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ABSTRACT

Title: Efficacy of Percutaneous Vertebral Augmentation and Use of Physical Therapy Intervention following Vertebral Compression Fractures in Older Adults: A Systematic Review

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Purpose: The purpose of this systematic literature review was to summarize information on the efficacy of percutaneous vertebral augmentation (PVA) and the incorporation of physical therapy intervention following PVA for vertebral compression fractures (VCF). When conservative intervention does not provide desired results within a few weeks or months, VCF can be treated surgically with vertebroplasty or kyphoplasty. This information may heighten awareness of the increasing use of surgical intervention and encourage physical therapists to identify the most appropriate interventions for rehabilitation of individuals after PVA.

Methods: Literature searches were completed using the Cochrane Library: Cochrane Database of Systematic Reviews (Cochrane Reviews), Agency for Healthcare Research and Quality (AHRQ): National Guideline Clearinghouse, Physiotherapy Evidence Database (PEDro), Medline, and Cumulative Index of Nursing and Allied Health Literature (CINAHL) through August 2005. Studies were initially reviewed by title and abstract. Inclusion criteria included whether the study was quantitative, available in English, and included physical therapy, rehabilitation, or functional outcomes compared over time following PVA secondary to osteoporotic VCF of the lumbar or thoracic spine in older adults.

Results: No studies were found with searches on PEDro, Cochrane Reviews, or the AHRQ: National Guideline Clearinghouse. Searches in CINAHL and Medline resulted in 67 articles examining outcomes, rehabilitation, or physical therapy following PVA. Fifty-four were excluded because they were not research studies or lacked functional outcome measures, focused on conditions other than VCF or specific surgical procedures, or were case studies or literature reviews. Four additional articles, located through reference review, met the inclusion criteria and were used. Seventeen relevant studies were identified; 10 prospective nonrandomized studies without a control group, 5 retrospective studies, and 2 prospective nonrandomized controlled trials. Favorable outcomes (e.g., earlier mobility, decreased pain, and improved spinal posture) were reported after PVA. None of the 17 studies mentioned physical therapy intervention following PVA.

Conclusion: Although PVA appears to be an effective treatment option for individuals with VCF, further research regarding the use and long term outcomes of PVA would be beneficial. Presently physical therapy is not a standard treatment intervention following PVA; however, outcomes following PVA could be enhanced with the provision of physical therapy intervention to address physical impairments and functional limitations, improve posture and respiratory status, and educate patients to prevent future VCF. Even though there is obvious improvement following PVA, it would be helpful to compare outcomes between those individuals who receive physical therapy intervention and those who do not.