The Short-Term Effects of Thoracic Transverse Mobilization in Patients with Subacromial Shoulder Pain

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Descoteaux H, SPT; Morris K, SPT; Taketa S, SPT; Boyles R, PT, DSc, OCS, FAAOMPT

Introduction

- There is evidence that manual physical therapy directed to the thoracic spine is effective for treating patients with subacromial shoulder pain (SSP).
- Most of the literature involves cervical and thoracic (CT) manipulation rather than CT mobilization.
- CT manipulation is not considered safe for all patients.
- Therapeutic effects of CT mobilization in patients with shoulder pain needs to be researched further.

Purpose: Measure the effects of a single treatment of thoracic spine transverse mobilization (TSTM), combined with a single home stretching exercise, in patients with SSP. Shoulder range of motion (ROM), shoulder pain and disability, and patient perception of treatment effects were assessed.

Methods

- A one group single treatment pretest/posttest study design (5 females, 3 males; mean age 26.75 ± 8.14) with shoulder pain meeting inclusion criteria:
  - Age 18-60 yrs,
  - Shoulder pain exacerbated by movement.
  - Capable of completing questionnaires written in English.
- Participants completed a standardized shoulder examination, then received treatment using TSTM (Figure 1) and were instructed on a single home stretching exercise (Figure 2).
- Outcome measures assessed:
  - Shoulder Pain and Disability Index (SPADI) (Table 1)
  - Global Rating of Change Scale (GRCS) (Table 1)
  - The 11 point Numeric Pain Rating Scale (NPRS) (Table 1)
  - Shoulder ROM (Table 2)

Results

<table>
<thead>
<tr>
<th>Outcome Measure</th>
<th>Initial score</th>
<th>48-h FU</th>
<th>MD</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPRS</td>
<td>5.38 ± 1.58</td>
<td>3.62 ± 2.34</td>
<td>1.76</td>
<td>0.003</td>
</tr>
<tr>
<td>GRCS</td>
<td>1.25 ± 1.56</td>
<td>1.63 ± 1.65</td>
<td>0.38</td>
<td>0.292</td>
</tr>
<tr>
<td>SPADI total</td>
<td>20.23 ± 8.45</td>
<td>13.44 ± 6.15</td>
<td>6.79</td>
<td>0.009</td>
</tr>
<tr>
<td>SPADI pain</td>
<td>31.25 ± 11.7</td>
<td>21.25 ± 9.05</td>
<td>10.00</td>
<td>0.014</td>
</tr>
<tr>
<td>SPADI disability</td>
<td>9.22 ± 6.55</td>
<td>5.64 ± 4.83</td>
<td>3.58</td>
<td>0.008</td>
</tr>
</tbody>
</table>

Table 1. Outcome measures: Numerical Pain Rating Scale (NPRS), Global Rating of Change Scale (GRCS), Shoulder pain and Disability Index (SPADI)

Table 2. Range of motion at intake and 48 hr follow-up.

Discussion

Study limitations include:
- Elements of research design that warrant additional research in order to strengthen MCD.
- The one group exploratory design does not allow the relationship of cause and effect between TSTM and the results to be established.
- Limited sample size.
- No control group.

Future research should include:
- Randomized control trial with larger sample size, a control group, and blinded researched in order to determine the efficacy of TSTM.
- Effectiveness of multiple treatment sessions.
- Effects after a longer follow-up period.
- Multifactorial design with greater physical therapist autonomy.

Conclusion

- A single treatment of non-thrust TSTM and a home stretch exercise provided a statistically significant decrease in self-reported shoulder pain and disability measures as measured by the SPADI and NPRS in patients at 48-hour follow-up.
- The SPADI and NPRS did not reach the minimum clinically important difference (MCID), however, the SPADI Pain subscale did.

Acknowledgements

School of Physical Therapy at the University of Puget Sound.