What is Gout.

- ***Gout is painful condition associated with hyperuricemia that results the formation of uric acid crystals depositing in especially joints and tissues of the body which causes inflammation.***
- **HYPERURICEMIA --**
-
- ***over production,***
- ***under secretion or combination of two.***

GOUT.

- ***Gout is a metabolic disorder characterized by hyperuricemia due to defective purine metabolism*.**
- ***Hyperuricemia can lead to deposition of sodium urate crystals especially in joints and kidney.***
- ***Types-***
- **Acute—**
- ***it manifest as sudden onset severe inflammation in a small precipitation of urate crystals in joint spaces.***
- **Chronic --**
- ***when pain and stiffness patient persist in a joint between attack, gout becomes chronic.***

ETIOLOGY.

- *Gout occurs due to defective metabolism in which uric acid is the end product.*
- *Main cause of hyperurecemia-*
- *Overproduction of uric acid*
- *Excessive turn over of nucleoproteins.*
- *Excessive dietry purines*
- *Excessive synthesis of uric acid to rare enzyme defect enzyme mutation defect.*
- *Under excretion of uric acid*
- *Defect in renal excretion*
- *Inborn errors of metabolism.*

Predisposing factor.

- ***Purine rich foods.***
- ***Caffeine.***
- ***Drugs.***
- ***Alcohol.***
- ***Trauma.***
- *Disease*
- *a. Lesch – Nyhan sundrome*
- *b. Von-Gierke's disease.*
- *c. Syndrome X*
- *Genetic disease.*

ACUTE GOUT.

ACUTE GOUT -

- Pain –
- swelling
- Fever
- **O/E** –
- Joints-warm, erythematous
- tenderness

- Attacks resolve within days to weeks without treatment
- Mc affects the MTP joint of great toe, 1st MTP joint- PODAGRA
- Second attack within 1 year in 60% ppl, within 3 yrs in 80% ppl

CHRONIC GOUT.

- **SITE OF TOPHI INCLUDE:**
- ***1st MTPJ*** (PODOGRA).
- ***Digits of the hand and feet (most common).***
- ***Bursa around elbows and knees.***
- ***Achilles tendon***
- ***Pinna of the ear.***

CHRONIC GOUT.

- ***SIGN AND SYMPTOMS-***
- *Joint damage*
- *Joint pain*
- *Joint stiffness*
- *Articular cartilage may be destroyed resulting in joint deformites.*
- *Patient may develop large subcutaneous Tophi.*

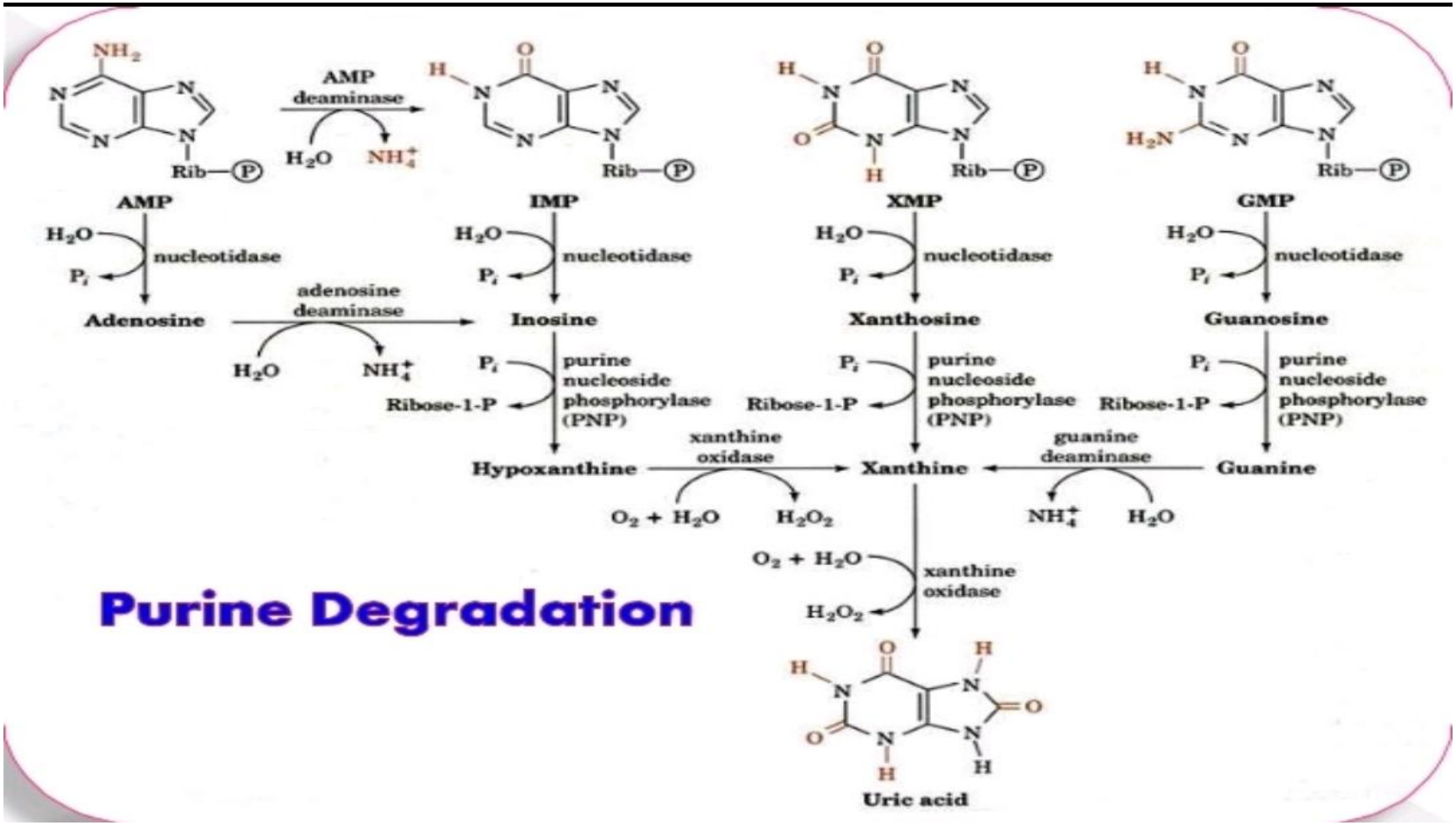
GOUT.

- *Group of disorder presented with*
- *1.Hyperuricemia*
- *2.uric acid nephrolithesis.*
- *3. Acute inflammatory Arthritis.*
- *TWO TYPES—*
- *1.primary gout—*
- *due to defect in the enzymess that lead to over production of purine nucleotides.*
- *Super activity PRPP synthetase.*
- *Deficiency HGPRTase(Lesh-Nyhan syndrome).*
- *G6PD(Type-1 glycogen storage disorder).*

GOUT.

- 2. Secondary gout--
- A. Increased production of uric acid
- Leukemia
- Lymphoma
- B.Decreased excretion
- Renal failure
- Thiazides
- diuretics

PURINE DEGRADATION.



Clinical presentation

- *STAGES*
- ***Stage-1 : Asymptomatic hyperuricemia***
- ***Stage-2 : Acute gout attack***
- ***Stage-3 : Intercritical period***
- ***Stage-4 : chronic tophiceous gout.***

CLINICAL PRESENTATION.

- *Symptomps-*
- *Severe pain, swelling and warmth in the affected joints.*
- *The attack is usually monoarticular and the most common sites are metatarsophalangeal joints of big toe.(Acute gouty Arthritis).*
- *Signs-*
- *Affected joints are warm, red and swellen.*
- *Mild fever may present.*
- *Tophi (mono-sodium urate crystals) may present in chronic cases.*

Laboratory.

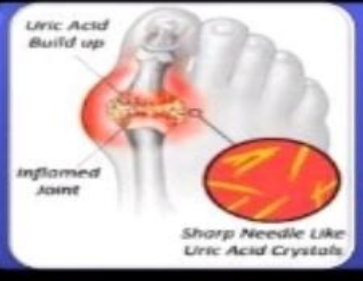
- *Hyperuricemia*
- *Biochemical hallmark of gout, but not by itself diagnostic for gout.*
- *Leukocytosis.*
- *Increased ESR.*
- *Synovial Fluid-*
- *MSU needle*
- *– like intracellular and extracellular crystals.*
- *Negatively birefringent needle shaped monosodium urate crystals under polarised light microscopy.*

INVESTIGATION.

INVESTIGATIONS

Blood tests

- Rise in uric acid



Fluid examination from swelling

- Uric acid crystals

X-rays

- Long standing cases joint destruction

INVESTIGATION.

- TO DETECT THE PRESENCE OF MEDICAL CONDITION ASSOCIATED WITH GOUT/ HYPERURICEMIA –
- Full blood count/differential count—

- To exclude infection or myeloproliferative disease.
- Serum creatinine/ urea—

- To exclude hyperuricemia due to renal diseaese.
- Serum uric acid-hyperurecemia is not equivalent to gout.
- Blood glucose--- to exclude DM.
- Lipid profile
- Urinanalysis.

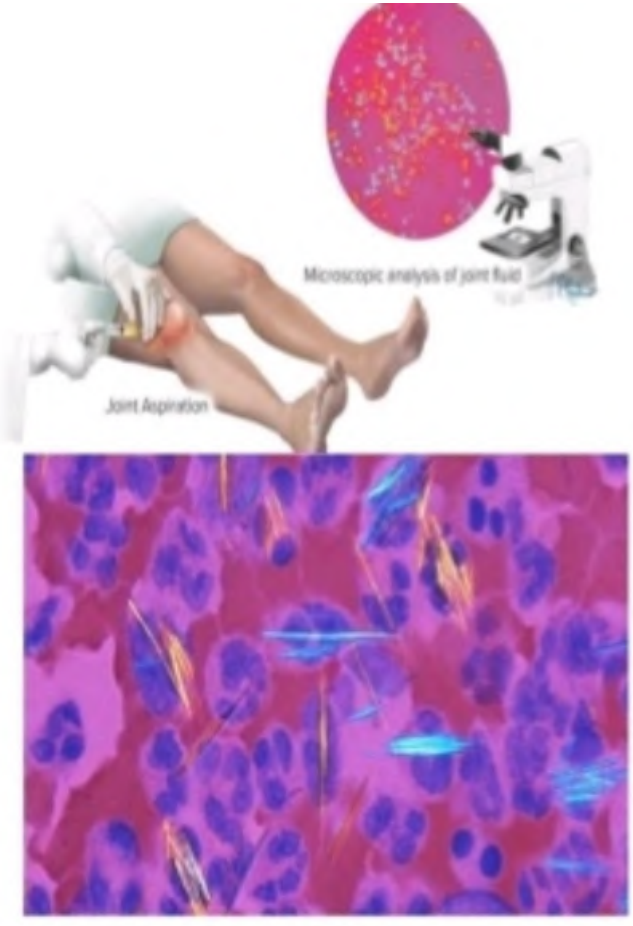
INVESTIGATION

- *Specific investigation for confirmation of of gouty arthritis.*
- *Joint aspiration and crystal identification.*
- *Serum urate.*
- *To detect complication*
- *Renal imaging*
- *Skeletal x – rays*.

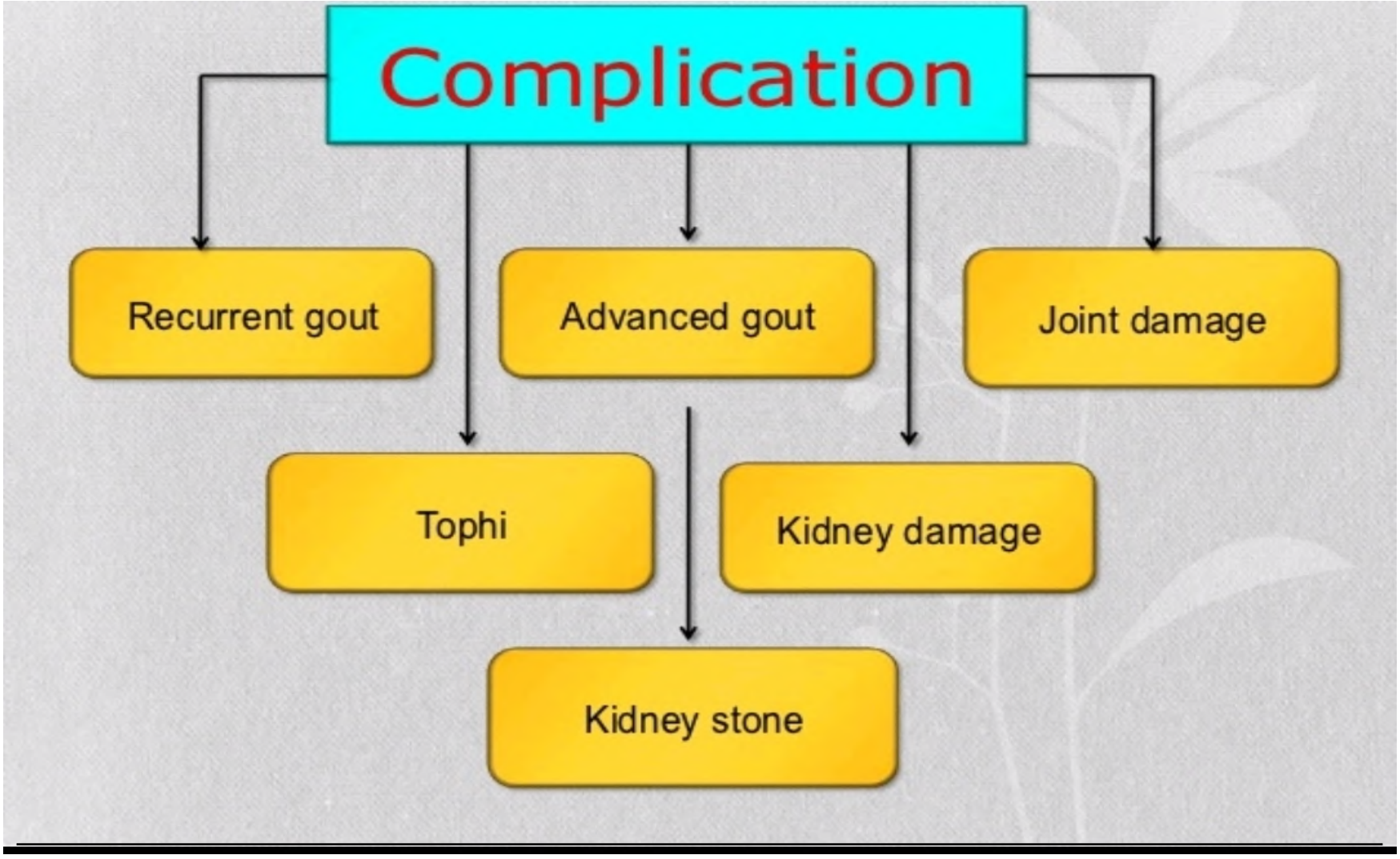
Synovial fluid Examination.

SYNOVIAL FLUID ANALYSIS

- "Polarized light microscopy" – gold standard
- Crystals – intracellular during attacks
- Needle and rod shaped
- Strong negative birefringence
- Cell count elevated from 2,000 to 60,000



COMPLICATION OF GOUT.



TREATMENT GOUT.

ACUTE GOUT.

- NSAID
  COLHICINE
- CORTICOSTEROID

CHRONIC GOUT

- URICOSURIC
  PROBENECID
  SULFINPYRAZONE
- SYNTHESIS INHIBITOR
  ALLOPURINOL (XANTHINE OXIDASE INHIBITOR).
  FEBUXOSTAT.