



SNS COLLEGE OF ALLIED HEALTH SCIENCES
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**DEPARTMENT : CARDIO PULMONARY PERFUSION CARE
TECHNOLOGY**

COURSE NAME : PHARMACOLOGY

UNIT : ANTI INFLAMMATORY DRUGS

**TOPICS : DEFINITION, CLASSIFICATION, MECHANISM OF
ACTION, PHARMACODYNAMICS, PHARMACOKINETICS,
INDICATIONS, CONTRAINDICATIONS, SIDE EFFECTS**



ANTI INFLAMMATORY DRUGS



- Anti-inflammatory drugs are a class of medications that help reduce inflammation, pain, and swelling in the body.
- They are used to manage a variety of conditions, from minor aches to chronic inflammatory disorders.



CLASSIFICATION



- Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)
- Corticosteroids (Steroidal Anti-Inflammatory Drugs)
- Disease-Modifying Antirheumatic Drugs (DMARDs)



Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)



- Mechanism: NSAIDs work by inhibiting enzymes called cyclooxygenases (COX-1 and COX-2), which play a role in producing prostaglandins involved in inflammation, pain, and fever.
- Examples: Ibuprofen, Naproxen, Aspirin, Celecoxib (a COX-2 inhibitor), Diclofenac.



- Indications: Used for pain relief, reducing inflammation, and managing conditions like arthritis, menstrual cramps, headaches



Corticosteroids (Steroidal Anti-Inflammatory Drugs)



- Mechanism: Corticosteroids mimic the actions of hormones produced by the adrenal glands. They suppress inflammation by reducing the production of various inflammatory substances.
- Examples: Prednisone, Prednisolone, Dexamethasone.



- Indications: Used to treat severe inflammatory conditions like rheumatoid arthritis, asthma, inflammatory bowel disease, and certain skin conditions.



Disease-Modifying Antirheumatic Drugs (DMARDs)



- Mechanism: These drugs act on the immune system to slow down disease progression in autoimmune conditions, particularly in rheumatoid arthritis.
- Examples: Methotrexate, Hydroxychloroquine, Sulfasalazine, Leflunomide.



- Indications: Primarily used for treating autoimmune diseases like rheumatoid arthritis and certain types of inflammatory arthritis.



PHARMACODYNAMICS



- NSAIDs inhibit COX enzymes, reducing prostaglandin synthesis, which helps in decreasing inflammation, pain, and fever.
- Corticosteroids alter gene expression, modulate immune responses, and reduce the production of inflammatory mediators.



PHARMACOKINETICS



- Absorption: Varies among drugs - some are well absorbed orally, while others might require intravenous administration.
- Distribution: These drugs enter the bloodstream and reach target tissues, exerting their anti-inflammatory effects.
- Metabolism and Excretion: Metabolic pathways and elimination rates differ among drugs.



CONTRAINDICATIONS



- NSAIDs can cause gastrointestinal issues (ulcers, bleeding), kidney problems, and cardiovascular risks.
- Corticosteroids may lead to increased susceptibility to infections, osteoporosis, mood changes, weight gain, and elevated blood sugar levels.



SIDE EFFECTS



- NSAIDs: Gastrointestinal issues (ulcers, bleeding), kidney problems, cardiovascular risks.
- Corticosteroids: Increased susceptibility to infections, osteoporosis, mood changes, weight gain, elevated blood sugar levels.
- DMARDs: Increased risk of infections, liver toxicity, potential adverse effects on bone marrow function.



TECHNICIAN ROLE



- Regular assessment for side effects and therapeutic efficacy.
- Monitoring blood pressure, renal function, and bone density (with long-term corticosteroid use).



ASSESSMENT



- What is the Classification of Anti Inflammatory Drugs ?
- What all are the Indications of Anti Inflammatory Drugs ?