Does Maintained Spinal Manipulation Therapy for Chronic Nonspecific Low Back Pain Result in Better Long-Term Outcome? Randomized Trial

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Mohammed K. Senna, MD, and Shereen A. Machaly, MD

These physicians are MD certified, well-trained, have been in practice for more than 10 years with good experience in managing LBP, and they are staff members of Rheumatology & Rehabilitation Department, Mansoura University [Egypt].

Nonspecific chronic LBP is not attributable to a recognizable, known specific pathology (such as infection, tumor, osteoporosis, fracture, structural deformity, inflammatory disorder, radicular syndrome, or cauda equina syndrome). It represents about 85% of LBP patients seen in primary care. “About 10% [of these patients] will go on to develop chronic, disabling LBP,” using the majority of health care and socioeconomic costs.

This prospective single blinded placebo controlled study was conducted to assess the effectiveness of spinal manipulation therapy (SMT) for the management of chronic nonspecific low back pain (LBP) and to determine the effectiveness of maintenance SMT in long-term reduction of pain and disability levels associated with chronic low back conditions. The efficacy of maintenance SMT in chronic nonspecific LBP has not been studied.

1) Sixty patients with chronic, nonspecific LBP lasting at least 6 months, were randomized to receive either:
   A)) 12 treatments of sham SMT over a 1-month period
   B)) 12 treatments consisting of SMT over a 1-month period
   C)) 12 SMT treatments over a 1-month period plus maintenance SMT every 2 weeks for the following 9 months.

2) Follow-up evaluations occurred at 1-, 4-, 7-, and 10-months, assessing:
   A)) Pain (Visual Analog Scale [VAS]
   The “VAS is a valid tool to indicate the current intensity of pain.”
   B)) Disability [Oswestry Disability Questionnaire]
   The Oswestry disability questionnaire has been shown to be a valid indicator of disability in patients with LBP.
   C)) Generic health [SF-36]
   The 36-Item Short Form Health Survey (SF-36) measures eight dimensions: general health perception, physical function, physical role, bodily pain, social functioning, mental health, emotional role, and vitality. “The SF-36 is a valid and reliable instrument widely used to measure generic health status, particularly for monitoring clinical outcomes after medical interventions.”
3) These authors hypothesized that if spinal manipulation therapy (SMT) is maintained for longer periods that it will be more beneficial in maintaining the desirable outcomes obtained after short-term treatment.

4) The spinal manipulation was defined as a “high velocity thrust to a joint beyond its restricted range of movement.”

**RESULTS** [rounded]

<table>
<thead>
<tr>
<th></th>
<th>Sham SMT 12 visits in 1 mo.</th>
<th>Real SMT 12 visits in 1 mo.</th>
<th>Real SMT 12 visits in 1 mo. + Maintenance SMT 2X/mo. for 9 mo.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pain at Baseline</strong></td>
<td>41/100</td>
<td>42/100</td>
<td>43/100</td>
</tr>
<tr>
<td><strong>Pain at 1 mo.</strong></td>
<td>33/100</td>
<td>29/100</td>
<td>29/100</td>
</tr>
<tr>
<td><strong>Pain at 4 mos.</strong></td>
<td>35/100</td>
<td>35/100</td>
<td>26/100</td>
</tr>
<tr>
<td><strong>Pain at 7 mos.</strong></td>
<td>37/100</td>
<td>36/100</td>
<td>25/100</td>
</tr>
<tr>
<td><strong>Pain at 10 mos.</strong></td>
<td>38/100</td>
<td>39/100</td>
<td>23/100</td>
</tr>
<tr>
<td><strong>Disability at Baseline</strong></td>
<td>38%</td>
<td>39%</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Disability at 1 mo.</strong></td>
<td>33%</td>
<td>24%</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Disability at 4 mo.</strong></td>
<td>33%</td>
<td>30%</td>
<td>23%</td>
</tr>
<tr>
<td><strong>Disability at 7 mo.</strong></td>
<td>35%</td>
<td>32%</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Disability at 10 mo.</strong></td>
<td>37%</td>
<td>35%</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Generic Health at Baseline</strong></td>
<td>27</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td><strong>Generic Health at 1 mo.</strong></td>
<td>27</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td><strong>Generic Health at 4 mo.</strong></td>
<td>26</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td><strong>Generic Health at 7 mo.</strong></td>
<td>26</td>
<td>28</td>
<td>33</td>
</tr>
<tr>
<td><strong>Generic Health at 10 mo.</strong></td>
<td>26</td>
<td>28</td>
<td>34</td>
</tr>
</tbody>
</table>
5) Results:

A)) Patients receiving real manipulation “experienced significantly lower pain and disability scores” than patients receiving sham manipulation at the end of 1-month.

B)) Only the group that was given spinal manipulations (SM) during the follow-up period (maintenance) showed more improvement in pain and disability scores at the 10-month evaluation.

C)) “In the non-maintained SMT group, the mean pain and disability scores returned back near to their pretreatment level.”

6) “SMT is effective for the treatment of chronic nonspecific LBP. To obtain long-term benefit, this study suggests maintenance SMT after the initial intensive manipulative therapy.”

7) Many reviews evaluated the role of spinal manipulation (SM) in the treatment of LBP, and concluded that SM is an efficacious treatment for nonspecific LBP.

8) “One possible way to reduce the long-term effects of LBP is maintenance care (or preventive care).”

9) “This study confirms previous reports showing that SMT is an effective modality in chronic nonspecific LBP.”

10) The disability and pain scores in this study “are significantly reduced in the short-term evaluation—but not in long-term—when compared with the sham manipulation.”

11) “The disability score difference (>14 points) observed after 10 months in the current study between the maintained SMT group and nonmaintained SMT group is statistically significant and clinically important.”

12) “The postulated modes of action of SMT include disruption of articular or periarticular adhesions, improvement of trunk mobility, relaxation of hypertonic muscle by sudden stretching, release of entrapped synovial folds or plica, attenuation of alpha-motor neuron activity, enhancement of proprioceptive behavior, and release of β endorphins, thus increase pain threshold. These mechanisms are expected to sustain during maintenance SMT.”

13) “SMT is effective for the treatment of chronic nonspecific LBP.”

14) “To obtain long-term benefit, this study suggests maintenance SMT after the initial intensive manipulative.”
15) “The most common adverse effects reported in this study were local discomfort and tiredness but no serious complications were noted. Most adverse effects were transient and began within 24 hours after treatment and were of mild to moderate severity.”

KEY POINTS FROM AUTHORS:

1) “This study demonstrated that SMT is an effective modality in chronic nonspecific LBP for short-term effects.”

2) “We suggest that maintained SMT is beneficial to patients of chronic nonspecific LBP particularly those who gain improvement after initial intensive manipulation to maintain the improved post-treatment pain and disability levels.”

COMMENTS FROM DAN MURPHY:

This is our third Article Review supporting the necessity of patients being under lifelong spinal maintenance adjusting. The other two studies are:

Article Review #16-12
Health Maintenance Care in Work-Related Low Back Pain and Its Association With Disability Recurrence
Journal of Occupational and Environmental Medicine
March 14, 2011

Article Review #23-13
A theoretical basis for maintenance spinal manipulative therapy for the chiropractic profession
Journal of Chiropractic Humanities
December 2011
Pain (VAS) For The 3 Groups Over 10 Months

Control Group

No Maintained SMT group

Maintained SMT group

Disability (Oswestry) For The 3 Groups Over 10 Months

Control Group

No Maintained SMT group

Maintained SMT group