

## Medications - non-steroidal anti-inflammatory drugs

Non-steroidal anti-inflammatory medications are commonly used to manage the pain and inflammation (swelling and redness) associated with some types of arthritis (such as rheumatoid arthritis) and other musculoskeletal disorders.

Non-steroidal anti-inflammatory drugs (NSAIDs) are also used to treat non-inflammatory conditions such as migraine, period pain and postoperative pain. The blood-thinning properties of aspirin are also used to reduce the risk of heart attack and stroke in high-risk patients.

### How anti-inflammatory medications work

Prostaglandins are hormone-like chemicals in the body that cause inflammation by raising the local temperature and dilating the blood vessels. Anti-inflammatory medications relieve inflammation and the associated pain by blocking a specific enzyme (called 'cyclooxygenase' or COX) that the body needs in order to make prostaglandins. Inflammation cannot develop without prostaglandins.

### Side effects

While NSAIDs are effective to relieve pain and inflammation, they can cause unwanted side effects. Gastrointestinal symptoms such as stomach upset and stomach pain may be caused by anti-inflammatory medications. Use of NSAIDs can also cause stomach ulcers. This is mainly because these medicines attack the enzyme that protects the intestines from normal stomach acids.

The anti-inflammatory medications known as COXIBs were developed to reduce the risk of these gastrointestinal side effects. These types of NSAIDs block the enzyme that leads to inflammation but don't knock out another enzyme that protects the stomach lining against gastric acid. COXIBs are a major advance, but they have not removed the problem and they can still cause gastrointestinal side effects.

### Common side effects

Some of the common side effects of anti-inflammatory medications include:

- Nausea
- Indigestion or upset stomach
- Stomach ulcers or bleeding
- Raised liver enzymes
- Diarrhoea
- Headache
- Dizziness
- Salt and fluid retention
- High blood pressure.

### Less common side effects

- Ulcers of the oesophagus (food pipe)
- Rectal irritation (if suppositories are used)
- Cardiovascular problems (heart failure, heart attack)
- Hyperkalaemia (high levels of potassium in the blood)
- Kidney problems
- Confusion
- Bronchospasm (difficulty breathing)
- Skin irritation, reddening, itching and rash (if used as a cream).

### Rare side effects

- Blood abnormalities
- Interstitial nephritis (inflamed tubes in the kidney)
- Cystitis (bladder infection)
- Nephrotic syndrome (a range of symptoms related to diseased kidneys)
- Acute renal failure (kidney failure)
- Papillary necrosis (disease where parts of the kidney are destroyed)
- Photosensitivity (being sensitive to light)
- Stevens–Johnson syndrome (serious condition where flu-like symptoms are followed by red skin lesions)
- Epidermal necrolysis (a serious skin condition where the top skin layer separates from other layers of skin)
- Hepatitis (inflamed liver)
- Meningitis (inflammation of the brain)
- Blurred vision
- Tinnitus (ringing in the ears)
- Allergy and asthma.

### **Side effects can be life threatening**

Statistics from the United Kingdom estimate that NSAIDs complications cause about 2,000 deaths each year. One reason for potential complications is that these drugs block pain, fever and inflammation so the person may not pick up disease symptoms in their early stages.

### **Used wisely they provide helpful relief**

While these drugs can potentially cause many side effects, if prescribed under the right conditions and used as instructed, they have great benefit. Anti-inflammatory medications should be used sparingly and for a short time.

If you need to use these medications for a long time (for example, to manage the symptoms of arthritis when other therapies have failed to offer relief), you should make sure you see your doctor regularly.

### **High risk groups**

Some people are at higher risk of serious complications from taking anti-inflammatory medications. Risk factors include:

- Age, since adverse reactions are more common in people 65 years and over
- Medical history of gastrointestinal problems such as ulcers or *Helicobacter pylori* infection (the germ that can cause ulcers)
- Medical history of particular heart problems
- Diabetes
- Kidney disease
- Taking high doses of anti-inflammatory medications
- Taking more than one anti-inflammatory medication
- Taking certain other drugs while taking anti-inflammatory medications.

### **Drug interactions**

Anti-inflammatory medications may interact with other drugs and cause adverse reactions. Examples include:

- NSAIDs and blood-thinning medications (such as warfarin) increase the risk of serious bleeding from gastrointestinal ulcer.
- NSAIDs can cause kidney failure when they are combined with ACE inhibitors (drugs to reduce blood pressure) and diuretic medications (to remove excess fluid).
- NSAIDs can also block the effects of many drugs including ACE inhibitors, beta blockers (heart medication) and diuretics.
- Cortisone drugs increase the risk of adverse reactions.
- Alcohol irritates the stomach lining – people who regularly drink alcohol while taking anti-inflammatory medications increase their risk of damage to the gastrointestinal tract.

### **Be wary of over-the-counter medicines**

Some over-the-counter preparations contain anti-inflammatory medications. For example, cold and flu tablets, some herbal medicines and cough syrups may contain aspirin.

If you take anti-inflammatory medication, you may increase your risk of side effects if you also take an over-the-counter preparation that contains aspirin. Check with your pharmacist before buying any over-the-counter preparation.

Except in some situations when your doctor recommends it, you should not take more than one of these types of drugs at the same time.

### **General suggestions**

Be guided by your doctor, but general suggestions include:

- If you take anti-inflammatory medications, it is very important to tell your doctor and pharmacist about any other drug you take (or plan to take) including over-the-counter drugs and herbal medicines.
- See your doctor if you think your anti-inflammatory medication may be causing side effects.
- Be cautious of long-term or high-dose treatment with anti-inflammatory medication if you are at risk of side effects. Discuss your concerns with your doctor. Ask if there are any alternatives to anti-inflammatory medications that you could try.
- Explore different ways to manage your pain. For example, you could try losing weight, physical therapies, anti-inflammatory creams (that have fewer side effects), pain-killing medications that contain paracetamol, or joint replacement surgery.
- If you need to keep taking anti-inflammatory medications, your doctor may be able to prescribe other drugs to help manage some of the side effects.
- Don't stop taking your anti-inflammatory medication without your doctor's knowledge and approval.

### **Where to get help**

- Your doctor
- Pharmacist
- Rheumatologist
- Medicines Line Tel. 1300 888 763
- The Gut Foundation Tel. (02) 9382 2749
- Arthritis Victoria Tel. (03) 8531 8000 or 1800 011 041

### **Things to remember**

- Anti-inflammatory medications are commonly used to manage the pain and inflammation associated with arthritis and other musculoskeletal disorders.
- Anti-inflammatory medications can cause serious side effects and even death.
- Anti-inflammatory medications should generally only be used sparingly and for a short time.

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