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NSAIDs in the Older Patient: Balancing Benefits and Harms

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Abstract

Objective. The older person is more likely to have pain since degenerative diseases and the effects of cancer are more common after 65 years of age. Nonsteroidal anti-inflammatory drugs (NSAIDs) are frequently used due to perceived safety, relatively low cost and over-the-counter availability. This brief review describes the necessity for, but risks of, NSAIDs in the older patient.

Design. A literature search was undertaken using PubMed and search terms including pain, aging, treatment, nonsteroidal anti-inflammatory drugs, arthritis, older patient, and guidelines.

Conclusions. Pain complaints are common in the older population. Low back pain and osteoarthritis affects over two thirds of this group. Patients and clinicians are increasingly wary about treatment since no medication appears to be safe. Older patients opting for no treatment may have worsening function including decreased sleep, mobility, socialization, and increased depression. Ninety percent of all prescription NSAIDs are taken by patients over 65. Guidelines for safe use are available but frequently not followed by the practitioner including the FDA recommended "lowest dose possible for your treatment . . . for the shortest time needed." NSAIDs can be an effective treatment option for many older persons but caution should be exercised in this often fragile population.

Key Words. NSAIDs; Aging

Pain is prevalent in older patients, and it is often treated with nonsteroidal anti-inflammatory drugs (NSAIDs) [1]. In fact, 90% of all NSAID prescriptions go to patients over the age of 65, 10–35% of patients over 65 take NSAIDs daily, and 70% of those over 65 use NSAIDs at least once a week in the United States [2,3]. Although over-the-counter dosing of NSAIDs has a relatively safe profile [4], elderly patients are at higher risk of NSAID-related adverse advents, especially potentially fatal gastrointestinal (GI), cardiovascular (CV) and cerebrovascular morbidities [5]. A recent evaluation of adverse events as a cause of hospitalization in patients 65 or older implicated NSAIDs in 23.5% of cases [6]. All NSAIDs (including celecoxib and topical NSAIDs) currently on the market in the United States have black box warnings outlining the risk of cardiovascular and gastrointestinal events.

NSAID-related gastrointestinal toxicity increases in severity and frequency with age [7]. Studies also suggest that GI toxicity from NSAIDs may be dose related and time dependent [8,9]. In patients with arthritis who are taking NSAIDs, there are over 100,000 hospitalizations per year for serious gastrointestinal complications and approximately 16,500 deaths in the United States [7]. As many as 25% of NSAID users will develop gastric ulcers, and 2–4% will develop a bleed or perforation [10]. Despite these clinically significant adverse event rates, clinicians continue to use NSAIDs due to their clinical efficacy and clinicians' concerns over of risks associated with other classes of drugs used to treat pain (e.g., tricyclic antidepressant anticholinergic effects, opioids-related adverse effects and abuse potential). As a result of these nationally documented statistics on gastrointestinal toxicity with NSAIDs, clinicians have become more knowledgeable on how to use gastroprotective therapies to reduce GI risk for NSAID patients. A full discussion on mitigating GI risk can be found in section 4 of this supplement.

In addition to considering GI risk factors in this population, clinicians also need to consider potential CV and renal side effects of NSAIDs. All NSAIDs (including topical formulations) carry a warning of potential serious CV events as noted in the "black box" warning of their package inserts. Use of NSAIDs is thought to increase the risk of serious cardiovascular thrombotic events, myocardial infarction, and stroke [11]. The risk of such events appears to be higher with longer term NSAID use and in patients with a previous history of cardiovascular disease; both conditions are more common in older persons. Long-term administration of NSAIDs has resulted in renal toxicity and renal papillary necrosis in some patients. Administration of NSAIDs may cause a dose-dependent reduction in prostaglandin formation and, secondarily, in renal blood flow, which may precipitate overt renal decompensation. Patients at greatest risk of this reaction are those with

impaired renal function, heart failure, liver dysfunction, and those taking diuretics and angiotensin-converting enzyme inhibitors. Once again, these clinical features are seen more often in an older population. If clinical signs (e.g., azotemia, hypertension, and/or proteinuria) and symptoms consistent with renal disease develop, NSAIDs should be discontinued. When discontinued, most patients recover to the pretreatment state [12].

A summary of the published literature suggests there is a low risk of developing acute renal failure (ARF) following NSAID administration [12]. When it does occur it can usually be reversed by fluid repletion and/or cessation of the NSAID [13]. A published review of four case-control studies indicates that the adjusted odds (or risk) ratios for ARF with NSAIDs vary from 1.6 to 4.1, depending on the population risk factors [12]. Though the risk of ARF has been reported to vary among NSAIDs when compared to no use, there does not appear to be significant differential risks among individual NSAIDs [12,13]. The number of patients needing to be exposed to NSAIDs to cause one ARF event has been estimated to be around 400 [12,13].

In conclusion, the aging U.S. population and a high prevalence of chronic painful inflammatory conditions in this population will continue to necessitate use of analgesics in older patients. Due to their clinical efficacy in managing pain and inflammation, and relatively low cost, NSAIDs will remain a common therapy in many of our patients. There is a paucity of literature describing prospective, longitudinal analgesic trials in older patients. Therefore,when considering NSAIDs in this population, clinicians should evaluate the potential benefit and risk for each individual patient with a focus on NSAID effects on renal, cardiovascular, and gastrointestinal systems. Predisposing factors for increased risk must be weighed against other pain-related quality of life factors, functional status, and potential benefits and harms of other types of analgesics. Clearly, this becomes a complex assessment for many older patients with one or more chronic conditions, debilitating pain, and multiple medication use. For those patients who are prescribed an NSAID, an appropriate GI protective therapy should be considered, taking into account the patient's level of GI risk, as well as polypharmacy and patient compliance history in order to prescribe the best therapy possible.

References

1 Ferrell B, Argoff C, Epplin J, et al. American Geriatrics Society Panel on the Pharmacological Management of Persistent Pain in Older Persons. Pharmacological management of persistent pain in older persons. J Am Geriatr Soc 2009;58:1331–46.

2 Lanas A, Ferrandez A. Inappropriate prevention of NSAID-induced gastrointestinal events among long-term users in the elderly. Drugs Aging 2007;24:121–31.

3 Arthritis Foundation Website. Disease Center, Osteoarthritis. Available at: http://www.arthritis.org/conditions-treatments/disease-center/osteoarthritis/ (accessed 28 September 2013).

4 Bansal V, Dex T, Proskin H, et al. A look at the safety profile of over-the-counter naproxen sodium: A meta-analysis. J Clin Pharmacol 2001;41:127–38.

5 Hochberg MC, Altman RD, Toupin K, et al. American College of Rheumatology Subcommittee on Osteoarthritis Guidelines. Arthritis Rheum 2000;43:1905–15.

6 Franceschi M, Scarcelli C, Niro V, et al. Prevalence, clinical features and avoidability of adverse drug reactions as cause of admission to a geriatric unit: A prospective study of 1756 patients. Drug Saf 2008;31: 545–56.

7 Singh G. Recent considerations in nonsteroidal anti-inflammatory drug gastropathy. Am J Med 1998; 105:31s–38s.

8 Ofman J, Maclean C, Straus W, et al. Meta-analysis of dyspepsia and nonsteroidal anti-inflammatory drugs. Arthritis Rheum 2003;49:508–18.

9 Richy F, Bruyere O, Ethgen O, et al. Time dependent risk of gastrointestinal complications induced by non-steroidal anti-inflammatory drug us: A consensus statement using a meta-analytic approach. Ann Rheum Dis 2004;63:759–66.

10 Lanza FL, Chan FK, Quigley EM; Practice Parameters Committee of the American College of Gastroenterology. Prevention of NSAID-related ulcer complications. Am J Gastroenterol 2009;104:728–38.

11 DUEXIS [package insert]. Hunt Valley, MD: Pharmaceutics International, Inc; 2011.

12 Lafrance J, Miller D. Selective and non-selective non-steroidal anti-inflammatory drugs and the risk of acute kidney injury. Pharmacoepdemiol Drug Saf 2009;18: 923–31.

13 Adam W. Non-steroidal anti-inflammatory drugs and the risks of acute renal failure: Number needed to harm. Nephrology 2011;16:154–5.