

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

Genevieve McGerald DO, Ron Dvorkin MD, David Levy DO,
Jacob Bair DO, Laura Fil DO, Doni Marie Segerivas DO,
Shannon Weinstein DO, David Yens PhD

Introduction

- 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:

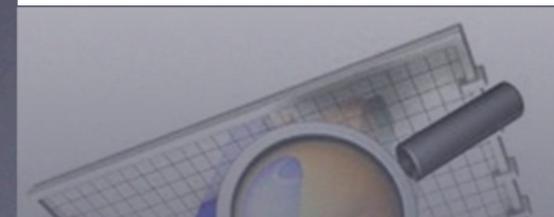
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Characteristics

| | Treatment N=10 | | | Sham N=14 | |
|-------------------------|-------------------|------|--|--------------|------|
| Age | 39.6 | | | 40.6 | |
| Race (%White) | 40.0% | | | 64.3% | |
| Sex (female) | 80.0% | | | 57.1% | |
| Initial Pain (StDEV) | 73.3 | 17.6 | | 78.4 | 18.1 |

Statistical Analysis

- Unpaired t-test was used to measure all continuous variables
- Performed with the use of StatsDirect software



| Results | | | | | |
|---------|-----------|-------|--|------|-------|
| | Treatment | StDev | | Sham | StDev |
| Initial | 73.3 | 17.6 | | 78.4 | 18.1 |
| Final | 60.4 | 28.8 | | 71.9 | 19.4 |
| Change | 12.9 | 20.6 | | 6.5 | 16.1 |

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

References

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