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Editorial

Medical management

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Today's heath care climate has generated increased focus on evidence-based medical practice. Until recently, there have been few prospective studies comparing cost and clinical outcomes for the variety of treatment options for common spinal disorders. Ideally, large studies comparing the effectiveness of the various treatments available for the management of cervical and lumbar degenerative conditions will be performed.[7] There have been a number of proposals advocating a greater need and role for evidence regarding which treatments result in better and more cost-effective approaches for treating spinal disorders.[4,5,7,13] One of the hurdles in developing an evidence-based approach that compares nonoperative and operative management of spinal disorders is the lack of high quality data on the clinical and cost-effectiveness of many nonoperative treatments.[2,6,9,10] Another hindrance is that most surgical procedures are compared to other surgical procedures rather than to nonsurgical treatments.[1,11]

Until recently, it was a frequently held belief that nonoperative management was at least equally effective as and far less expensive than surgical intervention for most spinal disorders. Several recent studies have called these beliefs into question.[3,14–17] Nonoperative management can be costly, particular if there are not demonstrable improvements in pain and function.[8] Glassman and associates evaluated 55 scoliosis patients who received only nonoperative care and collected utilization data for 8 specific treatment methods: medication, physical therapy, exercise, injections/blocks, chiropractic care, pain management, bracing, and bed rest.[6] The authors found that there were no significant changes in any of the health-related quality of life outcome measures during the minimum 2-year follow-up period. The mean treatment cost over the 2-year period was $10,815. The mean cost during that period was $9704 for the low-symptom patients, $11,116 for the mid-symptom patients, and $14,022 for the high-symptom patients.[6] Martin and associates reported that during the 1997–2005 period, there was an estimated 111% increase in total national spine-related expenditures for chiropractor visits and that expenditures for prescription medications directly attributed to spine problems increased 188%.[8] Despite these substantial increases in resource utilization, there was no evidence of improvement in self-assessed health status corresponding to these interventions.[8]

The present study by Parker and colleagues[12] evaluated 150 patients with degenerative lumbar spine disease (spondylolisthesis in 50; stenosis in 50; and disc herniation in 50) who were managed nonoperatively at a single comprehensive spine center over a 12-month period. Similar to the study by Glassman and associates,[6] Parker and colleagues found that with nonoperative management, the 2-year improvement did not achieve a minimum clinically important difference in any outcome measure for any of the disease groups.[12] The authors also found that nonoperative treatment was costly, with a mean 2-year total cost (direct + indirect) of medical management of $6606 for spondylolisthesis, $7747 for stenosis, and $7097 for herniation.[12] They also found that 18 patients (36%) with spondylolisthesis, 11 (22%) with stenosis, and 17 (34%) with disc herniation eventually required surgical management due to lack of improvement with nonoperative management.[12]

The cost per quality-adjusted life-year (QALY) gained is predicated on the magnitude of improvement in health state. Even very expensive treatments can be found to be cost-effective if the treatments substantially improve health status and have long-term durability. Similarly, less expensive treatments that do not improve health status can be very costly per QALY over time. Tosteson and associates found that, for patients with spinal stenosis, degenerative spondylolisthesis, or intervertebral disc herniation, QALYs gained from surgical intervention compared favorably with nonoperative care when comparing 2-year follow-up and 4-year follow-up because of the durability of the result from surgical intervention.[16] They concluded that "comparative effectiveness evidence for clearly defined diagnostic groups from SPORT shows good value for surgery compared with non-operative care over 4 years."[16]

The present study by Parker and colleagues provides additional important information that challenges the proposition that nonoperative treatments are inexpensive, particularly when general health state improvement is considered. Despite the high-quality data provided by the SPORT (Spine Patient Outcomes Research Trial) studies,[16,17] the relative effectiveness of surgical compared with nonoperative care is questioned. The present study effectively demonstrates that nonoperative care for lumbar spondylolisthesis, stenosis, and disc herniation can be expensive and is not particularly effective in improving pain or function.[12]

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Disclosure

The authors report no conflict of interest.

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Response

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We would like to thank Drs. Shaffrey and Smith for their thoughtful and timely editorial regarding our article, "Two-year comprehensive medical management of degenerative lumbar spine disease (lumbar spondylolisthesis, stenosis, or disc herniation): a value analysis of cost, pain, disability, and quality of life."

It is critical that all stakeholders in health care reform engage in patient-centered, value-based reform rather than a more rudimentary, cost-based purchasing paradigm. The cheapest care is no care, and patient-centered benefit must be considered in the value equation, particularly in spine care. The ongoing, longitudinal nature of low-back medical therapies ultimately results in substantial costs across the care episode. These medical costs are even more substantial from a population health perspective.

Our results are not meant to conclude that comprehensive medical management is wasteful or ineffective for all lumbar degenerative diseases. The majority of low-back disorders do respond well to a multitude of conservative measures. Rather, our study suggests that when extensive and prolonged conservative treatment options have failed for structural spine pathology (and the patients are therefore appropriate candidates for surgery), further continued medical treatments may be of low health care economic value. Withholding effective surgical treatments in this scenario solely due to up-front costs is not in the long-term benefit of the patient, the physician, or the payer alike.

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