Letters to the Editor

NEUROSURGICAL FORUM

Results of comprehensive medical management of lumbar disorders questioned

TO THE EDITOR: Parker et al.11 presented results of the 2-year comprehensive medical management of degenerative lumbar spine disease for lumbar spondylolisthesis, stenosis, or disc herniation with a value analysis of cost, pain, disability, and quality of life [Parker SL, Godil SS, Mendenhall SK, et al: 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. J Neurosurg Spine 21:143–149, August 2014]. They concluded that surgery was strikingly cost-effective, as compared with comprehensive medical management, whose 2-year total cost ranged from $6600 to $7747 depending on the pathology assessed. They also discussed cost-effectiveness, citing a value of $78,856–$110,671 per quality-adjusted life year (QALY) for medical management, compared with a value of $53,914–$62,995 per QALY for surgery. These figures were based on their own cost-effectiveness studies.

The authors did not follow appropriate methodology in their assessment. Quality-adjusted life year details are not shown for comprehensive medical management. The authors boldly state that they are comparing apples to apples; however, if that is the case, they may be comparing sweet apples to tart apples. More accurately, they have compared apples to oranges. They included patients who initially did not respond favorably to conservative therapy and for whom surgery was chosen as the next option. Patients in whom conservative management initially fails often do not improve at a later date. This has been shown repeatedly for epidural injections, where patients who report at least 3 weeks of improvement following the initial two epidural injections tend to show improvement superior to that in patients who do not respond to the first two injections.5,6,8,10,11 Further, this strategy has been utilized to select a control group for percutaneous adhesiolysis and consistently produced poor results in those who had repeat caudal epidural injections after having failed to respond to epidural injections.5,29

Most importantly, the authors did not describe the types of conservative management provided to patients. Significant bias exists in surgeon-directed conservative management compared with interventional pain management and compared with conservative management using a multidisciplinary approach. In fact, a cost utility analysis of caudal epidural injections in the treatment of lumbar disc herniation, central spinal stenosis, and post–lumbar surgery syndrome using only the direct medical expenses showed an average cost per QALY of around $2200.9 The cost-effectiveness of spinal cord stimulation compared to conventional medical management was £5624 per QALY.12 Among the most quoted assessments of surgical interventions and conservative management are those from the Spine Patient Outcomes Research Trial (SPORT). Its results showed that the cost per QALY gained for surgery relative to nonoperative care was $69,403 for disc herniation, $77,600 for spinal stenosis, and $115,600 for degenerative spondylolisthesis.13,14 Thus, it is inappropriate to assess patients in whom conservative management failed, to subsequently provide them with the same failed treatment, and then to conclude that this treatment somehow translates as not being cost-effective. No credible physician would continue conservative management after its failure for 2 years. The details of conservative management, including the types of modalities utilized (for example, were epidural injections utilized; if so, how many; what were the reasons for using them), leads to a cost of approximately $2000 for health care visits and from $3233 to $4340 for medications/injections, with total direct costs making up a significant proportion of the overall costs. In addition, no injection treatment for spondylolisthesis demonstrating any type of efficacy has been described in the literature. Consequently, the authors may have utilized treatments that were not proven to be effective.1,2 Epidural injections have significant Level II evidence supporting their use, specifically, high-quality randomized controlled trials for caudal and lumbar interlaminar epidural injections for disc herniation and for central spinal stenosis, for caudal injections used in post–lumbar surgery syndrome, and for lumbar transforaminal epidural injections for disc herniation.1,2 In fact, carefully conducted systematic reviews have shown evidence favoring each of these three approaches (interlaminar, caudal, transforaminal) in the management of low-back pain with a radicular component.

Thus, this analysis of cost, pain, disability, and quality of life does not follow sound scientific principles and, despite the authors’ assertions, does not compare apples to apples.

Laxmaiah Manchikanti, MD
University of Louisville, Louisville, Kentucky
Kenneth D. Candido, MD
Advocate Illinois Masonic Medical Center, Chicago, IL
The authors report no conflict of interest. Dr. Benyamin is a consultant for Kimberly Clarke and Boston Scientific and owns stock in Integral Spine Solutions.

References


Response
We thank Manchikanti and colleagues for their comments on the overall value of medical therapies for lumbar pathologies. Medical treatment modalities are highly effective for a variety of nonspecific low-back diseases and a multitude of structural lumbar spinal disorders. A number of physical therapies, medications, and spinal injection therapies have proven to be valuable and cost-effective for many structural and surgically relevant lumbar spine pathologies. However, in a subset of patients with structural spine pathology, comprehensive multimodal therapies remain only mildly effective or even ineffective. It is this small subset of medically refractory patients in whom surgery is most relevant and the cohort that we chose to study. We believe that there is some truth to Manchikanti and colleagues’ statement that “no credible physician would continue conservative management after its failure.” In fact, it was our a priori hypothesis that continuing prolonged medical treatments in refractory patients has a low likelihood of providing delayed health benefit. In fact, the primary purpose of our study was to confirm exactly that: there is little health economic value or patient benefit in continuing ineffective treatments in the subset of patients with medically refractory structural spine disease. Our findings validate the comments in the editorial by Manchikanti et al. and are not intended to comment on the value of conservative management for a broader spectrum of spine patients.

It is reasonable to ask why one would solely study this subset of patients with initially medically refractory spine pathology. The primary reason is that it is exactly this subset of patients with structural lumbar pathology in which surgery is most relevant and most appropriately indicated. It is also the subset that is left to engage in further medical management when they are denied access to much-needed surgery by policymakers or third party payers. While Manchikanti et al., our group, and the findings of our prospective cohort study all suggest that continuing failed nonoperative spine care over the long term makes little sense, this practice continues to occur every day in the United States when patients are dissuaded by public opinion, financial disincentives, or payer policy from undergoing surgery.

Another reason to study longitudinal cost and outcomes of continued medical treatment in initially refractory patients is because obtaining a measurable cohort of surgically comparable patients is challenging. In the SPORT intent-to-treat analysis, the analyzable medical cohort had...