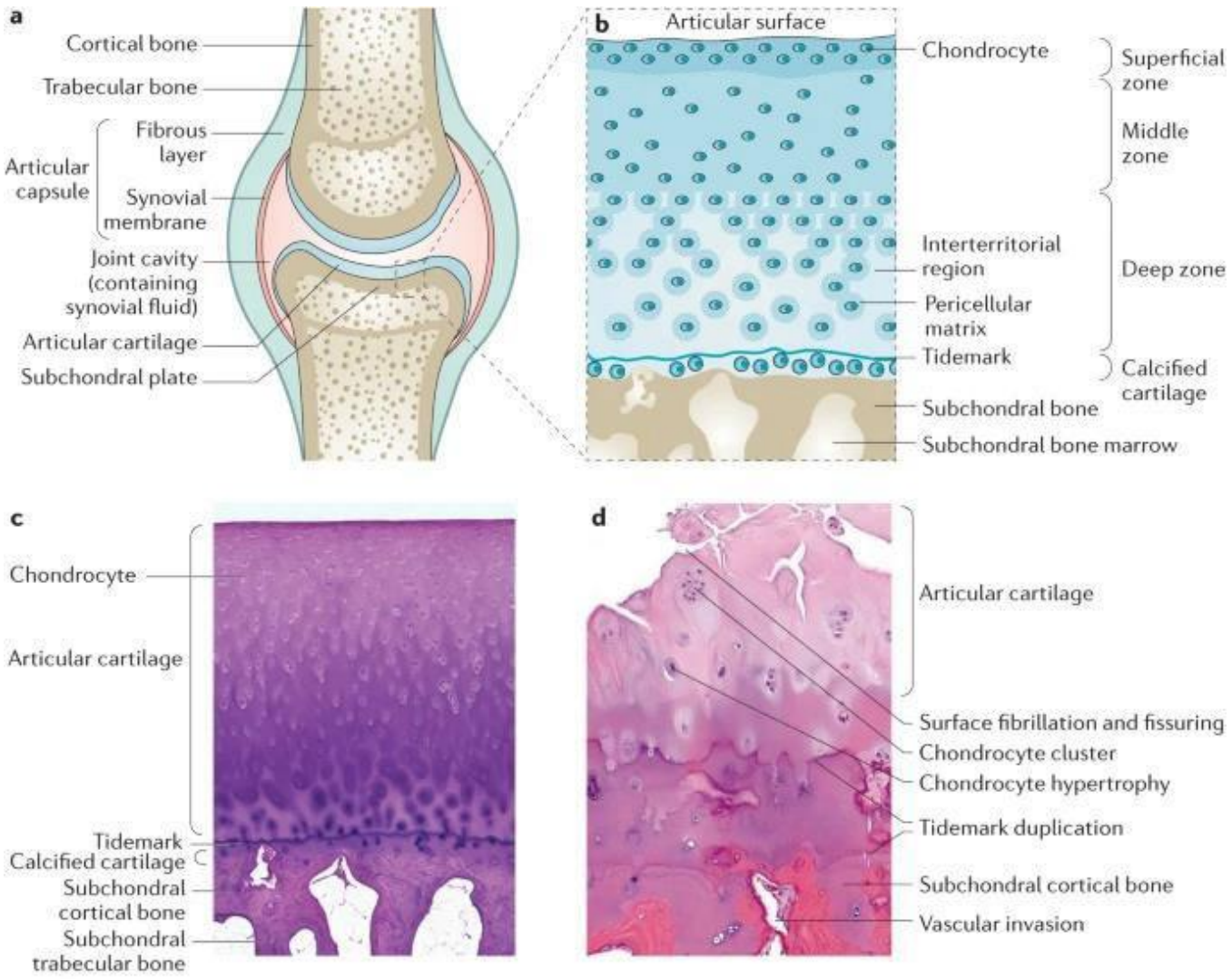
OSTEOARTHRITIS & GOUT

Presented by: Prof. Sultan Almogairen

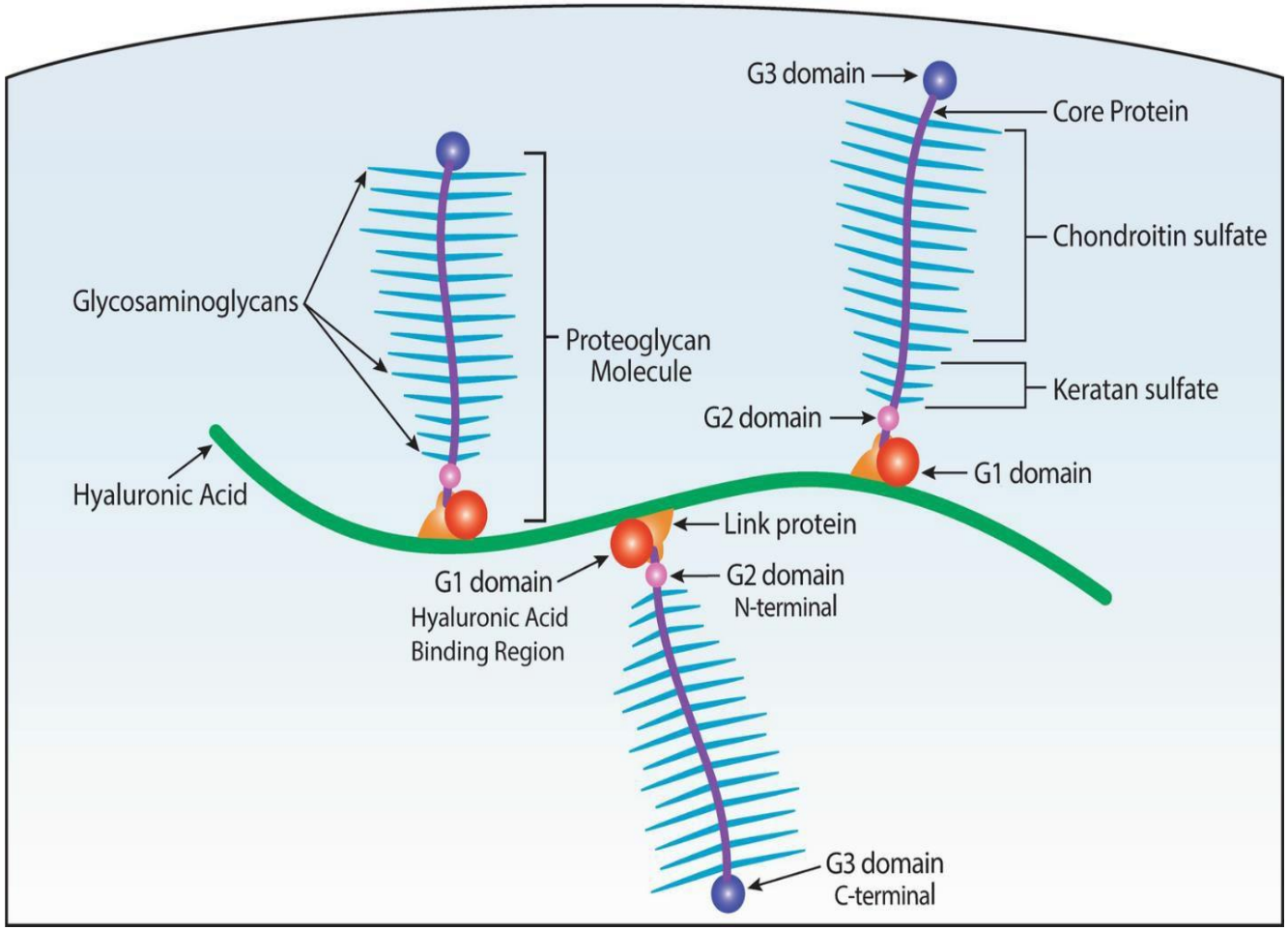
OSTEOARTHRITIS

Content:
Pathophysiology
Clinical
Management



Nature Reviews | Disease Primers

Articular Cartilage Aggrecan Molecule

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Intervention	Joint		
	Hand	Knee	Hip
Topical nonsteroidal antiinflammatory drugs			
Topical capsaicin			
Oral nonsteroidal antiinflammatory drugs			
Intraarticular glucocorticoid injection			
Ultrasound-guided intraarticular glucocorticoid injection			
Intraarticular glucocorticoid injection compared to other injections			
Acetaminophen			
Duloxetine			
Tramadol			
Non-tramadol opioids			
Colchicine			
Fish oil			
Vitamin D			
Bisphosphonates			
Glucosamine			
Chondroitin sulfate			
Hydroxychloroquine			
Methotrexate			
Intraarticular hyaluronic acid injection	(First carpometacarpal)		
Intraarticular botulinum toxin			
Prolotherapy			
Platelet-rich plasma			
Stem cell injection			
Biologics (tumor necrosis factor inhibitors, interleukin-1 receptor antagonists)			

Strongly recommended
Conditionally recommended
Strongly recommended against
Conditionally recommended against
No recommendation

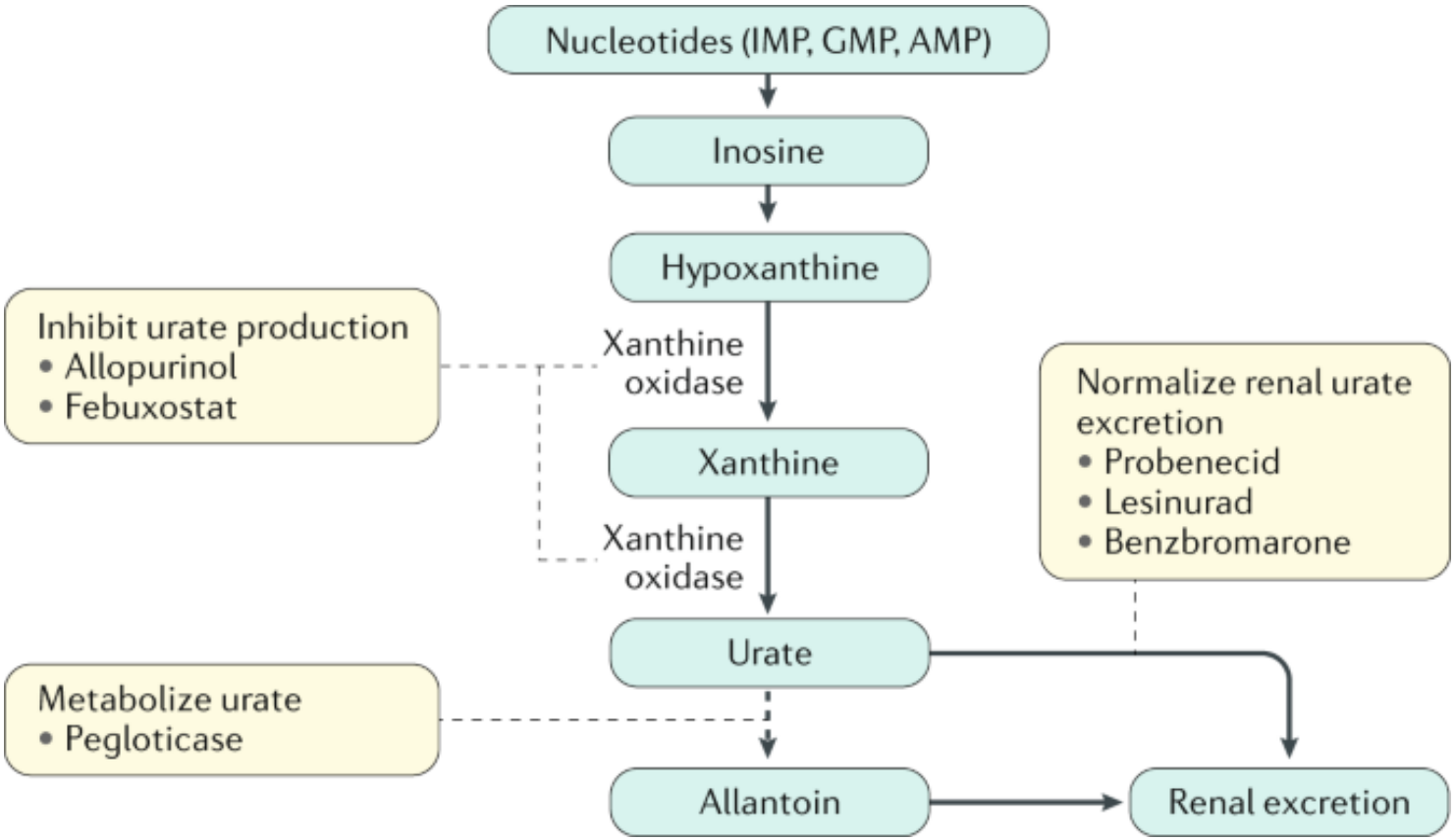
Intervention	Joint		
	Hand	Knee	Hip
Exercise			
Balance training			
Weight loss			
Self-efficacy and self-management programs			
Tai chi			
Yoga			
Cognitive behavioral therapy			
Cane			
Tibiofemoral knee braces		(Tibiofemoral)	
Patellofemoral braces		(Patellofemoral)	
Kinesiotaping	(First carpometacarpal)		
Hand orthosis	(First carpometacarpal)		
Hand orthosis	(Other joints)		
Modified shoes			
Lateral and medial wedged insoles			
Acupuncture			
Thermal interventions			
Paraffin			
Radiofrequency ablation			
Massage therapy			
Manual therapy with/without exercise			
Iontophoresis	(First carpometacarpal)		
Pulsed vibration therapy			
Transcutaneous electrical nerve stimulation			

Strongly recommended
Conditionally recommended
Strongly recommended against
Conditionally recommended against
No recommendation

GOUT

Contents:

1. **Pathophysiology**
2. **Clinical & Lab features**
3. **Management**


Nucleotides (IMP, GMP, AMP)
Inosine
Hypoxanthine
Xanthine oxidase
Xanthine
Xanthine oxidase
Urate
Allantoin
Renal excretion
Inhibit urate production
• Allopurinol
• Febuxostat
Normalize renal urate excretion
• Probenecid
• Lesinurad
• Benzbromarone
Metabolize urate
• Pegloticase

Overproduction (10%)

Dietary purine
- Meat (beef, pork, lamb)
- Seafood (shrimps, tuna)
- Beer

Endogenous purine synthesis
- Malignancy
- Tumor lysis syndrome

Purine salvage
- HGPRT deficiency
- PRPS deficiency

Purine breakdown
- Glycogen storage disease

Risk factors

- Male
- Age
- Obesity

URIC ACID CRYSTALS

Underexcretion (90%)

Urinary excretion
- Diuretics
- Renal failure

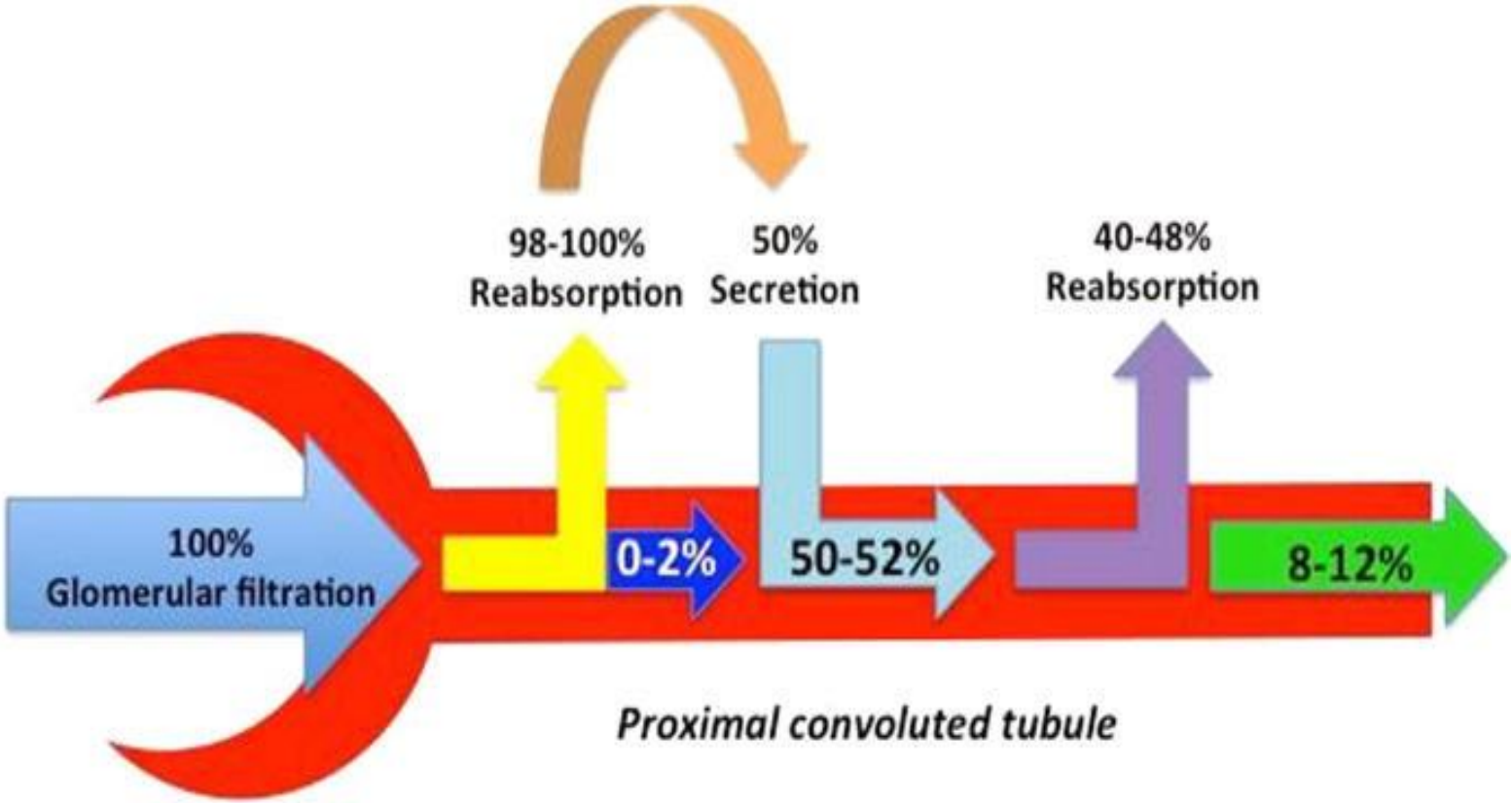
Urinary reabsorption
- Alcohol
- Genetic defects

Hyperuriceamia

GIT excretion

Renal excretion

Renal excretion of uric acid

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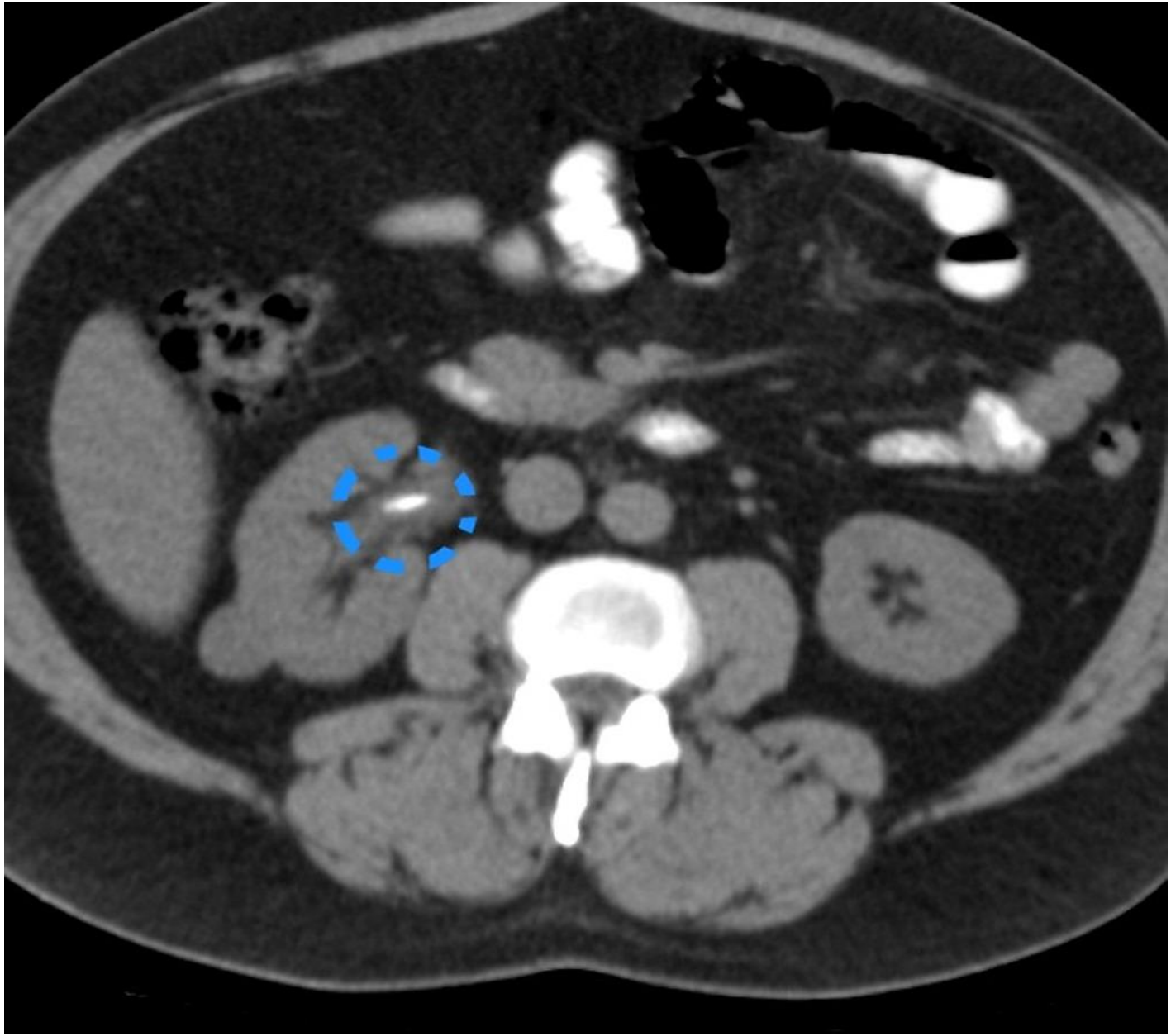
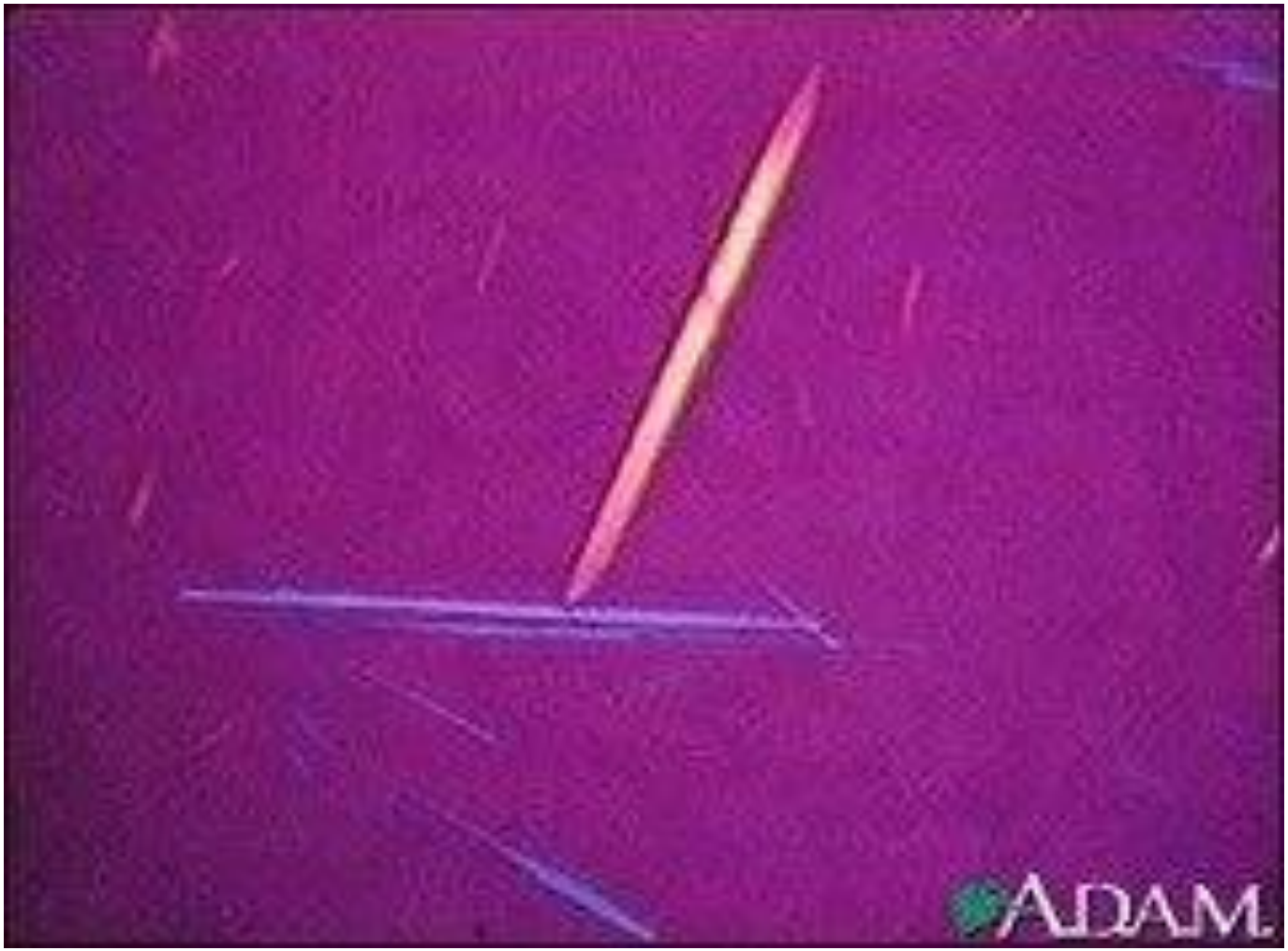
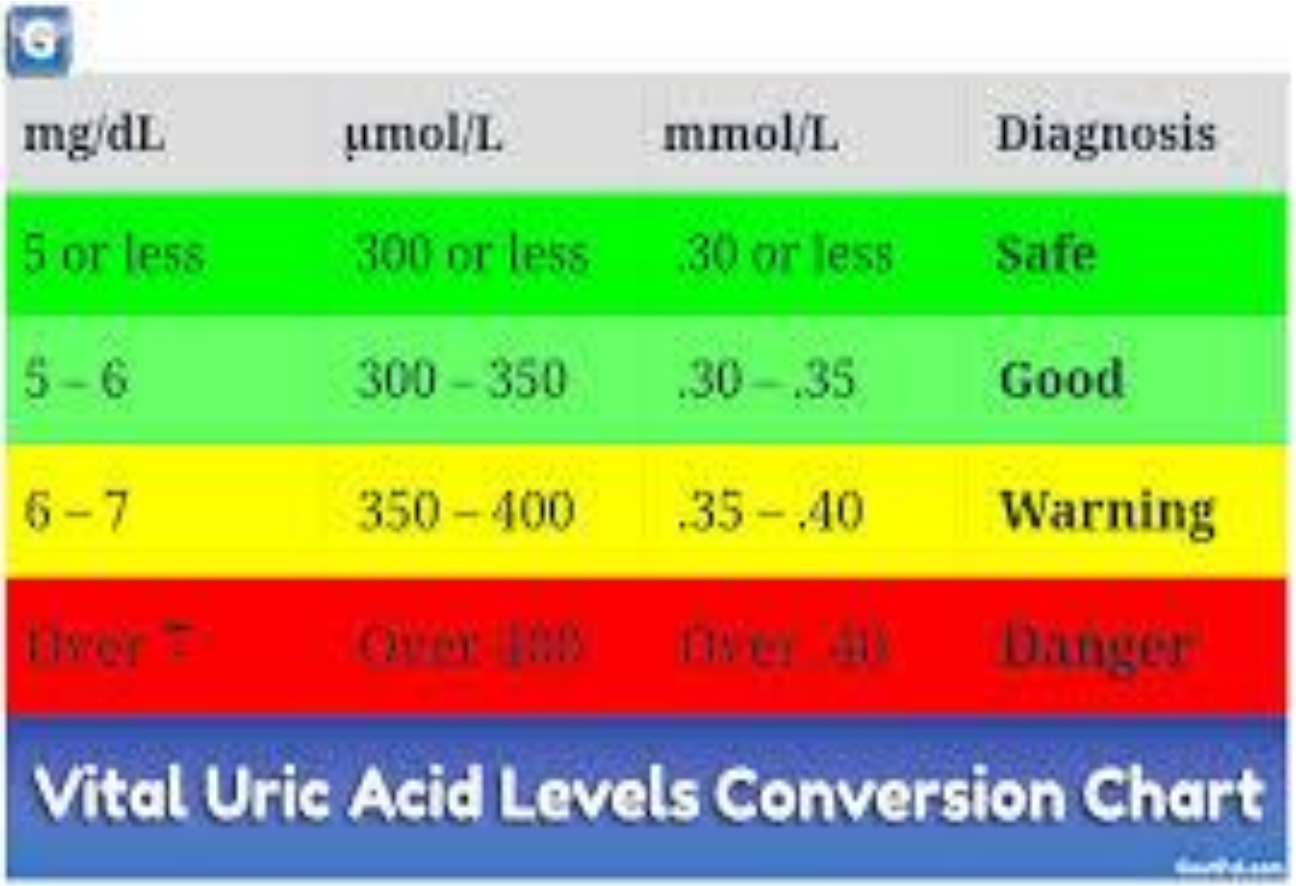



ADAM.


mg/dL
µmol/L
mmol/L
Diagnosis
5 or less
300 or less
.30 or less
Safe
5 – 6
300 – 350
.30 – .35
Good
6 – 7
350 – 400
.35 – .40
Warning
Over 7
Over 400
Over .40
Danger
Vital Uric Acid Levels Conversion Chart

Avoid if Possible:-Organ Meats – liver, kidney, heart, sweetbreads, tripe, brain and tongue

Limit:-Beef, Chicken, camel. Seafood sardines Tuna Lamb.. mushrooms

vegetable:- high purine content include cauliflower, spinach,..Chickpeas, Soybeans , Peanut, high fructose **corn** syrup, sweetened soda


palak soup

.**Evidence grades for recommendations: level**
A supported by multiple (i.e., 1) randomized clinical trials or meta-analyses; **level B** derived from a single randomized trial or nonrandomized studies; **level C** consensus opinion of experts, case studies, or standard of care...the recommendations assumed a lack of contraindications, intolerance, serious adverse events, or drug–drug interactions for given agents.

Causes of increased urate production

Dietary Purine-rich and fructose-rich **foods**, weight **loss** (fasting)
Myeloproliferative and lymphoproliferative diseases.Hemolytic disorders.**Tumor lysis syndrome**

Other **Psoriasis**

Causes of reduced renal urate excretion

Drugs Cyclosporine, thiazides, loop diuretics, aspirin (500–1000 mg/d)Low-dose salicylates

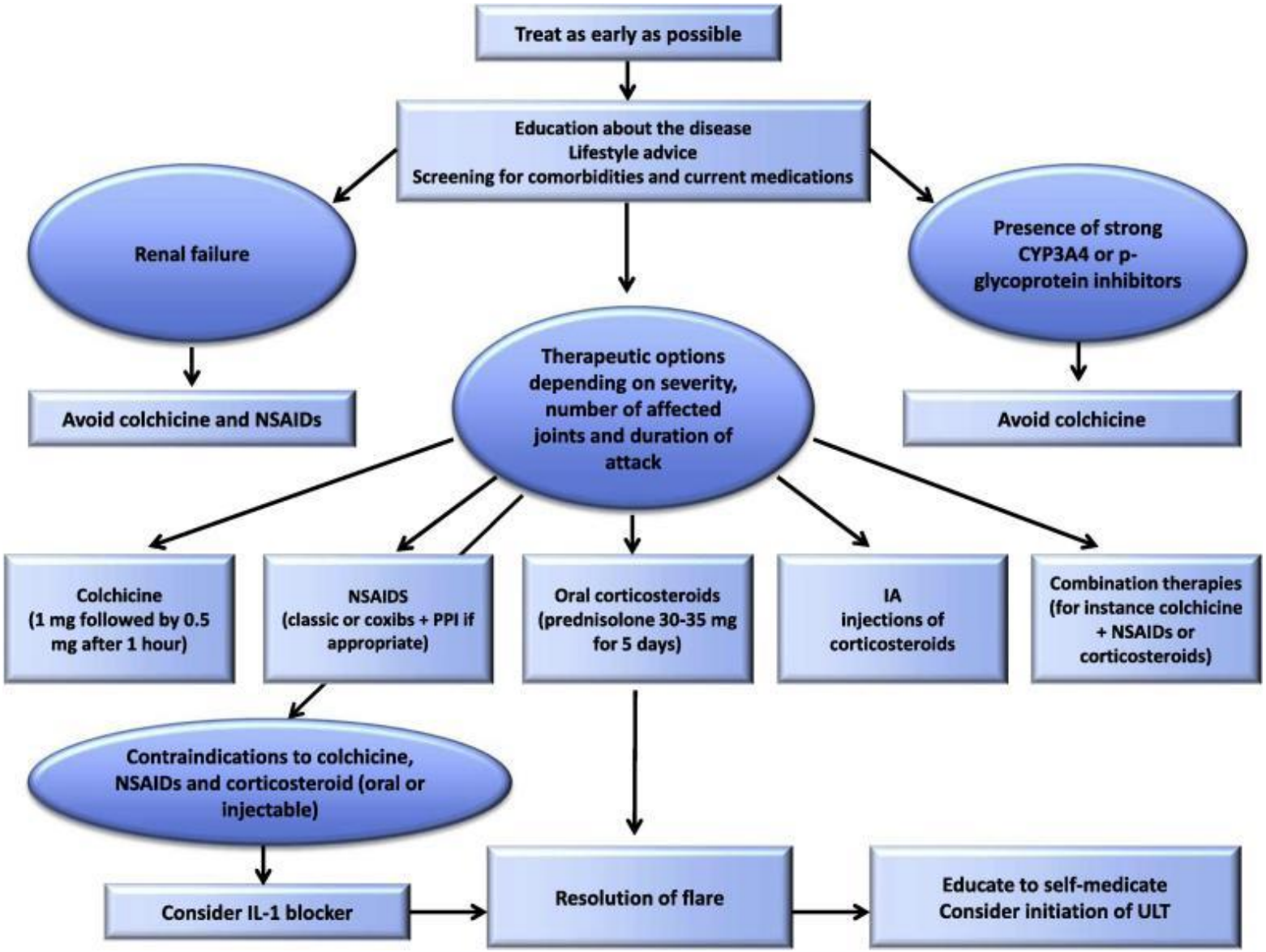
Beta blockers.Ethambutol

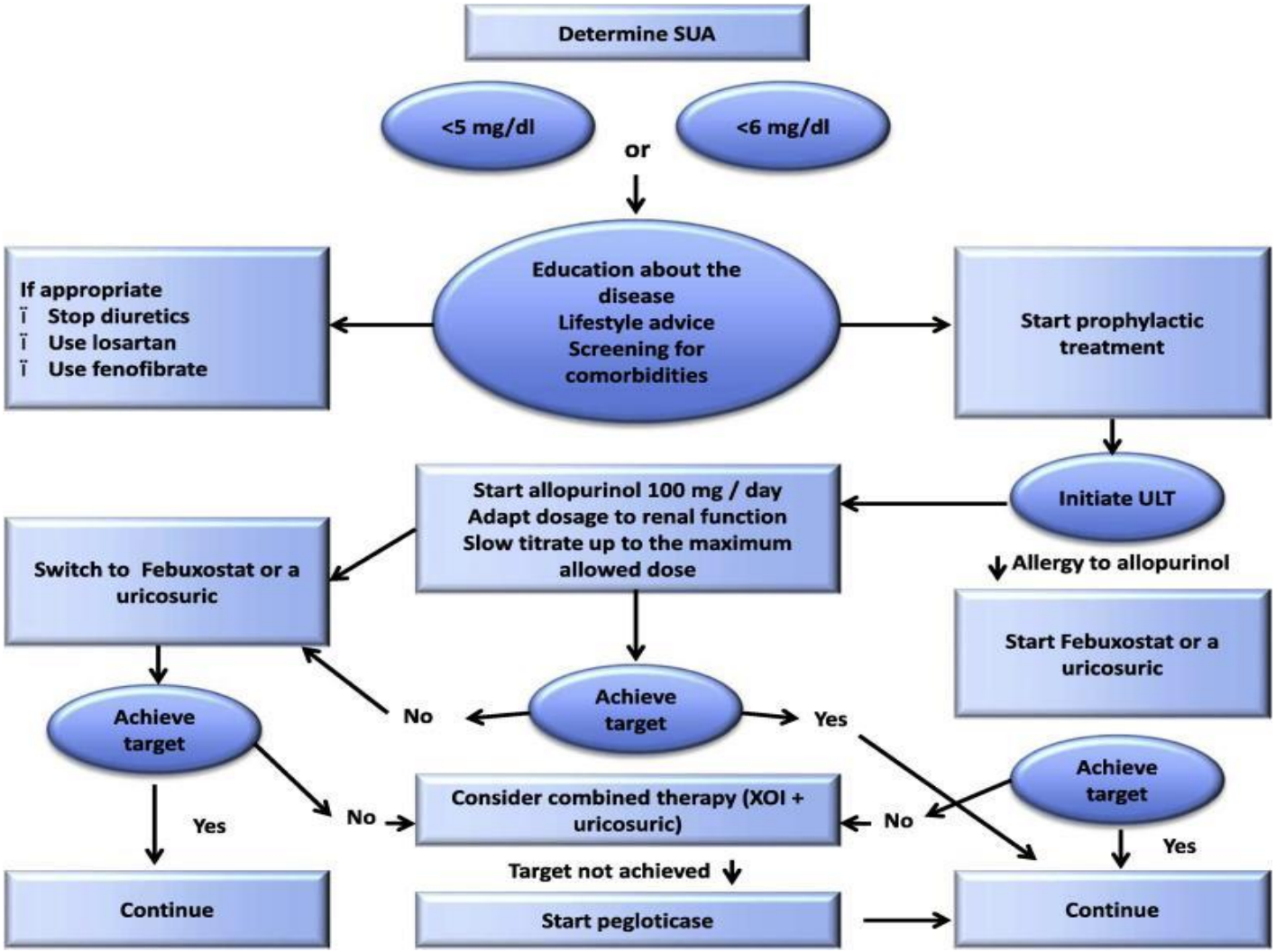
Renal Hypertension, polycystic kidney disease, chronic renal failure of various etiologies

Metabolic/endocrinological Dehydration (often associated with surgery), lactic acidosis, ketosis, hypothyroidism..Preeclampsia

Combined *mechanisms*

Alcohol, metabolic syndrome (obesity, hypertriglyceridemia)
inherited and genetic causes


Treat as early as possible
Education about the disease
Lifestyle advice
Screening for comorbidities and current medications
Renal failure
Presence of strong CYP3A4 or p-glycoprotein inhibitors
Therapeutic options depending on severity, number of affected joints and duration of attack
Avoid colchicine and NSAIDs
Avoid colchicine
Colchicine (1 mg followed by 0.5 mg after 1 hour)
NSAIDS (classic or coxibs + PPI if appropriate)
Oral corticosteroids (prednisolone 30-35 mg for 5 days)
IA injections of corticosteroids
Combination therapies (for instance colchicine + NSAIDs or corticosteroids)
Contraindications to colchicine, NSAIDs and corticosteroid (oral or injectable)
Consider IL-1 blocker
Resolution of flare
Educate to self-medicate
Consider initiation of ULT


Determine SUA
<5 mg/dl
or
<6 mg/dl
Education about the disease
Lifestyle advice
Screening for comorbidities
If appropriate
Stop diuretics
Use losartan
Use fenofibrate
Start prophylactic treatment
Initiate ULT
Allergy to allopurinol
Start allopurinol 100 mg / day
Adapt dosage to renal function
Slow titrate up to the maximum allowed dose
Switch to Febuxostat or a uricosuric
Start Febuxostat or a uricosuric
Achieve target
No
Yes
Achieve target
No
Yes
Consider combined therapy (XOI + uricosuric)
No
Achieve target
Yes
Target not achieved
Continue
Start pegloticase
Continue

Take home messages: