Are anti-inflammatories pain killers?

Commonly in discussing treatment options in the clinic, clients are confused as to the difference between analgesics (pain killers) and non-steroidal anti-inflammatory medication (NSAIDs) and whether they need to, or are able to take both together. They are both different families of medication, which often both provide a pain relieving effect on injuries, however the two different medications work in quite different ways.

The short answer is that analgesic medication works on central modulation of pain by essentially changing the way the brain processes the pain signal being sent from the injured tissue in the body, turning down the volume of the pain signal if you like. Anti-inflammatory medication works locally at the source of injury, by interrupting the chemical processes that are involved in producing swelling and inflammation.

Prostaglandins are hormone like chemicals in the body, which when released at the site of an injury, will dilate blood vessels and raise temperature, thus contributing to inflammation, pain and fever. They also protect the lining of the stomach and intestines form the damaging effects of acid, promote blood clotting by activating platelets and promote normal kidney function.

NSAIDs work by blocking a specific enzyme called cyclooxygenase (COX), which is used by the body in the production of prostaglandins. By intervening to inhibit the production of prostaglandins, NSAIDs relieve the discomfort of fever and reduce inflammation and the associated pain.

There are two types of COX enzymes, COX-1 and COX-2. Both enzymes produce prostaglandins that are involved in inflammation, pain and fever, however only COX-1 produces prostaglandins that activate platelets and protect the stomach and intestinal lining. Therefore, NSAIDs which block both COX-1 and COX-2 may have gastrointestinal side effects such as indigestion, stomach upset or stomach pain. In extreme cases, this can actually result in stomach ulcers.

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As a result, COX-2 inhibitors were developed, which are more selective in only blocking the production of COX-2 enzyme in order to reduce these gastrointestinal side effects. Unfortunately, these medications did not completely remove the problem and have been shown to have cardiovascular side effects in certain groups of patients. Due to the potential side effects of NSAIDs, it is always best to take them only for a short period of time where possible or when prolonged use is required, do so only under instruction and supervision of your GP.

Risk factors for side effects of anti inflammatories are increased in those over 65 years of age. You should not take NSAIDs if you are pregnant or trying, have gastrointestinal ulcers or bleeds or are allergic to NSAIDs including aspirin. NSAIDs have also been demonstrated to inhibit fracture healing and should generally be avoided in these injuries.

Caution should be exercised with the use of NSAIDs in the presence of cardiac complaints. NSAIDs when combined with blood thinning medication such as Warfarin, increase the risk of bleeding. NSAIDs can cause kidney failure when combined with ACE inhibitors, which are medications used to treat heart problems and high blood pressure. They can also oppose the effects of medication for heart failure and high blood pressure such as ACE inhibitors, beta blockers and diuretics, making them less effective. In the presence of any significant cardiac issues, use of any anti-inflammatory medication should be under strict instruction from your GP.

Generally speaking, analgesics and NSAIDs work in very different ways on different parts of the body and do not interact with one another. As such it is safe to take these two medications together, however if you have any concerns or reservations, it is always best to consult a Pharmacist or your GP.

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