

Interventional Techniques for Management of Pain in Older Adults

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KEYWORDS

- Interventional pain management • Chronic pain • Osteoarthritis • Steroid injection
- Osteoporosis • Vertebral compression fracture

KEY POINTS

- Physiologic changes in older adults make them more susceptible to the potential side effects and toxicities of oral pain medications.
- Interventional pain management techniques that target specific nociceptive transmission sites can reduce pain without the end-organ systemic effects associated with oral pain medications.
- Numerous interventional pain management techniques offer older patients an alternative treatment plan if conservative management is ineffective or contraindicated.

INTRODUCTION

Chronic pain in older patients is often treated with a combination of pharmacotherapy, physical rehabilitation, interventional pain management, and/or psychological interventions. Pharmacotherapy, or the systemic administration of analgesic medications, is by far the most common treatment. Pain medications are designed to target specific receptors throughout the peripheral and central nervous systems. However, physiologic changes in older adults make them more susceptible to the potential side effects and toxicities of systemically administered pain medications, especially opioids. Interventional pain management is defined as the discipline of medicine devoted to the diagnosis and treatment of pain-related disorders, principally with the application of interventional techniques, independently or in conjunction with other treatment modalities.^{1,2} Interventional pain management is a rapidly growing

Disclosure: The authors have nothing to disclose.

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Clin Geriatr Med ■ (2016) ■-■

<http://dx.doi.org/10.1016/j.cger.2016.06.003>

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subspecialty. Interventional pain procedures are performed by a myriad of providers, including, but not limited to, anesthesiologists, physiatrists, neurologists, neurosurgeons, orthopedic surgeons, rheumatologists, and radiologists, all with varying degrees of training. Interventional pain management techniques are designed to target specific nociceptive transmission sites, with the goal of minimizing the intake of oral medications and their end-organ effects. Thus, interventional pain management techniques offer older patients an alternative treatment path with potentially fewer side effects.

This article describes several interventional techniques used to treat the most common sites of pain in older adults: back, knee, and hip.¹ It also reviews data regarding the efficacy and safety of these therapies.

LUMBAR EPIDURAL INJECTIONS

Lumbar epidural steroid injections (ESIs) are a commonly used procedure for treating a variety of conditions, including lumbar spinal stenosis, lumbar disc herniation, lumbar degenerative disc disease, and lumbosacral radicular pain.³ An analysis of Medicare use data from 2000 to 2011, showed an increase in epidural and adhesiolysis procedures from a rate of 2172 per 100,000 beneficiaries to 4923 per 100,000 beneficiaries, which represents an increase of 127%.⁴ Lumbar spinal stenosis, a common cause of spine-related disability among older adults, is the leading reason for spinal surgery in older adults. Patients with lumbar spinal stenosis report leg pain, lower extremity paresthesia, and/or weakness. Pertinent imaging, including plain films, MRI, and/or computed tomography (CT) scans, should be reviewed before performing an ESI, although there may not be a direct correlation between a patient's symptoms and imaging results. Contraindications to an ESI are listed in [Box 1](#).

The lumbar epidural space can be accessed using an interlaminar (midline or paramedian) or transforaminal approach. The transforaminal approach (placement of a needle within the neuroforamen), is used to treat patients with lumbar radicular symptoms who may also have low back pain. Complications of ESIs are described in [Box 2](#).⁵

The interlaminar lumbar ESI is performed using fluoroscopic guidance for increased accuracy, as shown in [Fig. 1](#). Steroid and/or local anesthetic is injected into the epidural space. There are no clinical trials that examine the ideal number of ESIs. Thus, the number of ESIs should be patient focused and tailored to clinical response.

Box 1

Contradictions to epidural steroid injections

Absolute contraindications

- Coagulopathy
- Current anticoagulation use
- Infection: localized near injection site or systemic
- Uncontrolled diabetes mellitus

Relative contraindications

- Allergy to medication that will be injected (contrast, local anesthetic, steroid)
- Anatomic changes that would prevent safe procedure (congenital or surgical)
- Immunosuppression

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