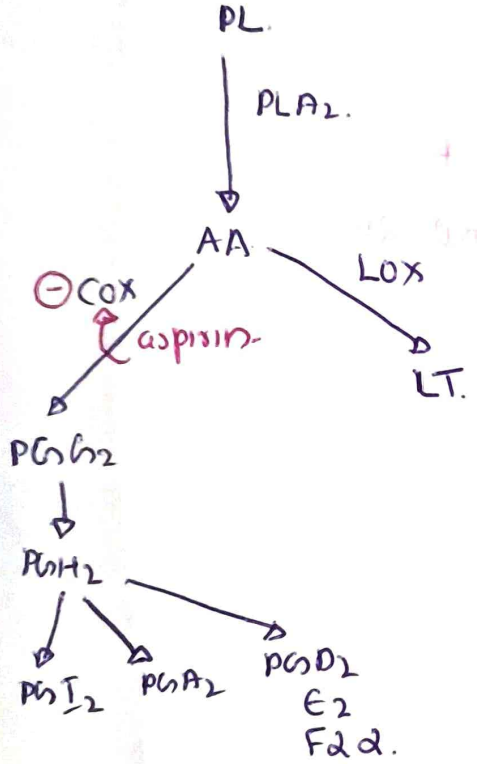


Aspirin

• acetyl salicylic acid

Mechanism of action

• Inhibits COX IRREVERSIBLY.
• Non selective COX ⊖



PGs → fever
pain
inflammation

Pharmacological action

Analgesic

- Musculoskeletal, dysmenorrhea etc.

Low dose enough

→ 0.3 - 0.6 g 6-8 hourly

→ weaker analgesic than morphine.

→ obtunding of pain receptors.

→ PG mediated sensitization is prevented.

→ raises threshold of pain perception

NSAIDs ⊖ COX

⊖ release of bradykinin, IL, TNFα.

pain sensitizing mechanism is blocked.

Antipyretic

0.3 - 0.6 g : 6-8 hourly.

→ aspirin resets hypothalamic thermostat.

↓ promotes heat loss

by cutaneous vasodilation

↓ fever.

* But it does not decrease heat production.

Anti-inflammatory

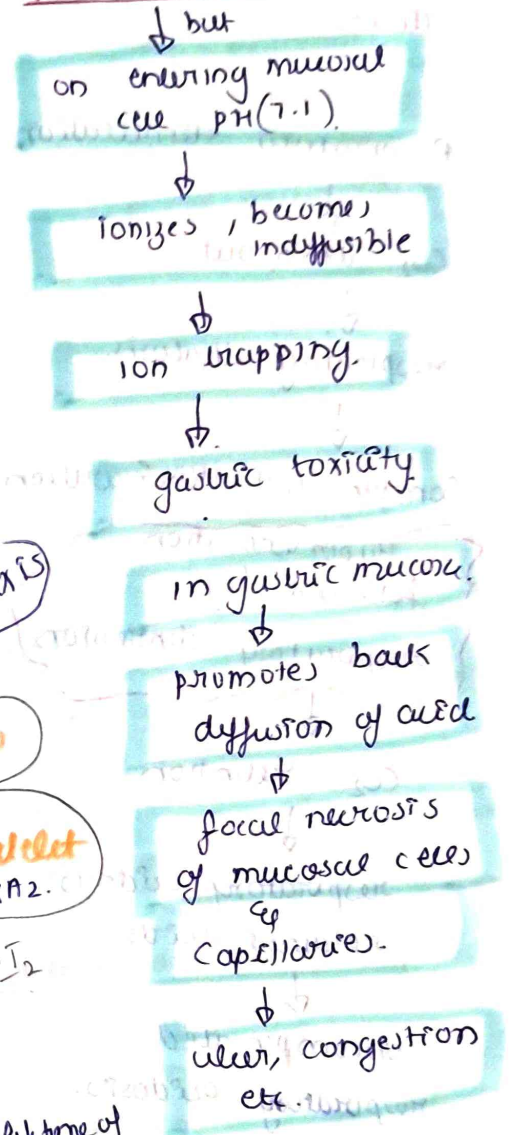
@ high dose
 → 3-6 g / day or
 100mg / kg / day.

→ acute Rheumatoid
 fever.
 - Rheumatoid arthritis
 - Polyarthritides

✓ at high doses, signs of inflammation
 like pain, tenderness, swelling
 WBC infiltration are suppressed.
 → do not help in stopping disease progression underlying
 → ↓ free radical production.

✓ X
 Joharia

Aspirin in gastric juice
 remains unionized.



Anti-platelet

@ low dose

(75-150 mg/day)

MI

prophylaxis

low dose

By irreversible
 inhibition of COX

Aspirin ⊖
 TXA₂ synthesis
 by platelet.

platelet aggregation
 is affected.

bleeding time is
 prolonged.

@ high dose

X No antiplatelet
 due to ⊖ of PGI₂ & TXA₂.

as it also PGI₂
 with TXA₂.

for 8-10 days is, lifetime of platelet.

Aspirin should be withdrawn
 before elective surgery to ↓ bleeding risk

GIT

- Irritates gastric mucosa, cause
 epigastric distress, nausea, vomiting.
- Cause gastric ulceration, bleeding.
- CI in gastric patients

⊕ CTZ → vomiting

prophylaxis of MI

Metabolic & other effects
of high / anti-inflammatory
doses:

Respiratory stimulation

↓
CO₂ wash out
↓
respiratory alkalosis.

↓
Compensated HCO₃ excretion.

Hyper ventilation
followed by
respiratory depression

↓
CO₂ retention.

↓
respiratory acidosis.
retained acids

↓
uncompensated
respiratory acidosis.

* CCF - in long use.

PK

- rapidly absorbed from stomach & small intestine.
- rapidly deacetylated
↓
salicylic acid.
- cross BBB, placenta.
- conjugated with glycine & excreted in urine.
- excretion - kidney.

ADR

- * Epigastric distress.
- * Gastric mucosal damage & peptic ulceration.
- * Nausea, vomiting.
- * ↑ blood occult in stool.
- * Salicylism: dizziness, tinnitus, vertigo.
- * Na⁺ & H₂O retention.

→ Acute Salicylate poisoning

- more common in children.
- fatal dose in adult - 15-30g.
lower in children.

manifestations:

- vomiting, water & electrolyte imb,
- delirium, hyperpyrexia, hemorrhage,
- death: resp failure
cvs collapse.

Treatment:

External cooling
iv fluids, glucose.

Blood transfusion & vitamins
if bleeding occurs.

continuous monitoring
required

uses, D/I, C/I

@ one note.