NSAIDs

(nonsteroidal anti-inflammatory drugs)

AIU. ALAMEIN INTERNATIONAL UNIVERSITY جامعة العلمين الدولية

Definition of NSAIDs

NSAIDs are a class of medications used in a wide array of pain, inflammation, and fever relief. They were quite helpful in many illnesses, including arthritis, musculoskeletal injury, menstrual cramps, and headache, among others.

NSAIDs have their drug mechanism by inhibiting enzymes called cyclooxygenases or COX involved in the production of prostaglandins-substances in the body responsible for inflammation, pain and fever.

Types of NSAIDs

There are two major types of COX enzymes that are targeted by NSAIDs: COX-1 and COX-2. COX-1 plays a role in maintaining normal function in the stomach lining, kidneys, and platelets, whereas COX-2 is mainly involved in producing inflammatory mediators. Inhibiting these enzymes reduces inflammation and pain caused by NSAIDs; however, when COX-1 is inhibited too much, it may cause side effects like stomach ulcers or bleeding.

Types of NSAIDs

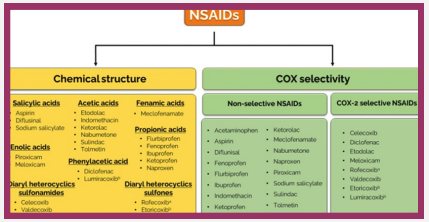
They can be classified on the basis of selective inhibition of either COX-1 or COX-2 enzymes and chemical class:

non-selective NSAIDS exhibit pain-relieving properties, which may also include gastrointestinal side effects.

Example: Aspirin, Diclofenac, Ibuprofen, Naproxen, Mefenamic acid, Indomethacin; Ketoprofen and Piroxicam.

Selective COX-2 Inhibitors: they reducing the gastrointestinal side effects.

Example:Celecoxib -Etoricoxib



Who can take NSAIDs?

Osteoarthritis and Rheumatoid Arthritis patients.

Musculoskeletal Injuries.

Headaches and Migraines.

Dysmenorrhea (Menstrual Cramps)

Post-Surgical Pain.

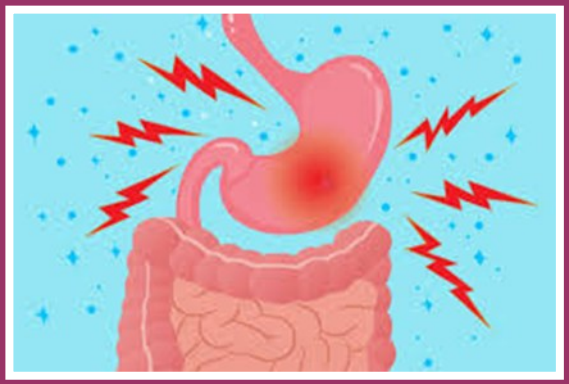
Contraindications:

- Patients with Peptic Ulcers.
- Patients with Renal Disease.
- People with Heart Disease.
- NSAIDs should also be used cautiously in people with liver disease, asthma.

Side effects of NSAIDs

Stomach Irritation, Ulcers and Bleeding, Cardiovascular Risks, Kidney Damage, Allergic Reactions and Liver Toxicity.

Other Side Effects: dizziness, headache, and ringing in the ears known as tinnitus.



Drug interactions

- Blood Thinners (Anticoagulants)
- Blood Pressure Medications
- Diuretics
- Methotrexate
- Lithium
- Alchol

Over dose of NSAIDs

Nausea and vomiting, Abdominal pain, Drowsiness or dizziness, Tinnitus (ringing in the ears), Confusion or agitation, Respiratory depression-which may rarely occur

Supportive care in NSAID overdose might include administration of activated charcoal.

Conclusion:

NSAIDs are widely used between effective groups but it is advised to use it within the limits.

References

Bindu S, Mazumder S, Bandyopadhyay U. Non-steroidal anti-inflammatory drugs (NSAIDs) and organ damage: A current perspective. Biochemical pharmacology. 2020 Oct 1;180:114147.

Created by:

Philopater Magdy Morces 23101843

Zeina Hamed Hassanien 23101052