

Anesthesia and Pain Management in Older Adults

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Abstract

Pain is a prevalent and frequently undertreated malady in older adults. This population presents many unique challenges to the field of Anesthesia, for treatment, including declining physical function, comorbid medical conditions, psychological impairments, and an increased consumption of medication. As such, it is imperative that practitioners have a complete and accurate medical history and consider interdisciplinary strategies to design a customized treatment plan. Given the obstacles typically present in managing pain in older adults, pharmacological intervention remains at the core of many treatment regimens. Medication management can encompass a wide variety of options, including opioids, anti-inflammatory compounds, topical anesthetics, and adjuvant analgesics. This article will review some of the more prevalent pharmacological methods used for pain management, focusing on concerns specifically for older adults.

Keywords: Anesthesia; Pain; Older Adults; Medication; Pharmacology; Pain Management

Pain is a prevalent concern among older adults in America [1,2]. The National Institutes of Health (NIH) estimate that more than one-half of older adults surveyed report bothersome pain in multiple areas in the past month [1]. The NIH has also reported that low back pain is the most prevalent, exceeding headaches/migraines, neck, joint, or jaw pain [2]. With an aging population, expected to comprise of 20% of Americans by 2030, concerns of effective pain management strategies are a necessity, particularly those that require pharmacological intervention [3]. Older adults face a variety of unique challenges when tailoring a treatment regimen including that, on average, this group consumes five or more medications daily [3,4]. Concerns are further complicated by the increased risk for adverse drug reactions (ADRs) for the older adult demographic [5-7]. This review aims to examine commonly used pharmacologic interventions for pain management, and their corresponding challenges in treating the senior population.

Opioids

Opioids are commonly used for pain relief due to their efficacy and availability. However, they present unique concerns, such as their high abuse and dependency potential, sedative effects, and risk of drug interactions [8-11]. Opioids are included in the most abused drugs in America [8]. Their sedative effects often result in euphoric states for some, encouraging continued use. However, they can also lead to constipation, gastrointestinal upset, nausea, dizziness, sleep disturbances, respiratory complications, and overdose [9]. These side effects can lead to increased risk and rate of falls and subsequent injury, particularly in the older adult population [9,12]. Older adults are also more prone to physical side effects, such as liver and kidney problems, weight loss, and slower metabolizing of drugs

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[3,9]. All of these risk factors are concerning and must be carefully evaluated prior to beginning a medication regimen. Routine testing of organ function and weight-monitoring should be included for all follow-up care.

Antidepressants

Several anti-depressant medications have shown effective for pain relief. A number of important concerns, though, must be considered before these medications are used in older adults, such as the presence of dementia, movement disorders, depression, hormonal imbalances, and other medications being taken [3,9-11,13]. Issues of cognitive impairment, such as dementia, Alzheimer's disease, decreased capacity, and memory, can all affect adherence and consistency of consuming medications. This can be particularly troublesome when on a regimen with antidepressants, because a sudden cessation can lead to complications such as suicidal thoughts or behaviors, depression, or mood imbalances [14]. It must also be noted that certain medications, such as steroids, hormonal supplements, and anti-convulsants, can exacerbate or worsen depressive symptoms. Thus, a thorough medical history should be consulted prior to beginning new medications, especially antidepressants [15]. A recent review by Polatin and colleagues (2017) discusses the use of antidepressants in older adult pain patients, including side effects, dosages, and the unique concerns in this population [16].

Anti-inflammatory Drugs

Another widely used medication group are the non-steroidal anti-inflammatories (NSAIDs) compounds. While effective for treating musculoskeletal pain, NSAIDs pose several challenges for use in older adults, including drug interactions with certain medications, such as aspirin and selective serotonin reuptake inhibitors (SSRIs) [17-19]. Furthermore, peptic ulcers, compromised organ function, and gastrointestinal toxicity are concerns when taking NSAIDs long-term, and drugs to treat these conditions may also interact negatively with the anti-inflammatory medication(s) [19-22]. Gastro-protective drugs prescribed in conjunction with NSAIDs may reduce the risk of ulcers and toxicity, although only about 40% of patients taking NSAIDs are also prescribed gastro-protective drugs [22].

Topical and Injectable Agents

Other pain-relief products, such as topical creams, transdermal patches, or injectable medications, are also available. For some, taking medication in pill-form may not be a feasible option, or they may be experiencing an acute, localized pain where another route may be most appropriate. Topical creams and patches can be effective for localized pain presenting in areas near the body surface (such as superficial muscular pain), but may not be powerful enough to penetrate the body to treat certain pain conditions. Topical agents also require reapplication and may wear-off or cause irritation [23]. There are varieties of topical agents available from over-the-counter (OTC) superficial compounds, to prescription strength substances obtained through prescription.

Transdermal patches are an alternative that address some of the concerns with using topical creams, as they can alleviate annoyances of reapplication and mess, but still may not be powerful enough to penetrate the body to the pain source [23]. However, stronger medications like morphine can be administered in patch-form, allowing for a steady release and absorption of the medication without the need for an intravenous setup or oral medications [24]. Several medications are also available in injectable form, for use mostly in emergency situations or when the patient may be severely incapacitated or unconscious [18].

Summary

In the field of Anesthesia, pharmacological pain management in older adults is a complex and multi-faceted issue. Many considerations must be taken into account prior to starting a medication regimen, and older adults face unique challenges that can further complicate general concerns. A complete medical history including current medications, is vital to effective and safe pharmacotherapy. Each major medication group, such as opioids, NSAIDs, and antidepressants, present advantages and complications to pain management, and must complement comorbidities and other medicinal needs. Older adults must also undergo thorough screening in order to assess organ function and weight changes.

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