

Problem: NSAID use and anyone of the following risk factors for serious peptic ulcer disease:

- . age 80 years*
- . current use of anticoagulant*
- . current use of oral corticosteroid*

Goal: *Discontinue or reduce dose to minimum needed to control pain, with use of acetaminophen if appropriate. If NSAID required, switch to ibuprofen.*

Solution:

1. Collect clinical details

- ✓ What is the reason the patient is taking an NSAID? If a patient has rheumatoid arthritis or crystal arthropathies (e.g. gout) their medication should not be altered.
- ✓ What other analgesics is the patient taking (including dose and frequency)?
- ✓ If the patient is taking an antacid or antiulcer medication, ascertain why (e.g. prophylaxis, --gastric symptoms, history of ulcer, history of GI bleed)
Note: If the patient has evidence/history of renal failure, there is increase risk overall and on-going use should be discussed w/MD.

2. Inform physician

- a. Discuss pattern of NSAID use and risk factors for bleeding and others (*see Facts*).
- b. Suggest use of acetaminophen and nonpharmacologic alternatives.

3. Ask for follow-up instructions

4. Discuss with patient/caregiver

- a. Risk/Dangers of continued NSAID use.
- b. Alternative methods of pain control (*see Suggested Non-DrugTreatments*)
- c. Ascertain willingness to try acetaminophen if there is no known liver cirrhosis or hepatitis.

Background Information

Facts:

1. The side effects of NSAIDs on the upper GI tract of elderly persons are frequent and serious. They include:
 - Dyspepsia
 - Ulceration
 - Hemorrhage
2. Elderly persons who use NSAIDs and have at least one of the risk factors listed above (\geq 80 years of age, current use of anticoagulant, oral corticosteroid) are at higher risk of gastrointestinal tract complications. It is estimated that 41,000 excess hospitalizations and 3,300 excess deaths occur each year among elderly NSAID users.
- 2a. Below are some agents used for preventing NSAID-induced GI complications:

H2 receptor blocking agents		Other antiulcer drugs	
Generic Name	Trade Name	Generic Name	Trade Name
cimetidine	Tagament®	misoprostol	Cytotec®
famotidine	Pepcid®	omeprazole	Prilosec®
nizatidine	Axid®	sucralfate	Carafate®
ranitidine	Zantac®	esomeprazole	Nexium®
		lansoprazole	Prevacid®
		pantoprazole	Protonix®
		rabeproazole	Aciplex ®

3. Most muscle and joint pain in elderly persons is due to osteoarthritis. Osteoarthritis involves little or no inflammation* When NSAIDs are prescribed for relief of pain due to osteoarthritis, several important facts should be considered:
 - NSAIDs have a modest pain reduction effect of only 20-30%.
 - Acetaminophen provides about the same amount of pain relief as NSAIDs in many patients.
 - Glucosamine(+/-chondroitin) may offer some relief at doses of 1500mg daily.
 - Analgesic creams and non-drug pain relief measures such as joint protection, exercise, and heat/cold application can be effective measures to reduce pain due to osteoarthritis.

***Note from Geriatric Advisory:** Osteoarthritis can have an acute pain phase occasionally, eg when a small cartilage or bone spur is chipped off into the joint space, one can experience all the inflammatory symptoms of arthritis. At this time, a short course of NSAIDS can be useful.

4. Trials show that ibuprofen when given in low doses (\leq 1600 mg/24 hrs) has a lower rate of serious toxic effects on the gastrointestinal tract.

5. Cimetidine and ranitidine do not reduce NSAID associated gastric ulceration. Only misoprostol, omeprazole and high dose famotidine have been shown to be effective as prophylaxis.
6. Below are relative risks of GI adverse effects:
 - A. Lowest Risk: COX2 Inhibitors (Selective)
 - 1) Celecoxib (Celebrex)
 - B. Low Risk (Non-Selective NSAIDS)
 - 1) Ibuprofen 1.0
 - 2) Aspirin 1.6
 - 3) Diclofenac (Voltaren) 1.8
 - 4) Sulindac (Clinoril) 2.1
 - 5) Nabumentone (Relafen)
 - 6) Etodolac (Lodine)
 - 7) Salsalate
 - C. Medium Risk
 - 1) Diflunisal (Dolobid) 2.2
 - 2) Naproxen (Naprosyn) 2.2
 - 3) Indomethacin (Indocin) 2.4
 - 4) Tolmetin (Tolectin) 3.0
 - D. High Risk
 - 1) Piroxicam (Feldene) 3.8
 - 2) Ketorolac (Toradol) 4.2
 - 3) Flurbiprofen (Ansaid)

Note: Current use of an ACE-I or ARB may increase the risk of renal failure or hyperkalemia.

Guidelines for Use:

- For elderly persons taking NSAIDs who have at least one of the risk factors for peptic ulcer disease, a trial discontinuation of the NSAID with substitution of routine acetaminophen (APAP) is recommended, unless the patient is not eating or drinks alcohol heavily, in which case all analgesics should be used with caution.
- Always use NSAID with food or milk.
- Analgesic creams and non-drug measures such as joint protection, exercise, and heat/cold application also may be helpful.
- Use COX-2 inhibitor instead of the standard NSAID if patient can afford it:
 1. Celecoxib (Celebrex®)

Model Trial to Discontinue NSAID	
1.	Ask MD to reevaluate NSAID use, tapering or stopping this drug as ordered +
2.	Substitute routine acetaminophen, eg 325 mg 2 tablets 3 times/day and 2 tabs PRN at night, or 500mg q 8 hours routinely ++
3.	Begin non-drug pain control measures.*
4.	Re-evaluate pain regularly. If pain is controlled, continue non-drug measures and taper or change to PRN medication as tolerated.
5.	If pain is controlled, ensure an adequate trial of acetaminophen. If pain remains uncontrolled, add ibuprofen 200-400 mg q 4-6 hrs PRN. If pain continues uncontrolled, add ibuprofen \leq 1600 mg/day + PRN acetaminophen or return to previous regimen if patient prefers.

Notes from our Geriatric Advisory panel:

+ Recommend that patients stop NSAIDS a few days after routine acetaminophen is begun when drug level is established. I also allow patients to use it PRN for breakthrough pain.

++500mg q8h routinely might be adequate for reasonable pain control in patients, although in others a minimum of 3 gm/day routinely is needed to provide decent pain relief.

* This can be recommended as first step and continue to use it as maintenance. It includes capsaicin cream, heating pad, knee braces, low impact exercises, and balance training.

John Beilenson's Survey **Do NOT use both topical creams and hot packs at the same time...the use of these together can burn the skin (8).**

References:

1. Griffith MR, Brandt KD, Liang MH, et al. Practical Management of osteoarthritis: Intergration of pharmacologic and nonpharmacologic measures. *Arch Fam Med* 1995; **4**: 1049-1055
2. Hochberg MC, Altman RD, Brandt KD, et al. Guidelines for the medical management of osteoarthritis: Part I. Osteoarthritis of the hip. *Arthritis and Rheumatism* 1995; **38**: 1535-1540
3. Hochberg MC, Altman RD, Brandt KD, et al. Guidelines for the medical management of osteoarthritis: Part II. Osteoarthritis of the knee. *Arthritis and Rheumatism* 1995; **38**: 1541-1546.
4. Griffin MR, Piper JM, Daugherty JR et al. Nonsteroidal anti-inflammatory drug use and increased risk of peptic ulcer disease in elderly persons. *Annals of Internal Medicine* 1991; **114**: 257-263.
5. *Tarascon Pocket Pharmacopeia 2004 Deluxe Edition*. Tarascon Publishing 2004.
6. Meredith S, Feldman P, Frey D, et al. Improving Medication Use in Newly Admitted Home Healthcare Patients: A Randomized Controlled Trial. *Journal of the American Geriatrics Society*. 2002;50:1484-1491.
7. Ray WA, Stein CM, Byrd V, et al. *An educational program for physicians to reduce use of non-steriodal anti-inflammatory drugs among community-dwelling elderly persons: A randomized controlled trial*. *Med Care* 2001;39:425-435.
8. The Arthritis Foundation @ www.arthritis.org; "Arthritis Answers" section

Problem: NSAIDs

Solution Step 2 – Informing the Physician

Patients identified by the study screening procedures have a potential medication problem. However, we do not know everything about the patient and their medical history, and there may be good clinical reasons for the physician to have prescribed for the patient as s/he did. The physician may be aware of the potential problem, but have chosen that treatment as the best compromise for that particular patient. He/she may be alarmed that the patient has been identified as having a problem, feel defensive because his treatment is being called into question and be worried about patient complaints and litigation. Tact and diplomacy are therefore extremely important.

Before calling the physician, rehearse what you are going to say with the study pharmacist.

Suggested approach:

1. Introduce yourself, say you are from AGENCY NAME and tell the physician the name of the patient you are calling about.

2. Explain why you are calling.

I'm calling you about your patient X (patient's name). The AGENCY NAME is taking part in a study in which home-health patients are screened for problems that may be related to their medication. You may remember receiving a letter informing you that the study was going on.

X has been identified by the study screening procedure. This does not mean that X necessarily has a medication problem, but simply that it would be worth re-evaluating him/her. I'd like to discuss the case with you to see if it is worth pursuing further.

3. Describe the identified potential problem.

If on antiulcer drug/antacid – *The study screening showed that X is on (name of antiulcer drug), presumably because of gastric symptoms, as well as taking (name of NSAID), an NSAID. Because NSAIDs often cause ulcers, do you think we should consider reevaluating the NSAID use?*

If on NSAID & anticoagulant/oral steroid – *The study screening showed that X is on (name of NSAID), an NSAID, and (name of other drug) at the same time. Because both of these can cause bleeding ulcers, do you think we should consider reevaluating the NSAID use?*

If ≥ 80 years – *The screening showed that X is on (name of NSAID), an NSAID, which can cause ulcers. As X is over 80, and therefore is an age group at specially high risk of ulcer disease. Do you think we should consider reevaluating the NSAID use?*

4. Proceed with the remainder of the discussion according to the guideline and the category to which the patient belongs.

Suggested Non-Drug Pain Treatments for Osteoarthritis

1. Protecting and Unloading Joints

Hands

- For clothing, use Velcro instead of buttons or zipper. Add a ring or loop to pull zipper. Use a bottom hook.
- Instruct patient to lift objects with both hands.
- Add wedge tubing to pencils and pens. Use adapted eating utensils and plate.

Wrist

- Use a splint.
- Use a lap tray, chair with armrests or over-bed table to provide firm support for upper extremities.

Elbow, Shoulder

- Use pillow.
- Use a lap tray, chair with armrests or over-bed table to provide firm support for upper extremities.

Neck

- Use small pillow to keep head in neutral position.
- In recliner chair, move upper torso back at incline.

Back

- Use firm mattress with pillows between knees and ankles while patient is on side.
- Use lumbar support while patient is seated in chair.
- Instruct patient to use correct technique to rise and lower from chairs or bed.

Hip

- Evaluate patient for cane or walker.
- Use raised toilet seat.

Knee

- During wheelchair use, use leg rests with calf support
- Use knee brace if joints are unsteady to prevent knee from giving way. Use muscle or joint creams or balms. The creams or balms are good for all smaller joints, such as hand, wrist, foot, ankle, and elbow.

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Foot and Ankle

- Use shoes with wide toe space which are well cushioned and have low heels.
- During wheelchair use, use footrests at height that will keep knees slightly above hip level. If footrests are not used during wheelchair use, make sure seat height allows feet to rest firmly on floor.