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Maryann Verrillo, (703) 460-5572 Diane Shnitzler, (703) 460-5582 March 11–12, Lisa Tadje, (212) 453-2137 March 11–12, Don Murphy, (212) 453-2462 March 11–12, Neil Hochman, (212) 453-2067 March 13–18, Tampa Press Room, (813) 276-6905, (813) 276-6906 or (813) 276-6912 comm@SIRweb.org

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## Vertebroplasty for Patients With Osteoporosis Provides Effective Pain Relief

## For Best Results, Patient Selection, Correct Indications, Optimal Medical Treatment Needed, According to a Study of Nearly 1,500 Patients Over Seven Years

TAMPA, Fla. (March 15, 2010)—Patient selection is key for vertebroplasty—a minimally invasive treatment performed by interventional radiologists in individuals with painful osteoporotic vertebral compression fractures that fail to respond to conventional medical therapy—to be effective and successful, according to a study of more than 1,500 persons who were followed over seven years. Additionally, collaboration between an interventional radiologist and other medical experts in treating a patient is imperative, say researchers at the Society of Interventional Radiology's 35th Annual Scientific Meeting in Tampa, Fla.

"Vertebroplasty puts lives and vertebrae back together," said Giovanni C. Anselmetti, M.D., interventional radiologist at the Institute for Cancer Research and Treatment in Turin, Italy. Before treatment, many osteoporotic patients are in constant pain and cannot manage everyday activities. Vertebroplasty, a minimally invasive treatment performed by interventional radiologists under imaging guidance, stabilizes collapsed vertebrae with the injection of medical-grade bone cement into the spine. The treatment provides pain relief and improves one's quality of life—if given to appropriately selected candidates in whom conventional medical treatment has failed (such as analgesics or narcotic drugs that provide minimal or no pain release or doses that are intolerable), he further explained. "Our long-term follow-up confirmed this: pain relief and quality of life significantly improved with vertebroplasty," said Anselmetti.

Osteoporosis, the most common type of bone disease, is characterized by low bone mass and structural deterioration of the bone, resulting in an increased susceptibility to fractures. Osteoporosis affects 10 million Americans and is responsible for 700,000 vertebral fractures each year. Multiple vertebral fractures can result in chronic pain and disability, loss of independence, stooped posture and compression of the lungs and stomach.

"Vertebroplasty dramatically improves back pain within hours of the procedure, provides long-term pain relief and has a low complication rate, as demonstrated in multiple studies," said Anselmetti. Vertebroplasty provides pain relief from the complications of osteoporosis (vertebral fractures) but not the disease that caused it (osteoporosis), said Anselmetti. "For the best results, collaboration between physicians is mandatory. All osteoporotic patients need to be followed by an interventional radiologist, who determines which patients are appropriate candidates to receive vertebroplasty treatment, and an experienced medical expert (in this study, a rheumatologist) to ensure continued treatment for osteoporosis," he said.

Anselmetti illustrated a typical case: an 80-year-old Italian woman, who was diagnosed last year with two painful osteoporotic vertebral collapses, underwent medical treatment for osteoporosis (with the drug teriparatide) and was still in pain when she was prescribed an external brace. After there was evidence of two new fractures (verified by MR imaging), she received vertebroplasty, experiencing "complete pain regression, no need for the brace and a dramatic Lazarus-like ability to perform daily activities," he noted.

Researchers studied 2,251 osteoporotic patients (1,811 women; average age, 65) suffering from backpain for vertebral collapses (MRI confirmed) who underwent a clinical interview; their medical treatment, pain grade, quality of life and extent of vertebral fracture were reviewed. Vertebroplasty was performed in 1,542 patients (1,302 women; average age, 73) when optimal medical treatment (such as biphosphonates, teriparatide, analgesics and back brace) did not help relieve pain or improve quality of life for patients over a three-month period. After vertebroplasty, patients continued to receive medical treatment with a rheumatologist. Because interventional radiologists use high-quality, image-guiding systems (such as

3975 Fair Ridge Drive Suite 400 North Fairfax, Virginia 22033 703.691.1805 703.691.1855 fax www.SIRweb.org

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digital flat-panel fluoroscopy with built-in rotational image acquisition), treatment time is decreased, making for a safer procedure, added Anselmetti.

In 1,494 patients (96.9 percent), the average pretreatment pain score on the 11-point visual analog scale was  $8.2\pm1.8$ , and it dropped "significantly" to an average of  $1.1\pm1.6$  after vertebroplasty treatment, said Anselmetti. A patient's ability to manage everyday life—such as washing, dressing or standing—was measured by the commonly used Oswestry Disability Questionnaire, which was completed by patients before and after vertebroplasty. The ODQ scores changed from an average of  $68.7\pm7.6$  percent to  $18.5\pm8.2$  percent. Long-term follow-up (average, 31.2 months) in 1,017 patients (857 women; average age, 72) showed the VAS significantly dropping from  $7.9\pm1.5$  to  $1.3\pm1.7$ . Of the 757 patients wearing a back brace before vertebroplasty, 683 could stop wearing one after treatment.

Anselmetti said that additional studies need to be performed, such as a large randomized trial comparing conventional medical treatment to medical treatment plus vertebroplasty. In Europe, this is difficult, as patients with chronic back pain for vertebral osteoporotic fractures prefer to be treated by vertebroplasty—and not randomized into a medical treatment-only group. "Patients who are in so much pain ask if they can be considered for vertebroplasty treatment," said the co-author of "Percutaneous Vertebroplasty (PV) in the Osteoporotic Patients: Optimal Indications and Patient Selection to Improve Clinical Outcome: Personal Experience in 1,542 Patients Over Seven Years' Experience."

More information about the Society of Interventional Radiology, interventional radiologists and vertebroplasty can be found online at www.SIRweb.org.

Abstract 16: "Percutaneous Vertebroplasty (PV) in the Osteoporotic Patients: Optimal Indications and Patient Selection to Improve Clinical Outcome: Personal Experience in 1,542 Patients Over Seven Years' Experience," G.C. Anselmetti, A. Manca, G. Chiara, G. Iussich and D. Regge, all at the Institute for Cancer Research and Treatment, Candiolo, Italy; and G. Isaia, University of Turin, Turin, Italy, SIR 35th Annual Scientific Meeting March 13–18, 2010, Tampa, Fla. This abstract can be found at www.SIRmeeting.org.

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## About the Society of Interventional Radiology

Interventional radiologists are physicians who specialize in minimally invasive, targeted treatments. They offer the most in-depth knowledge of the least invasive treatments available coupled with diagnostic and clinical experience across all specialties. They use X-ray, MRI and other imaging to advance a catheter in the body, such as in an artery, to treat at the source of the disease internally. As the inventors of angioplasty and the catheter-delivered stent, which were first used in the legs to treat peripheral arterial disease, interventional radiologists pioneered minimally invasive modern medicine. Today, interventional oncology is a growing specialty area of interventional radiology. Interventional radiologists can deliver treatments for cancer directly to the tumor without significant side effects or damage to nearby normal tissue.

Many conditions that once required surgery can be treated less invasively by interventional radiologists. Interventional radiology treatments offer less risk, less pain and less recovery time compared to open surgery. Visit <u>www.SIRweb.org</u>.

The Society of Interventional Radiology's 35th Annual Scientific Meeting is being held March 13–18 in Tampa, Fla. The theme of the meeting is "IR Innovation," celebrating the remarkable inventiveness of SIR members and highlighting the contributions made to both creating the field of interventional radiology and to improving patient care.

Local interviews and medical illustrations are available by contacting SIR's communications department via e-mail at <u>mverrillo@SIRweb.org</u> or by phone at (703) 460-5572. A vertebroplasty fact sheet can be found in the Media section at SIRweb.org.