

Aspirin and other Salicylates

⚠️ 15% show intolerance to aspirin

✅ Aspirin Is the Cheapest Drug

Weak organic Acid

MOA
● Irreversibly Acetylates Cyclooxygenase
● All Others Are Reversible inhibitors

Antipyretic Analgesic
Sodium Salicylate
Choline Salicylate
Aspirin
💡 headache, Arthralgia, Myalgia

External
Counterirritant Methyl Salicylate

CVS
Decrease Incidence of:
Unstable Angina
Ischemic Attacks
Coronary Artery Thrombosis
POST MI Death
inhibiting PGE2 ● Closure Of PDA
● Chronic use Reduces its incidence
💡 Colon Cancer

😊 **Uses**

Admi
Topical(others)
Intestine
Stomach
Absorbed
Oral
Rectal
in Vomiting ⚠️ Not reliable

All Cross Placenta and BBB
Except Diflunisal

Dosage
↓ Analgesic At Low Doses
2X 325g/day
↓ Anti-inflammatory at high doses
12-20x 325g/day
↓ Anti-platelet at lowest doses

🚩 Decrease Incidence of MI
🚩 decrease POST MI Death
160g/day
For men over 50
● Preventing First MI
Between 160-325g/day

650g/day
Hydrolyzed By esterase
🔑 1st order Kinetics
⌚ T1/2= 3.5h
● Normal low doses

🚒 Hepatic metabolism is Saturated
>4g/day
🔑 0 order Kinetics
⌚ T1/2= >15h
● High Doses
● Interfere with uric Acid
Secreted in urine

kinetics

🚫 **Fate**

⚙️ **Actions**

Anti-inflammatory

Due to Decrease of PG Synthesis
☑️ Used in arithritis
Dont inhibit progress
Dont Cure
Histamine
Bradykinin

Analgesic

It inhibit PGE2
💡 Useful for Integumental pain
⚡ Combined With Opioids to
Treat pains of malignancy
PGE2, sensitize nerves to
not visceral
hypothalamic Thermoregulator

Antipyretic

PGE2 elevate set-point of
● **Causing Fever**
PGE2 Produced By
Infection, Hypersensitivity
Malignancy, Inflammation
Aspirin resets Thermostat
● Towards Normal
Increase heat loss, by vasodilation
💡 it has no effect on normal Temp.

Respiratory

Therapeutic doses
Higher Doses
Toxic Doses
Uncouple Oxidative phosporelation
Act on center
Central Resp. Paralysis
Resp. Alkalosis
Resp. Acidosis
Hyperventilation
● Death

GIT

PGI2
PGE2, PGF2
Aspirin Causes
Used To Counteract
Inhibit Acid Secretion
Increase Mucous Secretion
Gastric Distress
Ulceration
Hemorage
Misoprostol
Omeprazol
Cimetidine
PGE1 dervative
Proton pump inhibitor
H2-anti-histamines

Platelets

PGI2
TXA2
At low doses
High doses
PGE2, PGI2
Inhibit there aggregation
Enhances their agrigation
Inhibit only TXA2
Prolong Bleeding Time
In Platelets not in Endothelium
Till end of platelet life Time
Decreased Antiplatelet Effect
Esp. in presence of Vasoconstrictors

Kidney

Aspirin decrease them
At low doses
At High Doses
Water and Sodium Retintion
HyperKalimea
Decrease Uric Acid Execration
Increase Uric Acid Execration

➡️ **Adverse Effects**