



Introduction

Gout is a disease that occurs by the deposition of monosodium urate crystals (MSU) in body tissues, especially around joints.

Allopurinol is a xanthine oxidase enzyme inhibitor that is considered to be one of the most effective drugs used to decrease urate levels and is frequently used in the treatment of chronic gout. It was initially approved by the FDA in 1966. Management of gout with allopurinol will be the mainstream in this drug info.



Mechanism Of Action

Allopurinol inhibits xanthine oxidase, the enzyme responsible for the conversion of hypoxanthine to xanthine to uric acid. Allopurinol is metabolized to oxypurinol which is also an inhibitor of xanthine oxidase, reducing the production of uric acid without disrupting the biosynthesis of vital purines.

Indication

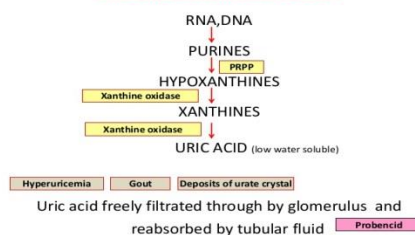
Allopurinol is indicated in:

- 1) the management of patients with signs and symptoms of primary or secondary gout (acute attacks, tophi, joint destruction, uric acid lithiasis, and/or nephropathy).
- 2) the management of patients with leukaemia, lymphoma and malignancies who are receiving cancer therapy which causes elevations of serum and urinary uric acid levels.

Dosage And Administration

Gout management: start at 100-150mg once daily, titrate in 100mg increments every 2 to 4 weeks to a dose of 300mg once daily to achieve the desired serum uric acid level. Doses $\geq 300\text{mg/day}$ are usually needed to reach the desired serum uric acid target ($<0.36\text{mmol/L}$). Maximum 800mg/day.

Uric acid production and excretion



REFERENCES:

- 1) *Clinical practice guidelines management of gout*. (October 2008). Putrajaya: Ministry of Health Malaysia; Malaysian Society of Rheumatology; Academy of Medicine of Malaysia.
- 2) Amir Q, Russell PH, Mary AF. (2010). Management of Acute and Recurrent Gout: A Clinical Practice Guideline From the American College of Physicians. *American College of Physicians*, page 4-13.
- 3) Mellado JV, Morales EM, Tena CP, Vargas RB. (2001). Relation between adverse events associated with allopurinol and renal function in patients with gout. *Ann Rheum*, 60:981-983.
- 4) IBM Micromedex drug ref
- 5) Allopurinol-DrugBank. Retrieved from <https://www.drugbank.ca/drugs/DB00437#reference-A36705>

Editorial board

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DRUG

INF



UNIT FARMASI
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Tablet Allopurinol

Warning And Precaution

- 1) Severe cutaneous and hypersensitivity reactions have been reported, thus discontinue use at first sign of skin rash or allergic reaction
- 2) Increase in acute gout attacks have been reported during the early stages of allopurinol administration. Colchicine prophylaxis (1-2 tab per day) can be used to reduce acute attack and can be continued until the patient is free from acute attacks for 6 months or target serum uric acid level is achieved for 1 month.
- 3) Allopurinol is primarily excreted by the kidney. Thus, dose adjustment in renal patient are recommended as follow:

Creatinine clearance (mL/min)	Allopurinol dose
0	100mg every 3 days
10	100mg every 2 days
20	100mg daily
40	150mg daily
60	200mg daily
80	250mg daily
100	300mg daily

Monitoring Parameter

- 1) Renal function (BUN, serum creatinine or creatinine clearance)
- 2) Cell blood count
- 3) Serum uric acid levels (every 2 to 5 weeks during dose titration and every 6 months thereafter) target: < 0.36 mmol/L
- 4) Liver function test (periodically in patient with pre-existing hepatic disease)
- 5) Prothrombin time (periodically in patients receiving warfarin)

Adverse Effects

Allopurinol can cause adverse effects such as rash, bone marrow suppression, aplastic anaemia, agranulocytosis, granulomatous hepatitis and jaundice.

In some cases, a skin rash may be followed by more severe hypersensitivity reactions, including exfoliative, urticarial, and purpuric lesions, Stevens-Johnson syndrome, generalized vasculitis and/or hepatotoxicity (irreversible).

Clinical Efficacy

Allopurinol is to be proven effective in reducing uric acid level based on CPG management of gout (October 2008).

Hence it will relieve the symptoms of gout, which may include painful tophi, joint pain, inflammation, redness, decrease range of motion and swelling.

REFERENCES:

- 1) *Clinical practice guidelines management of gout*. (October 2008). Putrajaya: Ministry of Health Malaysia; Malaysian Society of Rheumatology; Academy of Medicine of Malaysia.
- 2) Amir Q, Russell PH, Mary AF. (2016). Management of Acute and Recurrent Gout: A Clinical Practice Guideline From the American College of Physicians. *American College of Physicians*, page 1-13.
- 3) Mellado JV, Morales EM, Tena CP, Vargas RB. (2001). Relation between adverse events associated with allopurinol and renal function in patients with gout. *Ann Rheum*, 60:981-983.
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