

Back Pain Outcomes: Been There, Done That Not!

Anthony Rosner, PhD, LLD [Hon.], LLC

With all the discussions going on about chiropractors being back pain experts and spine care specialists and such, the FCER has often conducted field surveys asking what practitioners wish to explore in research. Occasionally, a comment has drifted back to the effect that we have spent too much of our efforts in focusing upon back pain. In so many words: Been there; done that; bought the T-shirt; mailed the postcard; visited the Web site; read the comic; saw the video; chewed the gum!

As far as my sentiments are concerned regarding this cadre who might harbor this opinion, I could best express it in the words from movie mogul Samuel Goldwyn: "Include me out!" For it is obvious that regarding outcomes, chiropractic has yet to more firmly establish:

- specific subgroups within the back pain population (e.g., disc herniation? spinal stenosis? spondylolisthesis?);
- specific techniques (from nearly 100 described by Bergmann¹) for best managing these distinct groups;
- a number and frequency of manipulations, and over what span of time, that would be expected to produce optimal results for each of these populations;
- the extent, number and frequency of such ancillary treatments as electrical muscle stimulation, heat, or even ultrasound that might enhance the effects of manipulations for specific conditions; and
- whether treatments display any kind of role in preventing further back pain.

Suppose we begin with the fact that the 1998 Medical Expenditure Survey found that average health care costs incurred by individuals with back pain were 60 percent higher than those without back pain - and this may be an underestimate, because nursing home care costs were not included.² Couple this with the fact that the total number of spinal fusion operations (at an average unit cost of \$34,000³) in the United States each year has virtually doubled in only eight years, from a total of 150,000 in 1993.³ When you consider that (1) spinal manipulation was supported as one of the two most documented options out of 27 for treating back pain by the AHCPR more than 10 years ago;⁴ (2) spinal fusion for degenerative disc disease is not evidence-based and should be considered experimental;⁵ and (3) the best improvement following spinal fusion surgery would most likely only be a gain of some 10 to 15 points in the Oswestry Disability Index and not a cure,⁶ there would seem to be a major disconnect as to how back pain in this day and age is most commonly treated.

In comparing three of the most common, least invasive treatments for back pain, Lynton Giles demonstrated clinical and statistical superiority in patient outcomes (e.g., pain and disability scores, range of motion, general health questionnaire) for individuals treated by spinal manipulation as opposed to acupuncture or NSAIDs.⁷ Most of these improvements were sustained at one year follow-

up.⁸ From these data, the authors were able to suggest that spinal manipulation, if not contraindicated, "may be the only treatment modality of the assessed regimens that provides broad and significant long-term benefit."⁸

What about an optimal number of treatments, otherwise known as dose-response? A recent study from Mitchell Haas has made what appears to be the first foray into this area by comparing pain and disability outcomes of patients undergoing anywhere from one to four visits per week for a three-week period. The results clearly show continuing improvements in pain outcomes as the number of visits each week is increased from one to four. The icing on the cake is that these improvements, seen after four weeks, are sustained at 12 weeks only if soft-tissue therapy, hot packs, electrotherapy or ultrasound are included as ancillary treatments. This particular report really is a double whammy, since for the first time, we see not only that more chiropractic treatments may be needed to reach the maximum benefit, but also that ancillary modalities sustain these benefits for up to three months after therapy has ended.⁹ This study also forces us to reconsider what was found 10 years ago to be insufficient evidence to support the efficacy of physical agent modalities such as heat, ultrasound and electrical stimulation as isolated procedures in managing back pain.⁴

The difference here is that these modalities are being applied in combination with spinal manipulation.⁹

In the larger framework of outcomes evidence, one must look with optimism at a recent practice-based setting in which pain and disability scores of acute and chronic back pain patients under either chiropractic or medical care were compared. For chronic patients, a clinically important advantage (e.g., > 10 points on the Visual Analog Scale for pain) was found at three months and sustained for one year, the advantage being most prominent for chronic patients with pain below the knee. At three-year follow-up, patients under chiropractic as opposed to medical care reported substantially fewer pain days recalled within the past 12 months.¹⁰

What about waiting periods and prevention? One recent study, which seems rather obvious at face value, compares acute low back patients who are either assigned to immediate treatment by manual therapy, psychosocial education and exercise, or to a waiting list. Not surprisingly, the immediately treated group displays superior scores in disability, mood, general health and quality of life.¹¹ (Then again, I can hear some of my late relatives carping that they could have told me so from the beginning.) Suppose a group of patients was to be treated for chronic, nonspecific low back pain for a month and then administered follow-up therapies for an additional nine months. Would the extended visits display any additional benefits? "Yes," according to Martin Descarreaux and colleagues. In terms of disability scores (measured by the Oswestry scale), continued improvements were observable throughout the nine months of additional treatments, whereas the scores of those patients who had no extended visits reverted to baseline levels - wiping out any gains made during the initial one-month period.¹² Data such as these provide strong support for rehabilitative or maintenance therapy, something for which there has been precious little data, but which hopefully is now being addressed with reports like this.

Studies involving specific techniques and subgroups also remain a relatively wide-open question and will be discussed at a later date with the accumulation of more data. However, it is worth mentioning

now that one specific subgroup which has received virtually no attention at all in back pain outcomes research is the pediatric population. The lack of research in this area is somewhat of a liability, given that the profession touts its competence in managing this particular group of patients. The one notable and welcome exception appeared just three years ago from a cohort outcomes study in Canada, in which patients ages 4-18 were shown to experience improvements in pain deemed "important," with similar progressions shown by a Likert scale, after treatment in a chiropractor's office. All this happened within six weeks of treatment.¹³

So, in this mini-tour of some of the most recent clinical outcomes research in the chiropractic management of low back pain, it should be obvious that low back pain research has really just scratched the surface, rather than exhausted this very complex and intriguing topic. As we have seen here and elsewhere,¹⁴⁻¹⁷ back pain continues to elude conventional medical treatment. Rather than view the continued study of back pain as "beating a dead horse," the chiropractic community would do far better to ride this critter for all its worth.

References

1. Bergmann TF. Various forms of chiropractic technique. *Chiropractic Technique* 1993;5(2):53-55.
2. Luo X, et al. Estimates and patterns of direct health care expenditures among individuals with back pain in the United States. *Spine* 2003;29(1):79-86.
3. Agency for Health Care Research and Quality: Health Cost and Utilization Project. HCUPnet. www.ahrq.gov/data/hcup/.
4. Bigos S, O Bowyer, G Braen, et al. *Acute Low Back Pain in Adults. Clinical Practice Guideline No. 14.* AHCPR Publication No. 95-0642. Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services. December 1994.
5. Deyo RA, A Nachemson, S Mirza. Spinal fusion surgery: the case for restraint. *New England Journal of Medicine* 2004;350(7):722-726.
6. Fairbank J, H Frost, J Wilson-MacDonald, Y Ly-Mee, K Barker, R Collins. Randomised controlled trial to compare surgical stabilisation of the lumbar spine with an intensive rehabilitation programme for patients with chronic low back pain: The MRC Spine Stabilisation Trial. *British Medical Journal* 2005;330:1233.
7. Giles LGF, R Muller. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. *Spine* 2003;28(14):1490-1503.
8. Muller R, LGF Giles. Long-term follow-up of a randomized clinical trial assessing the efficacy of medication, acupuncture, and spinal manipulation for chronic mechanical spine syndromes. *Journal of Manipulative and Physiological Therapeutics* 2005; 28(1):3-11.
9. Haas M, E Group, DF Kramer. Dose-response for chiropractic care for chronic low back pain. *The Spine Journal* 2004; 4:574-583.
10. Haas M, B Goldberg, M Attwood. A practice-based study of patients with acute and chronic low-back pain attending primary care and chiropractic physicians. Two-weeks to 48-month follow-up. *Journal of Manipulative and Physiological Therapeutics* 2004;27(3):160-169.
11. Wand BM, C Bird, JH McAuley, CJ Dore, M MacDowell, LH De Souza. Early intervention for the management of low-back pain. *Spine* 2004;29(2):2350-2356.
12. Descarreaux M, J-S Blouin, M Drolet, S Papadimitriou, N Teasdale. Efficacy of preventive spinal manipulation for chronic low back pain and related disabilities: a preliminary study. *Journal of Manipulative and Physiological Therapeutics* 2004;27(8):509-514.
13. Hayden JA, SA Mior, MJ Verhoef. Evaluation of chiropractic management of pediatric patients with low back pain: a prospective cohort study. *Journal of Manipulative and Physiological*

Therapeutics 2003;28(1);1-8.

14. Freedman KB, J Bernstein. Educational deficiencies in musculoskeletal medicine. *Journal of Bone and Joint Surgery* 2002;84-A(4):604-608.
15. Freedman KB, J Bernstein. The adequacy of medical school education in musculoskeletal medicine. *Journal of Bone and Joint Surgery* 1998;80-A(10):1421-1427.
16. Matzkin E, EL Smith, D Frccero, AB Richardson. Adequacy of education in musculoskeletal medicine. *Journal of Bone and Joint Surgery* 2005;87-A(2):310-314.
17. Vlahos K, NA Broadhurst, MJ Bond. Knowledge of musculoskeletal medicine at undergraduate and post-graduate levels. *Australasian Musculoskeletal Medicine* May 2002:28-32.

MARCH 2006