

Gout: Over View

Gout is a systemic illness – a metabolic disease

- Defined as a peripheral arthritis resulting from the deposition of sodium urate crystals in one or more joints
- deposition of uric acid in soft tissue as mono sodium urate
- deficient purine metabolism – serum uric acid elevation
- Demonstration of intra-articular mono sodium urate (MSU) crystals -to establish a definitive diagnosis of gouty arthritis
- Prevalence is about 0.8 to 1.5% of the population
- Gout is 5 x more in males than premenopausal women
- Prevalence increases with age and increasing serum UA
- Strong familial predisposition – 80% of family members

Tophaceous Gout

- Incidence has decreased over last few decades
- Seen in 25-50% of untreated patients (after 10-20yrs)
- Location: Olecranon, bursae, digits, helix of ear
- Damages bone, periarticular structures and soft tissues
- Palpable measure of total body urate load
 - Other Extra articular Complications
- Uric acid calculi (seen in 10-15% of gout pts)
- Chronic urate nephropathy (in those with tophi)
- Acute uric acid nephropathy (in pts undergoing chemotherapy)
- Hypertensive Renal disease is the most common in gout

Etiology of Gout

- Primary gout
 - Overproduction: 10%
 - Under excretion: 90%
- Secondary gout
 - Excess nucleoprotein turnover (lymphoma, leukemia)
 - Increased cell proliferation or death (psoriasis)
 - Rare genetic disorder Lesch-Nyhan Syndrome (HGPRT)
 - Drugs – Thiazides, loop diuretics, PZA, Cyclosporine
 - Ethanol abuse – habitual beer drinkers
 - Dehydration – fluid deprivation

ACR Criteria for Diagnosis

Any 6 of following

1. More than one attack acute arthritis
2. Max. inflammation with in 1day
3. Erythema over joint 4. Podagra 5. H/o of Podagra
6. Unilateral tarsal involvement 7. Tophus
8. Hyperuricemia – serum uric acid > 7 mg%
9. Asymmetric swelling on X-ray
10. Subcortical cyst without erosion
11. Negative Culture for infective arthritis

Signs and Symptoms

- Acute attack
 - With in few hours - frequently nocturnal
 - Excruciating pain – worst pain ever experienced
 - Swelling, redness and tenderness
 - Podagra: 1st MTP classic presentation
 - May effect knees, wrist, elbow, and rarely SI and hips.
- Chronic
 - Destructive Tophaceous Gout
 - Much greater chance if untreated
 - Rarely presents as a chronic illness

Treatment

- Acute Attack
 - NSAID's in anti-inflammatory doses
 - Colchicine 0.5 mg oral every 2 hours, may require 6 mg.
 - Neutrophil micro tubular assembly inhibitor
 - Stop with response or side effect (diarrhea, vomiting)
 - Can be used for chronic disease, risk of BM suppression
 - Joint aspiration followed by administration of IAS
 - Oral Prednisone 30 – 60 mg/day for 1-2 weeks - taper
 - ACTH 40-80 IM/IV or Solumedrol
 - Opiates and Tylenol for analgesia

Uric Acid Lowering Therapy (ULT)

- Never useful to treat acute attacks
- Two Approaches if SUA is more than 7 mg%
 - Uricosuric therapy – Increasing UA excretion
 - If the 24 hour uric acid excretion is < 800 mg
 - Probenecid 500 mg, Sulfinpyrazone 50-100 mg bid
 - Urine output of 2000 ml must be maintained
 - Xanthine Oxidase (XO) inhibitors ↓ UA Production
 - Useful in over producers – urinary UA > 800 mg/24
 - Two drugs – Allopurinol, Febuxostat
 - Precipitation of acute attack is problem

Febuxostat

- It is recent selective XO inhibitor
- (Uloric) given as 80 mg daily single dose
- In those intolerant to Allopurinol
- In Renal insufficiency
- If target serum uric acid is not achieved
- High baseline serum uric acid levels
- Severe Tophaceous gout

Probenecid

- Prophylaxis
 - Initial
 - 250 mg oral twice daily for 1 week
 - Maintenance – uricosuric drug
 - 500 mg oral twice daily
 - If symptoms persist or
 - If 24 h urate excretion below 700 mg
 - Incrementally increase by 500 mg every 4 wks.
 - Maximum of 2000 mg/day

Hyperuricemia

- Hyperuricemia is linked to comorbidities
 - Obesity
 - Hyperlipidemia
 - Metabolic syndrome
 - Hypertension
 - Diabetes mellitus
 - Renal disease
 - Heart failure

Allopurinol

- Indications for urate lowering therapy (ULT)
 - Recurrent attacks, tophi, bone / joint damage
 - Renal disease and/or nephrolithiasis, ↑↑ SUA
- Mild Disease – Allopurinol is the drug of choice
 - 100-300 mg/day orally as a single or divided doses
- Moderate to severe - Allopurinol
 - 400-600 mg/day orally as a single or divided dose (2-3 times daily); maximum dose 800 mg/day
- It is a non selective Xanthine Oxidase (XO) inhibitor

Ten Commandments

- Fast acting NSAIDs are the drugs of choice for Acute Gout
- Anti inflammatory drug Rx. must be continued for 1-2 wks.
- Colchicine an effective alternative for NSAIDs. Slow to work
- IAS are highly effective in acute mono arthritis of Gout
- Oral or parenteral corticosteroids in NSAID intolerance
- Allopurinol should not be used in acute attack of Gout
- Allopurinol should be continued if the pt. is already receiving
- Diuretic use for hypertension to be changed to other agents
- Uricosuric Rx. Must be started after a second attack
- Newer drugs in refractory cases with high serum UA levels.