

ALL ABOUT NSAIDS (NON –STEROIDAL ANTIINFLAMMATORY DRUGS)

WHAT ARE NSAIDS ?

NSAIDS are a class of drugs that have analgesic , anti-inflammatory & antipyretic action .

They relieve pain (mostly associated with inflammation & arising from integumental structures like muscles, joints , bones , tendons etc) .

They also relieve inflammation& fever

VARIOUS NSAIDS ARE –

Aspirin , ibuprofen , indomethacin , diclofenac , celecoxib , nimesulide , mefenamic acid , paracetamol , ketorolac

DOSAGE FORMS & ROUTES -

They are available as tablets , injections , eyedrops, creams , ointment , sprays

Used by oral , parenteral & topical route .

HOW DO THEY WORK ?

They inhibit prostaglandin synthesis by inhibiting cyclo-oxygenase enzyme . PG produce hyperalgesia by sensitizing the peripheral nerve endings to pain . This leads to analgesic , anti-inflammatory & antipyretic action . Aspirin also has antiplatelet action & thus prevents formation of blood clots . This action can be useful to prevent heart attack & stroke .

THERAPEUTIC USES –

1) to relieve pain due to –

Headache , backache , myalgia, arthralgia , neuralgia , toothache, menstrual cramps , gout , bursitis ,

2) to relieve inflammation in – rheumatoid arthritis , osteoarthritis , fibromyositis , acute rheumatic fever , inflammatory bowel disease

3) to relieve fever – in all types of fever occurring due to various viral & bacterial infections

4) to prevent further attacks of stroke & myocardial infarction in post stroke & post MI patients , where aspirin at low dose of 50 – 300 mg / day can be used .

HOW LONG SHOULD YOU USE THEM ?

These drugs should be used for short term for pain & should not be taken for more than 10 days

& for fever - for not more than 3 days

If taken for too long , you are at high risk for side effects & toxicity .

HOW SOON DO NSAIDS WORK ?

When you take them for short term or acute pain , such as headache , or muscle strain , these drugs may do the trick in just a few hrs .

Antiplatelet effect also starts immediately & lasts for 3 days .

SIDE EFFECTS –

Peptic ulcer , gastritis , epigastric pain , nausea , vomiting, black coloured stools .

Over long term use it can cause analgesic nephropathy (hypertension & acute papillary nephritis)

Headache , confusion , rash , urticarial, pruritus , bronchial asthma , & liver toxicity

HOW TO PREVENT SIDE EFFECTS –

NSAIDS should be taken with food , milk, or antacids to prevent stomach problems .

They should not be given in a known case of peptic ulcer , liver disease , kidney disease , bronchial asthma, bleeding disorders or children with viral fever & pregnancy .

NSAIDS should be stopped , one week before elective surgery to prevent risk of bleeding due to antiplatelet effect .

Long term use of NSAIDS should be discouraged

NSAIDS should not be made available as over-the-counter(OTC) drugs .

WHO IS AT RISK OF SIDE - EFFECTS ?

Elderly patients , children , pregnant women , alcoholics, smokers , patients with bronchial asthma , peptic ulcer , liver disease , kidney disease

Patients receiving antiplatelets, anticoagulants , steroids , SSRI , Antidepressants are also at risk of side effects due to NSAIDS .

HOW TO TAKE THEM SAFELY ?

Keep track of how many doses you have taken . Take the minimum dose & take in acute pain only .

Don't develop a habit to take these drugs in mild pain .

Don't exceed the dose otherwise toxic effects can occur .

Don't take 2 or more NSAIDS at a time . It will add to toxicity , side effects , & increased cost of treatment .

If you are on low-dose aspirin , then avoid other NSAIDS with it .

WHO SHOULDN'T TAKE NSAIDS ?

Children, elderly, those suffering from bronchial asthma , peptic ulcer , hepatic disease , kidney disease , those with h/o hypersensitivity reactions in past , pregnant women , h/o bleeding disorder , before elective surgery (stop 1 week before elective surgery)

NSAID ALTERNATIVE –

If other NSAIDS are not tolerated then , paracetamol can be given which is safe . But it only reduces fever . It is not effective in relieving pain & inflammation .

DRUG INTERACTIONS –

Oral anticoagulants – NSAIDS should not be given with oral anticoagulants like warfarin due to risk of bleeding

Sulfonylureas & phenytoin – NSAIDS should not be given with these drugs because NSAIDS may lead to toxicity of these drugs by increasing their plasma levels .

NSAIDS should not be given with probenecid as it may counter urocosuric effect of probenecid

NSAIDS should not be given with antihypertensives & diuretics as it may blunt their action due to salt & water retention

NSAIDS should not be given with other nephrotoxic drugs .

WHY ONLY COX 1 & NOT COX 2 ?

NON- selective cox inhibitors , like aspirin , ibuprofen can lead to many side effects so many don't tolerate them . So selective COX 2 inhibitors like celecoxib & rofecoxib can be used . They are well tolerated but they themselves increase risk of thrombotic events & increase risk of MI & stroke .

ANTIDEPRESSANT & ANTI SEIZURE MEDICINE –

Some antidepressants like SNRI like duloxetine , venlafaxine & tricyclics can relieve pain .

Anti epileptics like gabapentin , pregabalin can relieve neuralgias & fibromyalgias

HERBAL PAIN RELIEVERS –

Plant -based remedies including ginger, garlic, turmeric may help you manage arthritis pain because of their anti-inflammatory property .

Creams with capsaicin , chili pepper oil can relieve joint pain too . The spicy chemical may reduce pain signals to your brain too . This effect may be seen after a few weeks .

A FEEL – GOOD LIFESTYLE

Your daily habits can help you manage your pain in a better way . Exercise releases endorphins , your body's natural pain relief chemicals . On the other hand stress can make you feel worse . Find ways to relax & you may not get hurt so much . Enough sleep is also key . Make sure you have plenty of sleep to cope with chronic pain .

