Potentially Harmful Drug-Disease Interactions in the Elderly
Patients with Chronic Renal Failure and Receiving Nonaspirin NSAIDs or Cox-II Inhibitors

An estimated 3-5% of new chronic kidney failure cases each year are attributed to chronic overuse of over-the-counter analgesics.¹

67%-80% of the elderly (>65 years old) complain of pain²

One in five older Americans (18%) are taking pain medications several times a week or more and 63% of those had taken prescription pain medications for more than 6 months.³

Significant pain problems are noted in 25%-50% of the elderly residing in the community. Among nursing home residents, 45%-80% suffer from substantial pain.³

NSAIDS and COX-2 inhibitors inhibit renal prostaglandin production which can lead to acute and chronic nephrotoxic effects.⁴

The renal toxicities of NSAIDS include reversible renal insufficiency, sodium and water retention, hyperkalemia, hypertension, acute renal failure, worsening of chronic kidney disease and interstitial nephritis.²

High cumulative NSAID exposure has been associated with increased risk of rapid chronic kidney disease progression.⁵

Recommendations

Nonpharmacologic

In combination with pharmacologic treatments, has greater pain reduction and improves function more than drug treatment alone.³

Interventions²³

- Patient education
- Cause of pain, assessment methods, and management
- Cognitive/behavioral coping strategies
- Exercise programs

Pharmacologic

Avoid daily long-term use of high-dose nonselective NSAIDS³

Avoid NSAIDS in patients with abnormal renal function⁶

If prescribing NSAIDS in the elderly²:

- Consider measuring electrolytes and creatine levels prior to treatment
- Repeat these levels in 1-4 weeks
- Start with a low dose and titrate slowly

Stop NSAIDS if renal toxicity occurs²

Renal dysfunction is usually reversible if recognized early

- Acetaminophen is the drug of choice for mild to moderate musculoskeletal pain. For most patients, acetaminophen provides satisfactory pain relief without the adverse events associated with NSAIDS.³
- Corticosteroids may be an alternative to NSAIDS when treating rheumatoid arthritis and malignant bone pain in individuals with renal dysfunction.³⁷

However, the addition of a bisphosphonate should be considered if utilizing >5 mg per day of prednisone or an equivalent dose greater than three months to prevent osteoporosis.⁸

- Chronic opioid therapy or adjunctive therapy may have fewer life-threatening adverse events than long-term daily use of high-dose NSAIDS.³
GENERAL PAIN DRUG SELECTION IN CHRONIC RENAL FAILURE

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<tr>
<td>Pain</td>
<td>acetaminophen*</td>
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<td></td>
<td>salsalate, choline/magnesium salicylates</td>
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<td>topical lidocaine or capsaicin</td>
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<td>morphine, oxycodone</td>
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<td>Inflammatory conditions (RA)</td>
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<td>salsalate, choline/magnesium salicylates</td>
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<td>Gout</td>
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<td>Malignant bone pain in patients with renal dysfunction</td>
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*A maximum daily dose of 4000 mg should not be exceeded in patients with normal renal and hepatic functions. In patients with renal or hepatic dysfunction, reduce dose by 50%-75%.*

† A bisphosphonate should be considered if utilizing corticosteroids for daily long-term use.

This document serves as a guide and may not apply to all patients and clinical situations. Information presented is not intended to override clinicians’ judgement.

REFERENCES:

12. HEDIS® 2007