PALLIATIVE CARE NETWORK OF WISCONSIN

FAST FACTS AND CONCEPTS #356
PAIN MANAGEMENT CONSIDERATIONS IN OLDER ADULTS
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Background Pain is common among older adults (defined as ≥65 years of age) (1,2), whether from age-related arthritis or a serious illness. This *Fast Fact* addresses the physiological changes and other important considerations when treating pain in older patients. Specific considerations regarding the rational use of opioids in the older adult will be presented in a FF #357.

Physiological Changes with Aging

- Changes to Pain Perception and Response. Histopathological and biochemical studies suggest older adults may have an increased pain threshold, but a decreased pain tolerance compared to their younger counterparts (3). This means that older adults are less likely to label a sensation as 'painful' (possibly appearing more 'stoic'), but when painful sensations occur they can have more powerful negative effects such as depression, insomnia, agitation, or a change in mental status. Concurrent pain from multiple sites is common in older adults as they often have more comorbidities. Older adults also may compensate for pain in one joint by overusing a position or movement with another joint. Unrecognized cognitive impairment can interfere with pain assessment (history taking). Clinicians, therefore, should utilize a broader differential in older adults presenting with pain.
- Pharmacokinetic Changes. With aging, there is decline in hepatic blood flow, GI motility, lean body mass, hepatic enzyme activity (e.g. CYP P450 system, especially 3A4 and 2D6), and renal function (4,5). These changes lead to many medications having longer effects at lower doses. This places the older adult at a significantly higher risk for adverse effects.

Non-Pharmacological Interventions All older adults should be considered for non-pharmacological interventions. These include cognitive-behavioral therapy, weight loss, exercise, occupational and physical therapy, and the use of assistive devices. These interventions may be directed more toward improving function, independent of analgesia. For example, neoprene knee sleeves may decrease pain and perhaps improve function in patient with osteoarthritis (6).

Topical and Local Agents Topical agents can be used for localized pain complaints, such as muscle or joint pain from injuries or arthritis. These include analgesic balms, lidocaine cream, capsaicin cream (see *Fast Fact #255*), and topical non-steroidal anti-inflammatory drugs (NSAIDs). Many older patients have contraindications to systemic NSAIDs, whereas topical NSAIDs can be prescribed to patients with renal dysfunction or those at risk of other NSAID-induced adverse effects. When applied topically, diclofenac serum concentrations are 158 times less than with oral administration (8). A 2009 randomized controlled trial, which compared topical or oral diclofenac to each other & matching placebos (for knee osteoarthritis) found topical and oral diclofenac similarly effective (7).

Oral Non-Opioid Analgesics For older adults, acetaminophen (APAP) and oral NSAIDs can be used for nociceptive pain. Although there is mixed evidence for the use of APAP in the management of chronic low back pain and osteoarthritis (10), it is often used as first-line therapy due to its safety profile for older adults. While empiric, scheduling APAP can improve adherence and analgesia, as opposed to instructing the patient to take it as needed. When APAP does not provide adequate analgesia, oral NSAIDs can be added but are limited by contraindications common in many older patients (chronic kidney disease, history of GI bleeding, concurrent use of systemic-anticoagulation). Non-acetylated salicylates are preferred (such as salsalate) as they have a superior safety profile, specifically for major gastrointestinal bleeding, when compared to other NSAIDs (11). This can be appealing for older adults as they have a higher 3-4% risk of bleeding caused by traditional NSAIDs, compared to 1% of the general population (12). If non-acetylated salicylates fail, traditional NSAIDs can be considered for brief periods of time (<7 days), as often the risks associated with longer duration of use outweigh benefits.

Adjuvant Analgesics Older adults also frequently suffer from neuropathic pain in the setting of post-herpetic neuralgia, post-stroke pain, or peripheral neuropathy. If a topical agent such as lidocaine is not found to be effective, gabapentin, pregabalin and antidepressants should be considered. Tricylic antidepressants (TCAs) are considered some of the most effective adjuvant analgesics for neuropathic pain (13), however they are often intolerable to the older adult due to anticholinergic side effects (including delirium and falls). Nortriptyline or desipramine, secondary amines, may be more tolerable

than amitriptyline, but are not free of these side effects. Therefore, selective norepinephrine and serotonin reuptake inhibitors (SNRIs) such as venlafaxine or duloxetine are thought to be more appealing options in the older adult. Renal dosing should be considered for patients with renal dysfunction receiving venlafaxine, duloxetine, gabapentin (see *Fast Fact #49*) and pregabalin (see *Fast Fact #288*); doses of duloxetine should also be decreased in liver dysfunction.

A Rational Approach While empiric, we think a rational approach to prescribing for older patients is warranted. This includes considering non-drug and topical agents for nearly every patient due to their excellent safety profile. Non-opioid analgesics should be considered for all patients with pain that limits function (mobility, sleep, etc.), and adjuvant analgesics for patients with neuropathic pain syndromes. *Fast Fact* #356 addresses opioids in this population.

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