Non Steroidal Antiinflammatory drugs (NSAIDs)

Disclaimer

All the content material provided here is only for teaching purpose.

NSAIDs

These are non narcotic and non opioids drugs.

These drugs are used for Antipyretic, Analgesic and anti-inflammatory action.

These drugs are selective or non selective inhibitors of Cyclooxygenase enzyme (COX).

Classification:

Based on selectivity they are classified into following four categories:

A. Non Selective COX inhibitors

B. B. Preferential COX–inhibitors

C. C. Selective COX–2 inhibitors

- **D. Analgesic–antipyretic with poor anti-inflammtory activity**

A. Non Selective COX inhibitors

- Salicylates: Aspirin
- Pyrazolones: Phenylbutazone, Oxyphenbutazone
- Indole derivatives; indomethacines, sulindac
- Propionic acid derivetives: Ibuprofen, Naproxen, Ketoprofen, flubiprofen
- Anthranilic acid derivatives; mefanemic acid
- Aryl–acetic acid derivatives: Diclofenac, Aceclofenac
- Oxicam derivatives; Piroxicam, Tenoxicam
- Pyrrolo–pyrrole derivatives: Ketorolac

B. Preferential COX–inhibitors

- Nimesulide, Meloxicam, Nabumetone

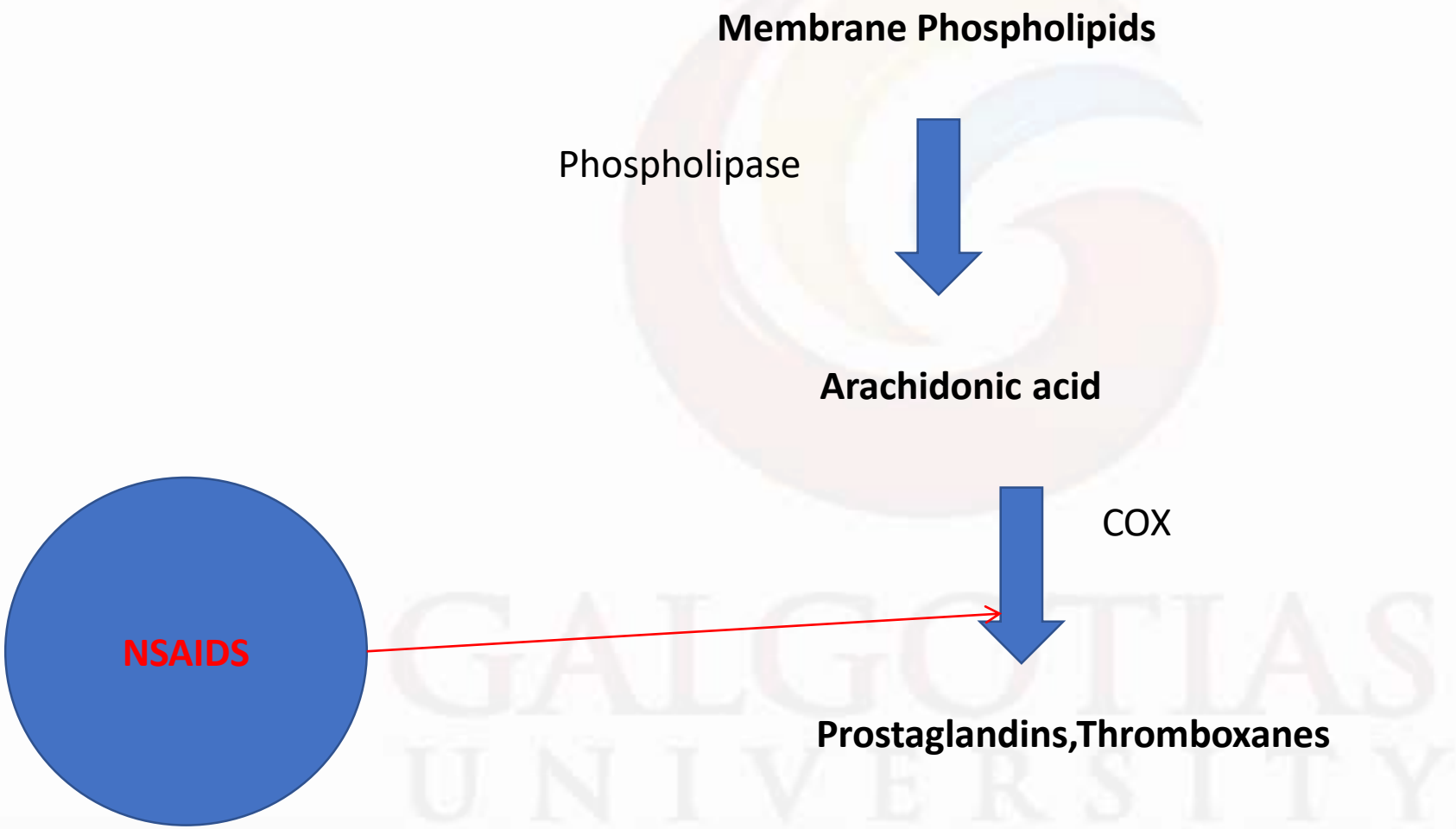
C. Selective COX–2 inhibitors

- Celecoxib, Rofecoxib, Valdecoxib (banned in India due to
- cardiac vascular toxicity). Etoricoxib, Lumaricoxin

D. Analgesic–antipyretic with poor anti-inflammtory activity

- Paraaminophenol derivative: Paracetamol
- Pyrazole derivatives: metamizole (Dipyrone)
- Benzoxazocine derivatives: Nefopam

Mechanism of action:



Pharmacological Action: (Salicylates)

1. *Analgesia*
2. *Antipyresis*
3. *Antiinflammatory*
4. *Dysmenorrhoea*
5. *Antiplatelet aggregatory*
6. *Gastric mucosal damage*
7. *Ductus arteriosus closure*
8. *Anaphylactoid reactions*

Pharmacokinetics:

- Aspirin is absorbed from the stomach and small intestines
- Aspirin is rapidly deacetylated in the gut wall, liver, plasma
- It is ~80% bound to plasma proteins
- They are also conjugated with glucuronic acid.
- The metabolites are excreted by glomerular filtration
- The plasma t½ of aspirin as such is 15–20 min

ADVERSE EFFECTS:

- *Hypersensitivity and idiosyncrasy*
- *Salicylism*
- *Acute salicylate poisoning*

Uses:

- *As analgesic*
- *As antipyretic*
- *Acute rheumatic fever*
- *Rheumatoid arthritis*
- *Osteoarthritis*

References

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Thank You