



# Therapy of GOUT (arthritis urica)

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## Therapy of gout

If uric acid pool is 2-3x higher than normal, microcrystals are precipitated and result in deposits in tissues, including the joints. These crystals then trigger acute attacks of inflammatory arthritis.

1. Colchicine (Colchicum autumnale) 0,5 mg 3x daily

Effect: Inhibition of production of phagocytes and their migration

Side effects: in GI diarrhoea, severe neutropenia, agranulocytosis, aplastic anemia

2. Allopurinol, febuxostat (nonpurin selective xanthinase inhibitor)

3. NSAID

4. Uricosuric drugs

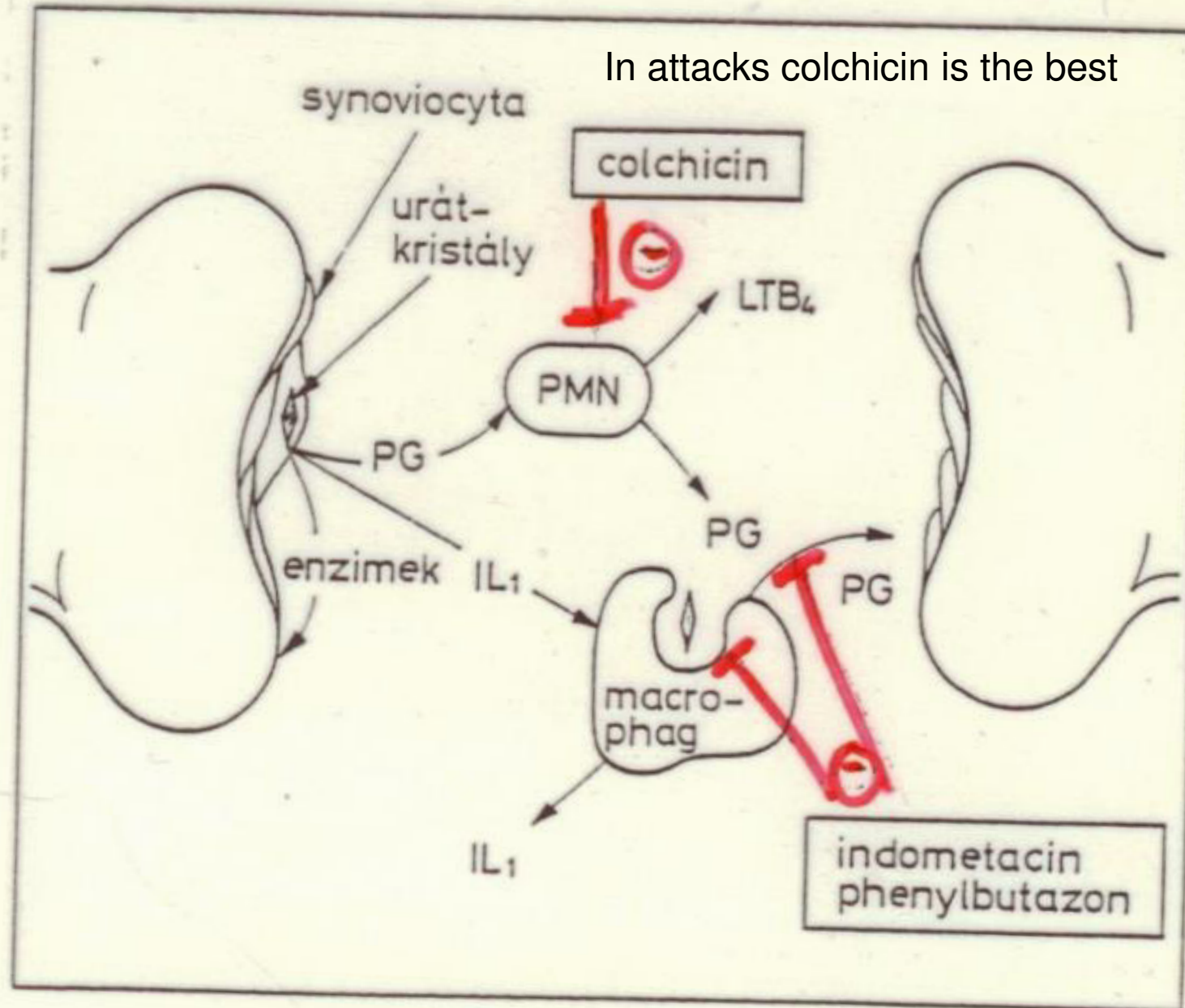
5. Biological therapy with recombinant uricase = rasburicase or pegloticase, a pegylated uricase

Uric acid  allantoin (readily excreted by kidney)

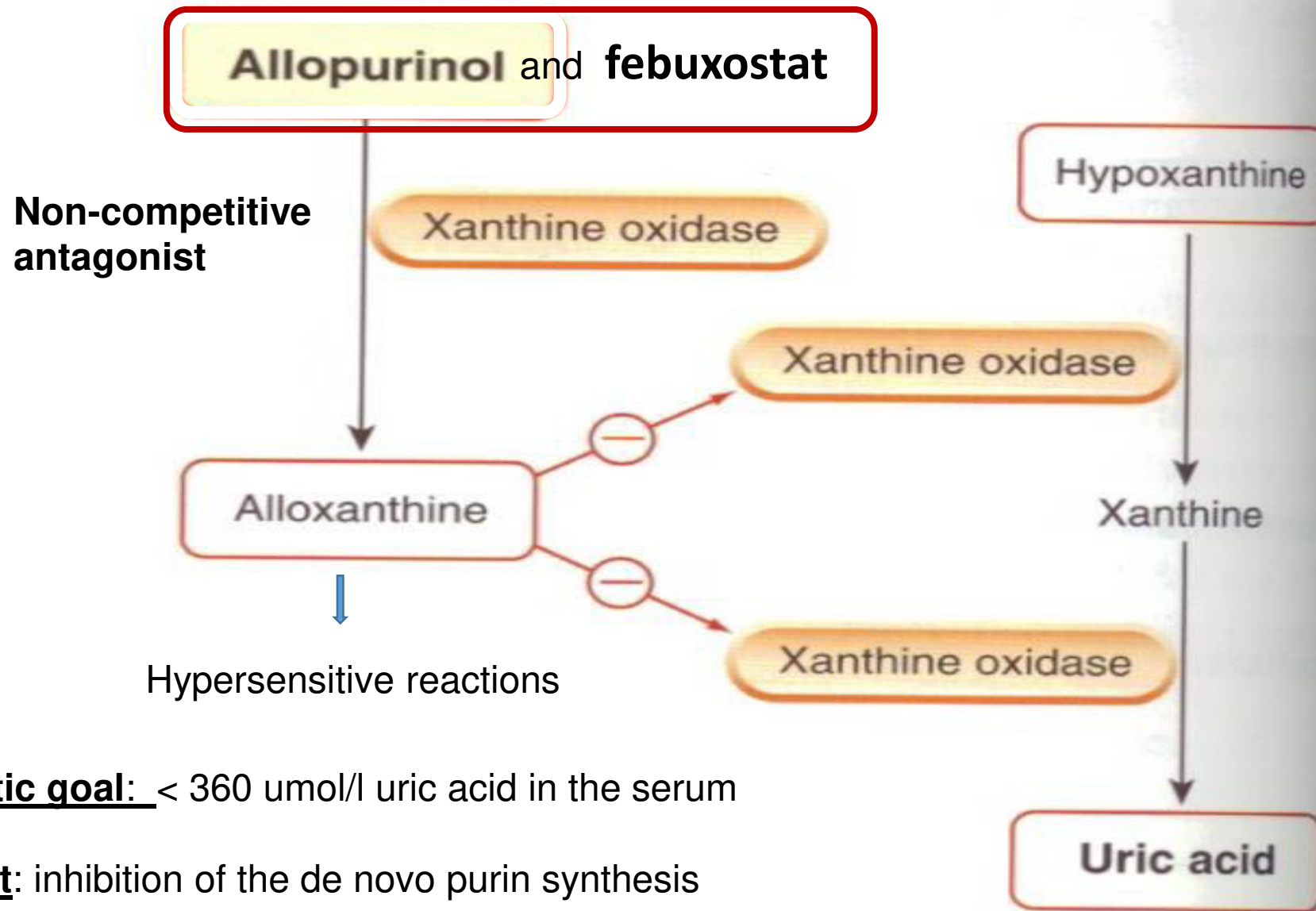
Antibody formation limits its use to short-term therapy !!

## Therapy of GOUT (arthritis urica)

In attacks colchicin is the best



## Therapy of GOUT (arthritis urica)



**Therapeutic goal:** < 360  $\mu\text{mol/l}$  uric acid in the serum

**Side effect:** inhibition of the de novo purin synthesis

Febuxostat less toxic because it has NO purin chemical structure

# INFLUENCE EXCRETION OF URIC ACID - URICOSURIC DRUGS

## 1. Hyperuricaemia as a side effect:

Low dose aspirine therapy  
ethambutol, pyrazinamid, nicotinic acid, cyclosporine, ethanol  
increase of serum lactic acid concentration

diuretics:                    thiazides, furosemide and its derivatives

## 2. Enhancement of the clearance of uric acid:

1. Losartan – mild effect
2. Fenofibrat – mild effect

## 3. Uricosuric drugs:


1. Sulfinpyrazone in high doses

Side effect: ulcerogenic, uric acid crystalluria !

initial dose: 200 mg/day p.o. then increase into 600 mg/day for 2-3 weeks and maintain untill the plasma level does not normalize then be reduced to 200 mg/day


2. High dose aspirine therapy
3. Probenecid
4. benzpromaron

## Drugs enhancing uric acid excretion

| Drugs                      | therapeutic effect                | mechanism of action                                                                                      |
|----------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------|
| probenecid                 | decrease of<br>serum uric acid    | inhibition of the<br> |
| sulfinpyrasone             | concentration +<br>resolve tophus | reabsorption of<br>uric acid                                                                             |
| resinulad and<br>tranilast |                                   | specific inhibition of the<br>URAT1 transporter                                                          |
| <u>Side effects:</u>       | allergy, GI disturbances          |                                                                                                          |

**ALKALINIZATION of URINE** is required to prevent urate stone formation  
pH > 6,4-6,8

## Drugs enhancing uric acid metabolism for patients with extreme high uric acid serum levels

| Drugs       | active ingredient                | mechanism of action                                                                              |
|-------------|----------------------------------|--------------------------------------------------------------------------------------------------|
| rasburicase | recombinant uricase              | uric acid<br> |
| pegloticase | pegilated<br>recombinant uricase | allantoic acid                                                                                   |

### Side effects:

allergy, anaphylactic shock,  
diarrhoe, fever