

GOUT

HISTORY AND PHYSICAL EXAMINATION:

-**Demographics:** male, older, metabolic co-morbidities, especially renal failure

-**Presentation:** acute, highly inflammatory, intermittent, spontaneously resolving flares → chronic gouty arthropathy

Differential diagnosis:

1. Septic arthritis
2. Other crystal arthritis – CPPD
3. Other inflammatory arthritis – especially psoriatic arthritis, palindromic onset RA

INVESTIGATIONS:

Labs

- CBC and differential, Cr/eGFR, ALT, CRP
- Uric acid – non-diagnostic
- **HLA B5801** - must be tested prior to allopurinol in Han Chinese, Thai, Korean, Black patients

Imaging

- X-ray – **juxta-articular** erosions, over-hanging margins, “rat bite” erosions
- DECT (dual energy CT) – non-contrast scan
- US – “double contour” sign

Arthrocentesis

- Can be “pseudo-septic”
- **Intra-cellular** monosodium urate crystals

MANAGEMENT:

Non-pharmacologic

- Avoid: high fructose corn syrup, alcohol, red meats, shellfish
- Helpful: weight loss if obese/overweight, hydration, topical ice
- Not enough evidence for: cherries, cranberry juice

Pharmacological:

-Medication modification:

Mild uricosuric effect:

- Amlodipine, losartan
- Atorvastatin, rosuvastatin
- High dose ASA
- SGLT-2 inhibitor

Increases uric acid:

- Calcineurin inhibitors
- Loop and thiazide diuretics
- Low dose ASA
- Pyrazinamide, ethambutol, nicotinic acid

Acute flares:

1. NSAIDs
2. Colchicine 1.2mg x 1 dose then 1 hour later 0.6mg x 1 dose, then 0.6mg p.o BID
3. Prednisone (IA or p.o) 0.5mg/kg x 5-10 days
4. Anakinra

Chronic urate lowering therapy:

-Indications:

1. ≥ 2 flares per year
2. Tophi
3. Gouty erosions
4. 1st flare and either: stage 3 CKD (eGFR <60), nephrolithiasis, or uric acid >535

-Note: recommend against treatment of asymptomatic hyperuricemia

-Options:

1. Xanthine oxidase inhibitors (**allopurinol**, febuxostat)
2. Uricases (pegloticase, rasburicase)
3. Uricosuric agents (probenecid)

-Target: **uric acid <360** sometimes less

Practical points:

- Urate lowering therapy should be started ASAP (even in an acute flare)
- Allopurinol and colchicine **must be renally dosed**
- Start **prophylactic therapy**
 - Should be continued until 3-6months after target uric acid (<360) is reached and flares stop

MONITORING: CBC and differential, Cr/eGFR, ALT, CRP, uric acid, **and CK**

Most relevant citations:

- FitzGerald JD, Dalbeth N, Mikuls T, Brignardello-Petersen R, Guyatt G, Abeles AM, et al. 2020 American College of Rheumatology Guideline for the Management of Gout. Arthritis Care Res (Hoboken). 2020 Jun;72(6):744–60.
- Stamp L, Horne A, Mihov B, Drake J, Haslett J, Chapman PT, et al. Is colchicine prophylaxis required with start-low go-slow allopurinol dose escalation in gout? A non-inferiority randomised double-blind placebo-controlled trial. Annals of the Rheumatic Diseases. 2023 Dec 1;82(12):1626–34.
- Stamp LK, Taylor WJ, Jones PB, Dockerty JL, Drake J, Frampton C, et al. Starting dose is a risk factor for allopurinol hypersensitivity syndrome: A proposed safe starting dose of allopurinol. Arthritis & Rheumatism. 2012;64(8):2529–36.