OPEN ACCESS Freely available online

Pharmaceutica Analytica Acta

ISSN: 2153-2435

Perspective

A General View on Nonsteroidal Anti-Inflammatory Drug

Dai Ron*

Department of Analytical Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece

DESCRIPTION

Nonsteroidal anti-inflammatory drugs (NSAIDs) are a type of medication that relieves pain, reduces inflammation, lowers fever, and prevents blood clots. The danger of gastrointestinal ulcers and bleeding, heart attack, and kidney illness varies depending on the drug, its dose, and the length of time it is used.

Non-steroidal medications are distinguished from steroids, which, although having a comparable eicosanoid-depressing, anti-inflammatory effect, also have a variety of additional side effects. The name was first used in 1960 to distinguish these drugs from steroids, which were stigmatized at the time due to some associations with anabolic steroid usage.

The activity of Cyclooxygenase (COX-1 or COX-2) enzymes is inhibited by NSAIDs. These enzymes are involved in the manufacture of essential biological mediators in cells, such as prostaglandins, which play a role in inflammation, and thromboxane, which play a role in blood clotting.

Non-selective NSAIDs and COX-2 selective NSAIDs are the two types of NSAIDs available. The majority of NSAIDs are non-selective, inhibiting both COX-1 and COX-2 activity. While these NSAIDs reduce inflammation, they also limit platelet aggregation, raising the risk of gastrointestinal ulcers and bleeding. COX-2 selective inhibitors have less gastrointestinal side effects, but they induce thrombosis, and several of them raise the risk of heart attack significantly. As a result, due to the significant risk of undetected vascular disease, several older COX-2 selective medicines are no longer utilized. The various roles and tissue localizations of each COX isoenzyme account for these disparities. All NSAIDs raise the risk of renal disease and, through a similar mechanism, heart attack by reducing physiological COX activity. Furthermore, because haemoglobin requires the formation of erythropoietin, NSAIDs might suppress its production, leading to anaemia.

Aspirin, ibuprofen, and naproxen are the most common NSAIDs, all of which are accessible over-the-counter in most countries. Because it has only moderate anti-inflammatory properties, paracetamol is not classified an NSAID. Paracetamol works to relieve pain by reducing endocannabinoid reuptake and blocking COX-2 mostly in the brain, but not so much in the rest of the body. NSAIDs are frequently recommended for the treatment of pain and inflammation in acute and chronic diseases.

Adverse effects

Because of the widespread usage of NSAIDs, these medications' side effects have grown increasingly common. The use of nonsteroidal anti-inflammatory drugs (NSAIDs) raises the risk of gastrointestinal issues, kidney illness, and severe cardiovascular events. There is evidence that aspirin, which is often taken for post-operative discomfort, increases the risk of kidney problems. Given mixed evidence of increased risk of leakage from any bowel anastomosis produced, their usage after gastrointestinal surgery is still debatable.

NSAIDs cause dyspepsia in 10–20 percent of those who take them. High doses of prescription NSAIDs were linked to significant upper gastrointestinal side effects, including bleeding, in the 1990s.

NSAIDs, like all drugs, have the potential to interact with others. Concurrent use of NSAIDs with quinolone antibiotics, for example, may raise the risk of quinolone-induced central nervous system side effects, such as seizures. The benefits and hazards of using nonsteroidal anti-inflammatory drugs (NSAIDs) to treat persistent musculoskeletal pain are debatable. Each medicine has a benefit-risk profile, and the danger of no therapy should be weighed against the competing potential risks of alternative therapies. The balance between the benefits of pain-relieving drugs such as NSAIDS and the potential for side effects in those over the age of 65 has not been properly identified.

Correspondence to: Dai Ron, Department of Analytical Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece, E-mail: rondai107@gmail.com

Received: December 2, 2021; **Accepted:** December 16, 2021; **Published:** December 23, 2021

Citation: Ron D (2021) A General View on Nonsteroidal Anti-Inflammatory Drug. Pharm Anal Acta. 12: 663.