Gout -revisited

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Monosodium urate (MSU) crystal deposition → episodic and later persistent joint inflammation and tophi

- All MSU crystal deposition- broader definition
- EULAR- European League Against Rheumatism –guidelines
TOPHACEOUS GOUT
Diagnosis

- Clinical features and hyperuricaemia - inaccurate way of diagnosis
- MSU crystals in synovial fluid (SF) - gold std.
- Regular microscope - polarized
- MSU - needle-acicular, strong birefringence
- CPPD - rhomboidal, parallelepipedic, acicular - absent/weak birefringence
MSU CRYSTALS – PLAIN AND POLARISED MICROSCOPY
Diagnosis 2

- All SF drained from undiagnosed arthropathies
- Aspirating asymptomatic knees / first MTP jts
- Palpable tophi - needling
- Tissue samples - fixed in alcohol / freezing
PODAGRA
Clinical Diagnosis

- Recurrent episodes of acute arthritis of first MTP joint (podagra) → Gout
  - D/D- infections/ psoriatic arthritis/ CPPD
- Less typical location of first gouty attack-50%
  - Tarsum, ankle, knee, wrist
  - Arthritis of TM jt, AC jt, manubriosternal, sternoclavicular, sacroiliac, pubic symphysis, or hip joints, lumbar spine or flexor tenosynovitis with CTS
  - Polyarticular, additive/ less acute /persistent
  - Confused : septic arthritis/ spondylodiscitis / RA / tumours
Hyperuricemia

- SUA- 7-8.9→ 0.5% develop Gout in 1 year
  > 9 mg → 4.9%
- Any articular manifestation –mistaken for gout
- Absense of high SUA→ disregard gout
- SUA levels may be normal during acute attack due to high renal excretion
- Gouty attack if urate lowering therapy without colchicine prophylaxis / anytime during therapy before crystals are dissolved
Approach

- ACR criteria, Rome and N Y criteria when compared with MSU crystal identification-poor in under an over diagnosis
- D/D- CPPD, RA and OA-poor
- Ongoing inflammation and crystal deposition
- Erroneous diagnosis- lifelong urate lowering drugs
Future perspectives - USG

- Visualize crystal deposits
- Double contour sign - hyperechoic enhancement of the outer surface of hyaline cartilage
- Soft and hard tophi
- Hyperechoic spots within SF
Management

- Normalising of SUA levels → dissolution of crystals
- SUA normal indefinitely to avoid forming new crystals and return of gout
- Bouts of arthritis - clinical presentation, after the start of therapy until crystals dissolve or indefinitely in improperly treated/untreated patients
- Causes – evaluated
- Associated - metabolic syndrome (arterial hypertension, hyperlipidemia, obesity or glucose intolerance - treated)
Reducing uricemia to eliminate urate crystals

- SUA<6 mg. lower the level - sooner clearance
- 9/10 signal joints with gout< 10 yrs were free of crystals after 1 yr of SUA lowering therapy and remaining one by 18 months
- Crystals can be found in SF samples from never inflamed joints and periarticular structures of patients of asymptomatic hyperuricemia
- Rx only after gouty attack has subsided
- Prophylactic colchicine
Allopurinol

- Inexpensive, safe and effective
- Refractory if SUA not < 6 mg
- 300 mg - fixed dosage?
- Max 800 mg
- 400-600mg may be necessary in many
- Lack of compliance → allopurinol failure
- S creatinine >2 → avoid NSAIDs, reduce allopurinal
Allopurinol 2

- Hypersensitivity syndrome - lethal
- DRESS syndrome - drug rash with eosinophilia and systemic symptoms
- Stevens – Johnson syndrome
- Azathioprine - metabolism same. Coadministration causes toxicity
- Reduction of SUA \( \rightarrow \) improves renal insufficiency and reduces BP in adolescents with hypertension
Uricosuric drugs

- Probenecid - 2000 mg
- h/o renal calculi - caution - alkanise urine and plenty of fluids
- Difficult allopurinol refractory patients - combine allopurinol with uricosuric drugs
Newer drugs

- Febuxostat - nonpurine selective inhibitor of XO - for allopurinol intolerance and renal failure cases
- Uricase - degrades uric acid to allantoin-soluble and easily eliminated - treating tumor lysis syndrome
- Losartan and clofibrate - reduces SUA along with BP and lipids
NSAIDs

- Indomethacin - 50 mg tds
- Etoricoxib - 120mg od
- Naproxen - 500mg bd
- Prednisolone - 35 mg daily
- Short courses of steroids → rebound attack hence prophylactic colchicine
- Intraarticular steroids - small doses - infection ruled out
Colchicine

- Formerly diagnostic aid
- Frequent side effects - high dose
- EULAR guidelines - max of 3 tabs of 0.5 mg in first 24 hours for acute gout
- 0.5 mg BD in older patients
- 0.5 mg OD in renal and hepatic abnormalities
- Acute GI, myelotoxicity, myotoxicity after prolonged use
Dietary and life style factors

- Evaluation of metabolic syndrome - high BP, insulin resistance, dyslipidemia, abdominal obesity, comorbid conditions
- Independent CVS risk factor - increased risk factor for MI, fatal coronary heart disease, level of association rises with severity of Gout
- Hypocaloric diet, reduced intake of purine rich foods, alcohol, sugar sweetened soft drinks
SUA increasing Medication

- Diuretics
- Low dose aspirin
- Cyclosporin
- Pyrazinamide, ethambutol
- Nicotinic acid
- Cytostatic agents
Case studies
Case 1
Case 2
X ray

USG
PRE AND POST TREATMENT
Case 3
Tophaceous gout