Will the Use of Osteopathic Manipulative Treatments on Patients with Headache in the Emergency Department Result in Decreased Pain?

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Headache is the fifth most common reason for seeking treatment in the Emergency Department (ED).

Two million visits per year.

Pharmaceutical therapy is the primary management in the ED.
Introduction

- Osteopathic physicians are trained to utilize OMT to treat many musculoskeletal and systemic ailments including headaches

- No prior double blinded studies on treatment of headache in the ED with OMT
Objective

- To evaluate the utility of osteopathic manipulative treatments (OMT) on patients presenting to the ED with headache
Hypothesis

• Patients receiving OMT are more likely to have a decreased level of pain compared to those patients receiving a sham osteopathic treatment.
Selection Criteria

- Patients > 18 years old with headache who did not have any of the following excluding criteria:
  - Temperature $\geq 100.4^\circ$
  - Providing physician suspects meningitis, brain abscess, encephalitis
  - AMS
  - History of trauma
  - Providing physician suspects intracranial hemorrhage
  - Focal deficits or other neurological abnormalities
  - Analgesics taken within an hour
Methods

• A physician not participating in the study recorded the patient’s pain scale prior to the treatment on a visual analogue scale.

• Patients were randomized to either an osteopathic manipulative therapy group or a sham osteopathic manipulative therapy group.

• Double blind randomized study.
Methods

- The osteopathic treatments (intervention) consisted of the following treatments:

  1. **Muscle Energy** to the suboccipital area
  2. **Muscle Energy** to the cervical paraspinal muscles bilaterally
  3. **Facilitated Positional Release** to the cervical paraspinal muscles bilaterally
Methods

• Sham treatments were performed in a similar manner to the traditional osteopathic treatments.

• *Muscle Energy* techniques were performed without the patient being asked to push and therefore not activating the golgi tendon.

• *Facilitated Positional Release* techniques were performed without axial compression and therefore the muscle spindle was not activated.

References:

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<th>Characteristic</th>
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<th>Sham N=14</th>
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<tr>
<td>Age</td>
<td>39.6</td>
<td>40.6</td>
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<tr>
<td>Race (%White)</td>
<td>40.0%</td>
<td>64.3%</td>
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<tr>
<td>Sex (female)</td>
<td>80.0%</td>
<td>57.1%</td>
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<tr>
<td>Initial Pain (StDEV)</td>
<td>73.3 17.6</td>
<td>78.4 18.1</td>
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Statistical Analysis

- Unpaired t-test was used to measure all continuous variables
- Performed with the use of StatsDirect software
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<td>73.3</td>
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<td>Final</td>
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6.4mm difference of improvement of intervention vs. sham with **95% CI of -9.2mm to 21.9mm**
Limitations

• Small sample size
• Osteopathic manipulative Treatments are operator dependent
• Sham treatments have yet to be validated as a proper placebo treatment
Discussion

• Although the results from our study do not show statistical significance, there was a six point decrease in pain.

• Medical decision making for treatment of headache in the ED consists of wanting to deliver fast and effective care without risk of side effects.
Conclusion

• This study fails to show that OMT is effective for pain management of headache in the emergency department
Future Research

- Different clinical setting
- Different techniques
- Different subgroup of headache patients
- Different measuring tool
Thank You

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Tamara M. McReynolds, DO, and BarryJ. Sheridan, DO. *Intramuscular Ketorolac Versus Osteopathic Manipulative Treatment in the Management of Acute Neck Pain the Emergency Department: A Randomized Clinical Trial";* 105:57–68; 2005