

A survey on the clinical diagnosis and management of gout among general practitioners in Bandung

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ABSTRACT

Backgrounds: The global prevalence of gout and hyperuricemia is increasing in recent years. As the most visited health care service, it is thus become more important that general practitioners have proper approach in the diagnosis and treatment of patients with gout, in order to prevent complications of the disease as well as adverse effects of inappropriate and improper use of medications.

Objective: To determine whether the practice of general practitioners on the clinical diagnosis and management of gout in Bandung have been appropriate, with the implementation of evidence-based medicine.

Methods: This was a descriptive cross-sectional qualitative study, done by survey using a questionnaire, conducted among general practitioners who attended medical symposia in Bandung from January to March 2011.

Result: There were 173 respondents participating in this survey. Median age of respondents was 33 years (range 23–73 years), with median duration of practice of 7 years (range 0–45 years). The largest proportion of the respondents often suggested measurement of serum uric acid to patients with any joint pain (45.7%), did not recommend synovial fluid examination to patients suspected of having gout (80.8%), usually prescribed allopurinol to patients with asymptomatic hyperuricemia (52.6%), initiated allopurinol therapy during acute gout attack (35.8%), discontinued allopurinol therapy when serum uric acid normalizes (61.8%), and only very rarely gave prophylactic treatment to patients who started allopurinol therapy (43.4%).

Conclusion: The majority of general practitioners had not applied or aware about evidence-based medicine in the diagnosis and management of gouty arthritis.

Gout is an inflammatory disease of the joint that can induce severe pain and is caused by the deposition of monosodium urate crystals.¹ The disease is strongly associated with hyperuricemia, although not all individuals who have hyperuricemia will suffer from gouty arthritis. The prevalence of hyperuricemia and gouty arthritis worldwide has increased in recent years.² In Indonesia, the actual prevalence of hyperuricemia and gouty arthritis is not known. Previous studies found that the prevalence of hyperuricemia reached 18.9% in Desa Sembiran, Bali, 18.2% in Denpasar,^{3–5} but the prevalence of gout only 1.7% in Central Java.⁶

Joint pain is the most common complaint encountered by general practitioners;⁷ therefore, general practitioners have an important role in determining the etiology of the pain and ruling out the differential diagnoses. General practitioners must be able to make a clinical diagnosis of gouty arthritis and decide the appropriate management.⁸ Currently, Indonesia has no guideline for the diagnosis and management of gouty arthritis; so the diagnosis and management of gout arthritis is done according to the experts' opinion, causing differences in the diagnosis and management of gouty arthritis among general practitioners. If not treated properly, gouty arthritis can lead to recurrent attacks, become chronic with tophus formation, and can cause various complications, including disability.⁹

Residents and doctors in Indonesia have not been evenly distributed with most of them are located in Java.^{10–11} Bandung, as one of the major cities in Java, is where many residents and general practitioners live and practices.¹² In this study we aim to determine whether the practice of general practitioners on clinical diagnosis and management of gout in Bandung have been appropriate with evidence-based medicine.

METHODS

This is a descriptive cross-sectional qualitative study which was done by survey using a set of questionnaire. The survey was conducted among general practitioners who attended medical symposia in Bandung from January to March 2011. Questionnaires were distributed to the respondents prior to the commencement of the symposia and retrieved when the symposia is finished or at rest (convenient sampling technique).

The set of questions were adapted from the questionnaire on gout provided by Dr. H Ralph Schumacher, Jr. from the University of Pennsylvania and Dr. N. Schlesinger from the University of Medicine and Dentistry of New Jersey.¹³ The respondents were requested to choose only one best answer among the choices per question. The choices were grouped according to the appropriateness and consistency to concurrent practice opinion in the literature.¹⁴ Questionnaires with more than 3 items left unanswered or items with ≥ 2 answers were excluded from analysis.

The questions were grouped according to relevance of diagnostic procedure, management of arthritis with hyperuricemia, management of acute gout flare, management of recurrent, intercritical, and chronic tophaceous gout, management of gout through diet modification, and management of gout complication. Demographic characteristics of respondents included age, sex, and length of clinical practice.

Results were analyzed using Statistical Package for Social Sciences software version 17.0. Descriptive analyses included mean and standard deviation or median (for continuous numerical outcomes) and percentage/frequency distribution (for categorical data).

RESULT

Characteristics of respondents

Of the 481 questionnaires distributed, 201 (41.2%) were returned, and 173 (36.0%) were available for evaluation. Median age was 33 years (range 23–73 years), with 95 (54.9%) female respondents. Median length of clinical practice was 7 years (0–45 years). Characteristics of the respondents were elaborated in table 1.

Table 1 Characteristics of respondents (N = 173)

Characteristics	n (%)
Gender	
Male	71 (41)
Female	95 (54.9)
Unindicated	7 (4.1)
Age, years	
<30	59 (34.1)
30–39	49 (28.3)
40–49	30 (17.3)
50–59	14 (8.1)
≥60	15 (8.7)
Unindicated	6 (3.5)
Length of clinical practice, years	
<1	15 (8.7)
1–10	54 (31.2)
11–20	30 (17.3)
21–30	14 (8.1)
31–40	4 (2.3)
>40	1 (0.6)
Unindicated	55 (31.8)

Table 2 Respondents' answer to the questionnaire

No.	Questions	Answer	%
1.	<i>How often do you suggest measurement of serum uric acid level to patients with chief complaint of joint pain?</i>	Often Sometimes Very often Rarely	45.7 35.8 11.0 7.5
2.	<i>Do you usually recommend synovial fluid examination to patients with suspected gouty arthritis?</i>	No Yes Did not know Did not answer	80.3 16.9 2.3 0.6
3.	<i>A male patient presents with chief complaint of joint pain experienced for the first time, without signs of inflammation but with mild hyperuricemia. Do you administer allopurinol to this patient?</i>	Yes No Did not answer	56.1 43.4 0.6
4.	<i>If signs of inflammation are present, do you administer allopurinol to the abovementioned patient?</i>	Yes No	53.2 46.8
5.	<i>A patient is experiencing acute joint pain for the first time. The diagnosis of gout has been confirmed. Do you administer allopurinol to this patient?</i>	Yes No Did not answer	56.6 42.2 1.2
6.	<i>What dose of colchicine do you usually administer in acute gout attack?</i>	2 tabs/day for 3 days Until achieving max. dose of 6 tabs/day 1 tab/day for 3 days 3 tabs/day for 3 days Did not answer Every hour until pain is relieved Until abdominal toxicity occurs	19.7 18.5 17.9 15.0 13.9 10.4 4.6
7.	<i>What do you usually suggest the patient to do to the affected joint?</i>	Rest the joint No difference Frequently move the joint Did not answer	52.6 23.1 22.5 1.7
8.	<i>Ice packs can help relieve the pain in acute gout attack.</i>	Yes No Did not know Did not answer	54.9 37.6 5.8 1.7
9.	<i>Whom do you usually prescribe allopurinol to?</i>	Patients with asymptomatic hyperuricemia Patients who have had 1 acute gout attack in 1 year Patients who have had 2–4 acute gout attacks in 1 year Patients who have had >4 acute gout attacks in 1 year	52.6 25.4 19.7 2.3

10. <i>When do you usually initiate allopurinol therapy?</i>	During acute gout attack	35.8
	1–2 weeks after acute gout attack	31.2
	<1 week after acute gout attack	22.0
	>2 weeks after acute gout attack	10.4
	Did not answer	0.6
11. <i>When do you usually discontinue allopurinol therapy?</i>	When serum uric acid normalizes	61.8
	When serum uric acid is less than normal	22.5
	Never	11.0
	After 1 year	4.0
	Did not answer	0.6
12. <i>What is the target serum uric acid level do you usually set in the management of gout?</i>	<7.0 mg/dL	50.9
	<6.0 mg/dL	26.0
	<5.0 mg/dL	20.2
	Did not know	1.7
	Did not answer	1.2
	13. <i>When do you usually repeat the measurement of serum uric acid level?</i>	Every 3–6 months
Every month		39.9
Every 2 months		8.7
Every week		4.0
Did not answer		1.2
Every year		0.6
14. <i>When initiating allopurinol therapy, how often do you give prophylactic treatment to prevent acute gout attacks?</i>	Rarely	43.4
	Sometimes	37.6
	Often	17.3
	Very often	1.7
	15. <i>What prophylactic drug do you usually administer?</i>	NSAIDs
Do not usually give prophylactic treatment		34.7
Colchicine		11.6
Others		5.8
Did not answer		3.5
Corticosteroid		2.9
16. <i>Prior to reading this questionnaire, are you aware that gout can cause joint contracture?</i>	Yes	94.2
	No	4.6
	Did not know	1.2
17. <i>How do you usually prevent and manage joint contracture in gout patients?</i>	Educate the patient about joint movement	37.6
	Refer to the Dept. of Physical Medicine & Rehabilitation	28.3
	Tightly control serum uric acid level	19.1
	Did not answer	15.0

NSAIDs, nonsteroidal anti-inflammatory drugs.

Opinion of the respondents in the diagnosis of acute gouty arthritis (questions 1 & 2)

The largest proportion of respondents (45.7%) often suggest measurement of serum uric acid level to patients with chief complaint of joint pain. A small number (11.0%) even do this very often. The majority of respondents (80.3%) do not usually recommend synovial fluid examination to patients with suspected gouty arthritis.

Opinion of the respondents in the management of arthritis with hyperuricemia (questions 3 & 4)

Regardless of the presence of any signs of inflammation, more than half of the respondents would prescribe allopurinol to patients with chief complaint of joint pain and hyperuricemia.

Opinion of the respondents in the management of acute gout flare (questions 5–8)

In the management of acute gout flare, the largest proportion of the respondents (56.6%) administer allopurinol to gout patient with history of 1 episode of acute gouty attack. The respondents' answers are varied in the dose of colchicine, the largest three were 2 tabs/day for 3 days (19.7%), until achieving max. dose of 6 tabs/day (18.5%), and 1 tab /day for 3 days (17.9%). The majority of the respondents usually suggested their patients to rest the affected joint (52.6%) and agreed that ice packs can help relieve the pain in acute gout attack (54.9%).

The choice of drugs among general practitioners in the management of acute gouty attack in patients with normal or impaired renal function are presented in figure 1.

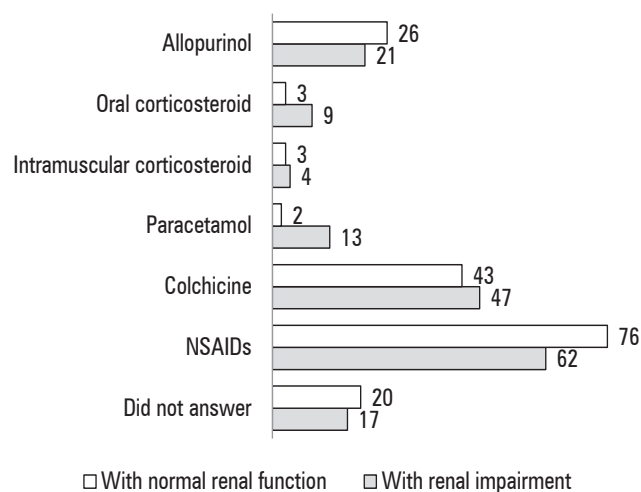


Figure 1 Preferred drugs among the general practitioners in acute gouty attack.

Opinion of the respondents in the management of recurrent, intercritical, and chronic tophaceous gout (questions 9–15)

The largest proportions of the respondents usually prescribe allopurinol to patients with asymptomatic hyperuricemia (52.6%), initiate allopurinol therapy during acute gout attack (35.8%), and discontinue allopurinol therapy when serum uric acid normalizes (61.8%). Most (43.4%) also only rarely administer prophylactic treatment when initiating allopurinol therapy.

Opinion of the respondents in the management of gout through diet modification

The majority of the respondents were aware that meat (beef and lamb), seafood, purine-rich vegetables, and alcohol can increase the risk of gouty arthritis, and that dairy products do not. The result is presented in more detail in figure 2.

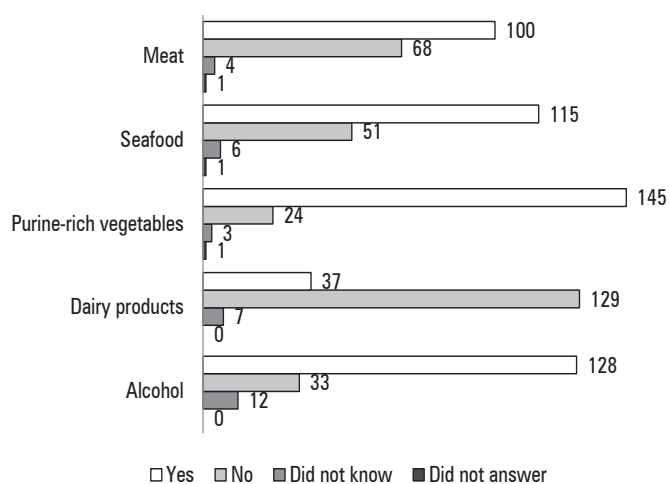


Figure 2 Proportion of the respondents based on their knowledge about the effect of certain diet in increasing the risk of acute gout attack.

Opinion of the respondents in the management of gout complication (questions 16 & 17)

Most of the respondents (94.2%) were aware that gout can cause joint contracture, and the largest proportion (37.6%) usually preferred education about joint movement as a mean to prevent joint contracture in gout patients.

DISCUSSION

There is currently no national guideline for the diagnosis and management of gouty arthritis in Indonesia; thus, guidelines from British Society of Rheumatology (BSR) and European League against Rheumatism (EULAR) Task for Gout, in addition to other recent studies about gout are usually used as guidance for the diagnosis and management of gouty arthritis in Indonesia. Some studies reported that the clinical diagnosis and management of gout is often not consistent with the acceptable practice guidelines available.¹⁴

There is currently a widespread assumption among many Indonesian people that joint pain is always caused by gout, while in truth there are numerous other conditions, such as osteoarthritis, avascular necrosis, crystals, hemarthrosis, joint infection, osteomyelitis, and trauma that can produce joint pain.⁷ Data from the rheumatology outpatient clinic at Hasan Sadikin Hospital in 2010 reported that gouty arthritis accounted for only 3.3% of cases with joint pain; most (72.9%) were found to be caused by osteoarthritis.¹⁵ Patients should be recommended to have their serum uric acid level measured only if the history and physical examination show signs and symptoms of gouty arthritis.⁷ The majority of respondents (56.7%) often, or very often, suggested that patients with chief complaint of joint pain had their serum uric acid level measured. While the gold standard in the diagnosis of gout is the presence of monosodium urate crystals in synovial fluid examined with polarized light microscopy,^{16–17} only 16.8% of the respondents would recommend this to patients with suspected gouty arthritis.

In the management of acute gouty attack in patients with normal renal function, most of the respondents (43.9%) preferred NSAIDs over colchicine (24.9%). Both drugs are acceptable treatment options for acute gout; the choice of drug depends on the physician's preference.^{14,18} Colchicine can be administered at a dose of 0.5 to 0.6 mg orally every hour until joint symptoms eased, the side effects on the digestive system developed, or the maximum dose of 6–8 doses has been reached.^{9,19,20} Recent study recommends that colchicine should be administered at a dose of 0.5 mg, given 2–4 times a day to minimize side effects.¹⁸ This survey showed that more respondents would give colchicine twice a day for 3 days (19.7%) or until the maximum dose of 6 tablets per day had been achieved (18.5%), or once a day for 3 days (17.9%).

In patients with renal impairment, NSAIDs and colchicine should be used with caution. NSAIDs are known to cause acute renal injury while the dosage of colchicine needs to be reduced in patients with renal impairment.^{20–21} The majority of respondents still preferred NSAIDs (35.8%) and colchicine (27.2%) in managing gout in patients with renal impairment.

In an acute attack, the affected joint should be rested, elevated, and exposed in a cool environment.¹⁸ Most of the respondents were already aware of this, by suggesting that the affected joint be rested (52.6%) and placed in a cool environment (54.9%).

Gouty arthritis can be experienced by patients without hyperuricemia and, conversely, patients with hyperuricemia do not always suffer from gouty arthritis.⁹ From the survey we found that more than 50% of the respondents would give allopurinol to patient with hyperuricemia and joint pain experienced for the first time although the diagnosis of gout had not been confirmed.

Allopurinol is the first-line drug for the management of hyperuricemia and gout, and should only be prescribed to hyperuricemic patient with recurrent gout, chronic tophaceous gout, urolithiasis, and urate nephropathy.^{22–24} This survey showed that most of the respondents (52.6%) would give allopurinol to patients with asymptomatic hyperuricemia or after the first gout attack (25.4%). While some studies had shown that hyperuricemia is associated with hypertension, chronic kidney disease, metabolic syndrome, and cardiovascular disease,^{25–28} and induce tophus formation,²³ there is no sufficient evidence which shows that allopurinol administration can greatly reduce the risk of gout attack in general population.¹⁴ Allopurinol is also known to cause digestive disturbance, skin rash, hypersensitivity, and toxic epidermal necrolysis, which may result in death.^{29–30} Some studies suggested that modification of an adverse lifestyle or removal of medicines provoking hyperuricemia will result in no further attacks of gout, while others suggested that 40% patients will not have a further attack within a year, and 7% will have none within 10 years.¹⁸ BSR recommends to initiate allopurinol therapy in patients who have 2 or more gouty attacks in a year.¹⁸ This more selective strategy in the administration of allopurinol can also reduce the cost of therapy.¹⁴ Of all the respondents in this study, only 19.7% would give allopurinol after 2–4 attacks in one year.

Treatment with allopurinol or any attempt to alter serum uric acid level during an acute flare will worsen the inflammatory reaction and prolong the duration of the acute flare;⁹ hence, it is suggested that allopurinol be started 1–2 weeks or more after the resolution of acute gout.¹⁸ This survey showed that 15.0% and 12.1% of the respondents preferred allopurinol as the drug of choice in acute gouty attack in patients with normal renal function and patients with renal impairment, respectively. Although there were more respondents (41.6%) who preferred to start allopurinol therapy at least 1 week after the resolution of acute gout, there were still 35.8% respondents who preferred to give allopurinol during acute attack.

To prevent acute gout attack in patients starting allopurinol therapy, prophylaxis should be administered concurrently. The first-line drug used for prophylaxis is colchicine. In patients who cannot tolerate colchicine, an NSAID can be used but the duration should be limited to 6 weeks. This survey showed

that there were only 1.7% of respondents who very often gave prophylaxis while 43.4% would only rarely did so. From those who usually administered prophylactic treatment, only 11.6% preferred colchicine. Once initiated, allopurinol should be kept lifelong with a dose sufficient to maintain serum uric acid level <5 mg/dL (BSR) or <6 mg/dL (EULAR).^{18,31} The majority of respondents would discontinue allopurinol when serum uric acid normalizes (61.8%) and of respondents set <7 mg/dL as the target serum uric acid level (51.5%). For follow up, BSR suggests to check serum uric acid level three-monthly for the first year and then annually thereafter.¹⁸

Some experts suggest that some restriction of purine intake is helpful in controlling gout and hyperuricemia in many patients, despite the fact that a totally purine-free diet only decreases the mean serum uric acid level by about 1 mg/dL.⁹ For dietary management, patients with gout should avoid red meat, seafood (especially shellfish), and alcohol, while they should increase the intake of low-fat dairy products such as skim milk and low-fat yoghurt.³² More than half of the respondents were aware that meat such as beef and goat (57.8%), seafood (66.5%), and alcohol (74.0%) would increase risk of gout while 74.6% were aware that dairy products would not increase risk of gout. Vegetables such as mushrooms, asparagus, cauliflower, spinach, lentils and soya beans are also rich in purines, but recent studies suggest that vegetarian diets high in purines are associated with lower levels of serum uric acid level and lower risk of gout.³² We found that only 13.9% of respondents were aware about this.

Tophaceous gout can cause joint contracture.³³ This can be prevented by strictly controlling serum uric acid level below 5 or 6 mg/dL.³⁴ Most of the respondents (94.2%) were aware that gout can cause joint contracture but only 19.1% would control serum uric acid level to prevent it.

The questionnaire used in this survey was not designed to determine the level of knowledge of the respondents, but only to assess the opinions of respondents about each question. The various opinions we obtained from the respondents showed that there was still a gap between the result of recent studies and the clinical diagnosis and management of gout applied in health-care centers in Bandung. This may increase the risk of gout patients to develop complications, including a decrease in the quality of life.³⁵ A guideline about the clinical diagnosis and management of gout is needed to improve the quality of healthcare services to patients with gout. Principles of gout management should be socialized to medical students, general practitioners, and specialist who may be treating patients with gout.

CONCLUSION

This survey showed that the majority of general practitioners in Bandung had not applied or aware of the diagnosis and management of gouty arthritis in accordance to evidence-based medicine.

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