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A REVIEW STUDY ON MODERN PHARMACOLOGY OF PARACETAMOL

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ABSTRACT

The analgesic and antipyretic properties of paracetamol are widely utilized throughout the globe. Its effect is comparable to that of NSAIDs, and it is especially similar to COX-2 selective inhibitors. Although paracetamol is a lesser analgesic than NSAIDs or COX-2 selective inhibitors, it is often chosen due to its higher tolerance. Despite its NSAID-like properties, the mechanism of action of paracetamol has been debated, but it is now widely recognized that it inhibits COX-1 and COX-2 by inhibiting their peroxidase activity. This inhibits the production of phenoxyl radicals from a key tyrosine residue required for COX-1 and COX-2 cyclooxygenase activity and prostaglandin (PG) synthesis. When modest amounts of arachidonic acid and peroxides are present, paracetamol inhibits the synthesis of PGs and associated components with selectivity, but it has limited action when significant levels of arachidonic acid and peroxides are present. As a consequence, paracetamol does not suppress the severe inflammation associated with rheumatoid arthritis and acute gout, but it does reduce the milder inflammation associated with tooth extraction and is active in a range of inflammatory tests in experimental animals. COX-2 selectivity seems to be a common feature of paracetamol. The low anti-platelet activity and excellent gastrointestinal tolerability of paracetamol demonstrate its apparent COX-2 selectivity of action. Paracetamol inhibits other peroxidase enzymes, including myeloperoxidase, unlike non-selective NSAIDs and selective COX-2 inhibitors. Paracetamol oxidation and reduced production of halogenating oxidants are involved in myeloperoxidase inhibition.

KEYWORDS: *Diseases, Health, Medicine, Paracetamol, Peroxides.*

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