CHAPTER 26

Non-Steroidal Anti-inflammatory Agents

26.1. NON-STEROIDAL ANTI-INFLAMMATORY DRUGS

26.1.1. Introduction

Anti-inflammatory drugs are used to cure or prevent inflammation caused by Prostaglandin (PGE_2). These drugs are widely utilised for the alleviation of minor aches, pains, fever, and symptomatic treatment of rheumatic fever, rheumatoid arthritis, and osteoarthritis.

Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) are used to treat inflammation, mild-to-moderate pain, and fever. Specific uses include the treatment of headache, arthritis, sports injuries, and menstrual cramps. Aspirin is used to inhibit the clotting of blood and prevent strokes and heart attacks in individuals at high risk. NSAIDs are also included in many cold and allergic preparations.

26.1.2. Classification

NSAIDs are classified as follows:

1) **Non-Selective COX Inhibitors (Conventional NSAIDs)**
   i) **Salicylates:** Aspirin, Diflunisal, Salsalate, Sodium salicylate, Salol, Salicylamide, Benorilate, and Choline salicylate.
   ii) **Pyrazolone Derivatives:** Phenylbutazone and Oxyphenbutazone.
   iii) **Indole Derivatives:** Indomethacin and Sulindac.
   iv) **Propionic Acid Derivatives:** Ibuprofen, Naproxen, Ketoprofen, and Flurbiprofen.
   v) **Anthranilic Acid Derivatives:** Mephenamic acid.
   vi) **Aryl-Acetic Acid Derivatives:** Diclofenac.
   vii) **Oxicam Derivatives:** Piroxicam and Tenoxicam.
   viii) **Pyrrolo-Pyrrole Derivatives:** Ketorolac.
2) **Preferential COX-2 Inhibitors:** Nimesulide, Meloxicam, and Nabumetone.
3) **Selective COX-2 Inhibitors:** Celecoxib, Rofecoxib, and Valdecoxib.
4) **Analgesic-Antipyretics with Poor Anti-Inflammatory Action**
   i) **Paraaminophenol Derivatives:** Paracetamol (acetaminophen).
   ii) **Pyrazolone Derivatives:** Metamizole (dipyrone) and Propiphenazone.
   iii) **Benzoxazocine Derivatives:** Nefopam.

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