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NSAIDs should be used with caution when treating the elderly



Nonsteroidal anti-inflammatory drugs (NSAIDs) are commonly given to treat pain in the elderly. NSAIDs include: Aspirin (acetylsalicylic acid), Advil/Motrin (ibuprofen), Aleve (naproxen), Celebrex (celecoxib), Arthrotec/Voltaren (diclofenac), Mobicox (meloxicam), Indocid (indomethacin) and others.

According to some studies, as many as 25% of patients on chronic NSAID therapy will develop ulcer disease and 2 - 4 % of chronic users will bleed or perforate [1]. In the US, NSAID related gastrointestinal events result in more than 100,000 hospital admissions per year and between 7,000 - 10,000 deaths annually [2]. Among seniors in the US, NSAID use causes an estimated 41,000 hospitalizations and 3300 deaths each year [3].

Although NSAIDs can be very effective for certain types of pain, there are many precautions for using them.

Precaution	Reason for Precaution
Patients with a history of a stroke or transient ischemic attack (TIA)	NSAIDs increase risk for stroke/TIA especially in patients with a previous history of TIA/stroke
Patients with a history of heart attack(s)	NSAIDs increase risk for heart attack especially in patients with a previous history of heart attack
Patients with congestive heart failure it is contraindicated to use NSAIDs	NSAIDs can cause exacerbations of heart failure and lead to fluid retention
Using is contraindicated in patients who have recently undergone Coronary Artery Bypass Graft (CABG) surgery	NSAIDs increase risk of heart attack and stroke following CABG surgery
Patients with poor kidney function (with a creatinine clearance less than 30 ml/min NSAIDs are contraindicated)	To prevent acute kidney failure. NSAIDs may also cause hyperkalemia (high potassium)
Patients with liver cirrhosis	To prevent kidney complications
Patients taking anticoagulants	To prevent stomach bleeding
Patients with a history of NSAID induced stomach bleeding/ulcers	To prevent stomach bleeding
Patients with uncontrolled hypertension	NSAIDs can increase blood pressure
Patients taking corticosteroids (prednisone or dexamethasone)	Corticosteroids increase risk for stomach bleeding with NSAIDs
Patients taking anti-depressants	Certain anti-depressants (SSRIs e.g. citalopram and escitalopram) and SNRIs (e.g. venlafaxine and duloxetine)) can increase risk for stomach bleeding with NSAIDs
Patients taking low dose Aspirin for cardioprotection	Advil/Motrin (ibuprofen) can reduce the cardioprotective effects of low dose Aspirin.

In general, as we age our kidney function declines and in the majority of elderly patients (age > 75 years) it can be assumed they have reduced kidney function (usually between 30-50% of a normal healthy adult). Elderly patients are also more likely to have significant medical conditions such as a previous heart attack, previous stroke, congestive heart failure or kidney failure when compared with the general population. Elderly patients are also more likely to be taking more medications than a healthy adult and are more likely to be at risk from drug interactions with NSAIDs. Elderly individuals are generally at a greater bleeding risk from NSAIDs than healthy adults even if they are on few medications and do not have other risk factors. All of this means that NSAIDs should be used cautiously in the elderly and for the shortest duration possible and at the lowest effective dose.

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When elderly patients are prescribed NSAIDs they should be prescribed an agent to protect their stomach from bleeding. **The latest guidelines state that any patient over 65 years of age who is started on an NSAID should be started on an agent to protect the stomach if they are not already on one [4]** (see index for guideline). Bleeding can occur very quickly (within several days of use of an NSAID), thus protective treatment should be started upon initiation of the NSAID. Proton pump-inhibitors (PPIs), such as Pantoloc (pantoprazole) or Prevacid (lansoprazole), is the drug class of choice for prevention of stomach bleeding from NSAID use. PPIs help to reduce the acid that the stomach makes which helps to protect patients from potential bleeding with NSAIDs.

Patients taking low dose Aspirin for cardioprotective effects are also at increased risk for stomach bleeding as numerous studies have demonstrated [5]. **For this reason, patients who are taking NSAIDs (including low dose Aspirin) long term should be monitored for bleeding by having regular blood work done.**

For patients in whom an oral NSAID should not be used, a topical NSAID could be used in its place. Topical NSAIDs are not absorbed into the body in a clinically significant amount and can be used in patients in whom an oral NSAID would be a poor choice (for example, in a patient with a previous heart attack or stroke). Voltaren (diclofenac) 1.6% gel is an example of a topical NSAID and at Medical Arts Pharmacy we also make diclofenac 10% cream, which is available by prescription (please note these diclofenac creams are not covered by the Ontario Drug Benefit program)

Index for Guidelines for Prevention of NSAID ulcers (Am J Gastroenterology) [4]

Patients at increased risk for NSAID GI toxicity	
High risk	<ol style="list-style-type: none"> 1. History of a previously complicated ulcer, especially recent 2. Multiple (>2) risk factors
Moderate risk (1 - 2 risk factors)	<ol style="list-style-type: none"> 1. Age >65 years 2. High dose NSAID therapy 3. A previous history of uncomplicated ulcer 4. Concurrent use of aspirin (including low dose) corticosteroids or anticoagulants
Low risk	<ol style="list-style-type: none"> 1. No risk factors

Summary of recommendations for prevention of NSAID-related ulcer complications

	Gastrointestinal Risk		
	LOW	MODERATE	HIGH
Low Cardiovascular risk	NSAID alone (the least ulcerogenic NSAID at the lowest effective dose)	NSAID+PPI/misoprostol	Alternative therapy if possible or COX-2 inhibitor+PPI/misoprostol
High cardiovascular risk (low-dose ASA required)	Naproxen + PPI/misoprostol	Naproxen + PPI/misoprostol	Avoid NSAIDs or COX-2 inhibitors. Use alternative therapy

Note

Gastrointestinal risk is stratified into low (no risk factors), moderate (presence of one or two risk factors), and high (multiple risk factors, or previous ulcer complications, or concomitant use of corticosteroids or anticoagulants). High CV risk is arbitrarily defined as the requirement for low-dose aspirin for prevention of serious CV events. All patients with a history of ulcers who require NSAIDs should be tested for *H. pylori*, and if the infection is present, eradication therapy should be given. COX-2 inhibitor, like Celebrex is safer for the stomach. Naproxen is safer for patients with cardiovascular problems. In all cases, blood pressure and kidney function should be closely monitored after adding dose of an NSAID.

References

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- [2] Singh G. Epidemiology of NSAID induced gastrointestinal complications. *J Rheumatol Suppl* 1999 ; 56 : 18 – 24 .
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- [4] Lanza FL. Guidelines for prevention of NSAID-related ulcer complications. *Am J Gastroenterol.* 2009 Mar;104(3):728-38.
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