Is surgery a viable treatment option for patients age 80-plus with acute spinal conditions?

4 February 2015

As the number of Americans age 80 and older continues to rise, so does the percentage of patients with acute spinal conditions. A new study appearing in the February 4th issue of the *Journal of Bone & Joint Surgery* (*JBJS*) found significant benefit from surgical treatment for lumbar spinal stenosis with and without degenerative spondylolisthesis—debilitating spinal conditions causing leg and back pain, numbness and weakness—and no higher overall complication rate and no higher mortality for patients age 80 and older when compared to patients younger than age 80.

Between 2000 and 2010 the U.S. population age 80 and older increased 22 percent to 11.2 million, and approximately 47 percent of Americans age 60 and older have spinal stenosis, a narrowing of the spinal canal due to the wear and tear associated with aging.

In this study, researchers reviewed Spine Patient Outcomes Research Trial (SPORT) data for 105 patients, age 80 and older, and 1,130 patients younger than age 80 with lumbar stenosis alone or combined with degenerative spondylolisthesis. Patient clinical characteristics, including age, sex, ethnicity, college and work status, body mass index (BMI), smoking, comorbidities, level of back and leg pain, self-assessment of general health and treatment preference, were reviewed at baseline. Levels of pain, assessment of general health, complications, the need for revision surgery, and mortality were measured postoperatively for up to four years.

Fifty-eight (55.2 percent) of the patients who were at least 80 years old underwent surgery - either a spinal fusion (arthrodesis) or a laminectomy, which is the removal of bone spurs, bone and ligaments that may be pressing on the spinal nerves— as did 749 (66.3 percent) of the patients under age 80. At baseline, patients age 80 and older had a higher prevalence of hypertension, heart disease, osteoporosis and joint problems, but a lower BMI, and a lower prevalence of depression and smoking. Among the other findings:

- Averaged over a four-year follow-up period, operatively treated patients at least 80 years of age, had significantly greater improvement in all primary and secondary outcome measures compared with patients at least 80 years of age who received nonsurgical treatment.
- Both groups—under and over age 80—had comparable rates of complications during and after surgery, reoperations and postoperative mortality.
- Patients age 80 and older had a significantly greater proportion of multi-level lumbar laminectomies (those involving three or more levels of the spine) compared with younger patients (60 percent versus 32 percent).
- The benefits of surgery in patients at least 80 years of age were similar to those in younger patients, except for the outcome measures of pain and physical function, which were higher in the under age 80 group.

"This study demonstrates that surgery for the treatment of lumbar stenosis and degenerative spondylolisthesis provides significant benefit compared to nonoperative treatment in those patients over the age of 80," said lead study author Jeffrey A. Rihn, MD, an orthopaedic surgeon at the Rothman Institute and associate professor at Thomas Jefferson University Hospital in Philadelphia, Pa. "Patients in this age group had significant improvement in their function after

surgery and complication rates comparable to the younger demographic. Based on the results of this study, surgery should be considered a viable treatment option for these lumbar conditions in patients older than age 80. Future studies are needed to better assess the cost-effectiveness of surgery in this patient population."

Study Details

An analysis of patients treated for lumbar stenosis and degenerative spondylolisthesis, who were enrolled in the Spine Patient Outcomes Research Trial (SPORT), was performed. Patients who were at least 80 years of age were compared with those younger than 80. Baseline patient and clinical characteristics were noted, and the difference in improvement from baseline between operative and nonoperative treatment was determined for each group at each follow-up time period up to four years. A random individual effect was included to account for correlation between repeated measurements within individuals, and a formal interaction time between treatment and age was included for comparing the treatment effect in subgroups.

Provided by American Academy of Orthopaedic Surgeons