gout in 47%. Moreover, there was a delay in diagnosis in most of these patients. On presentation at the rheumatology clinic, more than 30% had polyarticular arthritis, 35% had tophi, and 37% had low estimated GFR.

This emphasizes the importance of awareness and prompt diagnosis so that correct treatment may be given and complications prevented.

Statement of Authorship

All authors contributed in the conceptualization of work, data collection and analyses, and approval of the final version submitted.

Author Disclosure

All authors declared no conflicts of interest.

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