Background and Aim

- Myofascial trigger points (MTrPs) in the head and neck muscles are frequently found in people with tension type headache (TTH).
- MTrPs are implicated in the etiology of tension type headache and constitute a peripheral source of nociception that can induce central sensitization.
- Referred pain from MTrPs can be spontaneous or elicited by palpation and can contribute to the clinical manifestation of TTH.

Aim of the study:

- describe the referred pain pattern of MTrPs in persons with TTH.
- compare the mean extent of referred pain from each MTrP with pain complainers.

Materials and Methods

- Patients involved: 113 with TTH.
- Pain drawings of their usual pain and referred pain elicited by palpation of MTrPs were completed using 4 different paper body charts of the head and neck region (frontal, dorsal, right, left).
- Muscles examined to identify MTrPs:
  - Masseter, Sternocleidomastoid, Suboccipitalis, Splenius Capitis, Temporals, Upper Trapezius.
- Participants were instructed to color, using a pencil, every part of the body chart where they perceived pain, independently from the type and the severity of pain (44 sheets).
- Image digitalization using an image analysis software.
- Pain extent: sum of the pixels in each view as a percentage (%) of the total area.
- Pain frequency maps superimposing all the pain drawings produced on the same body chart.

Results

- Mean pain extent for usual pain: 12.4% of total head and neck area.
- Slight but not significant prevalence of pain in the posterior aspect of the head.
- MTrPs prevalence:
  - 31% for Masseter
  - 48% for Sternocleidomastoid
  - 50% for Suboccipitalis
  - 46% for Splenius Capitis
  - 77% for Temporals
  - 44% for Upper Trapezius
- Mean extent of referred pain was 2.9%, 4.0%, 6.9%, 5.7%, 4.9% and 5.4% respectively (range: 22% to 54% of the extent of the usual pain).

Table 1

<table>
<thead>
<tr>
<th>Subj</th>
<th>n</th>
<th>Front</th>
<th>Dorsal</th>
<th>Right</th>
<th>Left</th>
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<tbody>
<tr>
<td>MTrP</td>
<td></td>
<td>Prevalence</td>
<td></td>
<td></td>
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<tr>
<td>Masseter</td>
<td>35</td>
<td>5.20 (0.68)</td>
<td>6.12 (0.73)</td>
<td>2.83 (0.64)</td>
<td>3.26 (0.54)</td>
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<td>Sternocleidomastoid</td>
<td>44</td>
<td>5.00 (0.53)</td>
<td>6.57 (0.51)</td>
<td>4.53 (0.52)</td>
<td>3.08 (0.46)</td>
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<td>Suboccipital</td>
<td>37</td>
<td>5.00 (0.64)</td>
<td>6.00 (0.70)</td>
<td>4.00 (0.65)</td>
<td>4.26 (0.70)</td>
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<td>Splenius capitis</td>
<td>52</td>
<td>1.75 (0.77)</td>
<td>12.18 (0.87)</td>
<td>2.91 (0.62)</td>
<td>4.47 (0.16)</td>
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<td>Temporals</td>
<td>47</td>
<td>3.60 (0.58)</td>
<td>10.16 (0.71)</td>
<td>5.65 (0.66)</td>
<td>8.26 (0.67)</td>
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<tr>
<td>Upper Trapezius</td>
<td>50</td>
<td>3.61 (0.52)</td>
<td>6.94 (0.78)</td>
<td>5.59 (0.39)</td>
<td>6.52 (0.96)</td>
</tr>
</tbody>
</table>

Figure 2

Figure 3

Figure 4

Conclusion and Implications

- Referred pain was localized in specific areas of the neck and head region in people with TTH.
- The identified pain pattern was similar to the one originally reported by Travell and Simons (1983).
- Referred pain from MTrPs appears to contribute to pain symptoms of patients with TTH.
- Clinicians can use the pain frequency maps of MTrPs generated in this study for the evaluation of patients with head and neck complaints.

REFERENCES: