THE TREATMENT OF SYMPTOMATIC OSTEOPOROTIC SPINAL COMPRESSION FRACTURES

GUIDELINE AND EVIDENCE REPORT

Adopted by the American Academy of Orthopaedic Surgeons
Board of Directors
September 24, 2010

Disclaimer
This Clinical Practice Guideline was developed by an AAOS physician volunteer Work Group based on a systematic review of the current scientific and clinical information and accepted approaches to treatment and/or diagnosis. This Clinical Practice Guideline is not intended to be a fixed protocol, as some patients may require more or less treatment or different means of diagnosis. Clinical patients may not necessarily be the same as those found in a clinical trial. Patient care and treatment should always be based on a clinician's independent medical judgment, given the individual patient's clinical circumstances.

Disclosure Requirement
In accordance with AAOS policy, all individuals whose names appear as authors or contributors to Clinical Practice Guideline filed a disclosure statement as part of the submission process. All panel members provided full disclosure of potential conflicts of interest prior to voting on the recommendations contained within this Clinical Practice Guidelines.

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FDA Clearance
Some drugs or medical devices referenced or described in this Clinical Practice Guideline may not have been cleared by the Food and Drug Administration (FDA) or may have been cleared for a specific use only. The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or device he or she wishes to use in clinical practice.

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Summary of Recommendations

The following is a summary of the recommendations in the AAOS' clinical practice guideline, The Treatment of Symptomatic Osteoporotic Spinal Compression fractures. This summary does not contain rationales that explain how and why these recommendations were developed nor does it contain the evidence supporting these recommendations. All readers of this summary are strongly urged to consult the full guideline and evidence report for this information. We are confident that those who read the full guideline and evidence report will see that the recommendations were developed using systematic evidence-based processes designed to combat bias, enhance transparency, and promote reproducibility.

This summary of recommendations is not intended to stand alone. Treatment decisions should be made in light of all circumstances presented by the patient. Treatments and procedures applicable to the individual patient rely on mutual communication between patient, physician, and other healthcare practitioners.

1. We suggest patients who present with an osteoporotic spinal compression fracture on imaging with correlating clinical signs and symptoms suggesting an acute injury (0-5 days after identifiable event or onset of symptoms) and who are neurologically intact be treated with calcitonin for 4 weeks.

   Strength of Recommendation: Moderate

2. Ibandronate and strontium ranelate are options to prevent additional symptomatic fractures in patients who present with an osteoporotic spinal compression fracture on imaging with correlating clinical signs and symptoms.

   Strength of Recommendation: Weak

3. We are unable to recommend for or against bed rest, complementary and alternative medicine, or opioids/analgesics for patients who present with an osteoporotic spinal compression fracture on imaging with correlating clinical signs and symptoms and who are neurologically intact.

   Strength of Recommendation: Inconclusive

4. It is an option to treat patients who present with an osteoporotic spinal compression fracture at L3 or L4 on imaging with correlating clinical signs and symptoms suggesting an acute injury and who are neurologically intact with an L2 nerve root block.

   Strength of Recommendation: Weak

5. We are unable to recommend for or against treatment with a brace for patients who present with an osteoporotic spinal compression fracture on imaging with correlating clinical signs and symptoms and who are neurologically intact.

   Strength of Recommendation: Inconclusive

6. We are unable to recommend for or against a supervised or unsupervised exercise program for patients who present with an osteoporotic spinal compression fracture on imaging with correlating clinical signs and symptoms and who are neurologically intact.

   Strength of Recommendation: Inconclusive

7. We are unable to recommend for or against electrical stimulation for patients who present with an osteoporotic spinal compression fracture on imaging with correlating clinical signs and symptoms and who are neurologically intact.

   Strength of Recommendation: Inconclusive

8. We recommend against vertebroplasty for patients who present with an osteoporotic spinal compression fracture on imaging with correlating clinical signs and symptoms and who are neurologically intact.

   Strength of Recommendation: Strong

9. Kyphoplasty is an option for patients who present with an osteoporotic spinal compression fracture on imaging with correlating clinical signs and symptoms and who are neurologically intact.

   Strength of Recommendation: Weak

10. We are unable to recommend for or against improvement of kyphosis angle in the treatment of patients who present with an osteoporotic spinal compression fracture on imaging with correlating clinical signs and symptoms.

    Strength of Recommendation: Inconclusive

11. We are unable to recommend for or against any specific treatment for patients who present with an osteoporotic spinal compression fracture on imaging with correlating clinical signs and symptoms and who are not neurologically intact.

    Strength of Recommendation: Inconclusive

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Peer Review

Participation in the AAOS peer review process does not constitute an endorsement of this guideline by the participating organization.

The following seven organizations participated in peer review of this clinical practice guideline and gave their explicit consent to have their names listed in this document:

American Academy of Physical Medicine and Rehabilitation (AAPMR)

American Association of Neurological Surgeons/Congress of Neurological Surgeons (AANS/CNS Joint Section)

American College of Radiology (ACR)

AO Spine International

International Spine Intervention Society (ISIS)

National Osteoporosis Foundation (NOF)

North American Spine Association (NASS)

Participation in the AAOS peer review process does not constitute an endorsement of this guideline by the participating organization.

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I. INTRODUCTION

OVERVIEW

This clinical practice guideline is based on a systematic review of published studies on the treatment of symptomatic osteoporotic spinal compression fractures in adults. In addition to providing practice recommendations, this guideline also highlights gaps in the literature and areas that require future research.

This guideline is intended to be used by all appropriately trained surgeons and all qualified physicians managing the treatment of symptomatic osteoporotic spinal compression fractures. It is also intended to serve as an information resource for decision makers and developers of practice guidelines and recommendations.

GOALS AND RATIONALE

The purpose of this clinical practice guideline is to help improve treatment based on the current best evidence. Current evidence-based medicine (EBM) standards demand that physicians use the best available evidence in their clinical decision making. To assist in this, this clinical practice guideline consists of a systematic review of the available literature regarding the treatment of symptomatic osteoporotic spinal compression fractures. The systematic review detailed herein was conducted between March 2009 and February 2010 and demonstrates where there is good evidence, where evidence is lacking, and what topics future research must target in order to improve the treatment of patients with symptomatic osteoporotic spinal compression fractures. AAOS staff and the physician work group systematically reviewed the available literature and subsequently wrote the following recommendations based on a rigorous, standardized process.

Musculoskeletal care is provided in many different settings by many different providers. We created this guideline as an educational tool to guide qualified physicians through a series of treatment decisions in an effort to improve the quality and efficiency of care. This guideline should not be construed as including all proper methods of care or excluding methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding any specific procedure or treatment must be made in light of all circumstances presented by the patient and the needs and resources particular to the locality or institution.

INTENDED USERS

This guideline is intended to be used by orthopaedic surgeons and all qualified physicians managing patients with symptomatic osteoporotic spinal compression fractures. Typically, orthopaedic surgeons will have completed medical training, a qualified residency in orthopaedic surgery, and some may have completed additional sub-specialty training. Insurance payers, governmental bodies, and health-policy decision-makers may also find this guideline useful as an evolving standard of evidence regarding treatment of symptomatic osteoporotic spinal compression fractures.

Treatment for symptomatic osteoporotic spinal compression fractures is based on the assumption that decisions are predicated on patient and physician mutual communication with discussion of available treatments and procedures applicable to the individual

patient. Once the patient has been informed of available therapies and has discussed these options with his/her physician, an informed decision can be made. Clinician input based on experience with conservative management and the clinician's surgical experience and skills increases the probability of identifying patients who will benefit from specific treatment options.

PATIENT POPULATION

This document addresses the treatment of symptomatic osteoporotic spinal compression fractures in adults (defined as patients 18 years of age and older).

ETIOLOGY

Symptomatic osteoporotic spinal compression fractures are a result of osteoporosis.

INCIDENCE

Symptomatic osteoporotic spinal compression fractures are a common occurrence. About 750,000 new vertebral fractures occur each year in the United States.[1]

BURDEN OF DISEASE

The economic burden of treating incident osteoporotic fractures was estimated at $17 billion in 2005.[2]

EMOTIONAL AND PHYSICAL IMPACT

Symptomatic osteoporotic spinal compression fractures cause pain, loss of physical function, and are associated with increased mortality.

POTENTIAL BENEFITS, HARMS, AND CONTRAINDICATIONS

The aim of treatment is pain relief and recovery of mobility. Most treatments are associated with some known risks, especially invasive and operative treatments. In addition, contraindications vary widely based on the treatment administered. Therefore, discussion of available treatments and procedures applicable to the individual patient rely on mutual communication between the patient and physician, weighing the potential risks and benefits for that patient.