Effectiveness of Dry Needle acupuncture for arthritic canines

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In mild/moderate arthritic canines, would dry needle acupuncture, with NSAIDS, increase mobility versus solely NSAIDs?
Proposal Overview

• History/importance of acupuncture
• Participant involvement
• Testing methods
• Why I chose this type of study/methods
• Suggestions for future research
Introduction/Background

- Progressive disease-causing pain/lameness
- 5% of the population
- Common cause of euthanasia and natural death (Baker-Meuten, Wendland, Shamir, Hess, & Duerr, 2020)
- Commonly use NSAIDs, cause side effects.
• Acupuncture found to reduce pain and stiffness.

• Inhibits inflammatory mediators, works on normalizing physiologic homeostasis and promote self-healing (Summers, 2020).

• Successful case study for acupuncture (Koh, N.D.).

• World Small Animal Veterinary association, American Association of Feline Practitioners, and American Animal Hospital Association suggest acupuncture for multimodal pain management regimen (Koh, N.D.).
Introduction/Background (cont.)

- Meta-analysis found 55% had adverse effects to NSAIDs (Teixeira, et al., 2016).
- Acupuncture may reduce dosage of NSAIDs.
- Immediate and cumulative effects, following repeated treatments (Koh, N.D.).
Why this research?

- Zero articles about dry needle acupuncture (Sanderson, et al., 2009)

- Common issues for past research:
  - Needing to be more high-quality and randomized studies
  - Little participation
H0- Dry needle acupuncture, with NSAIDs, will show no difference of mobility in mild/moderate arthritic canines versus solely NSAIDs.

H1- Dry needle acupuncture, with NSAIDs, will increase mobility in mild/moderate arthritic canines versus solely NSAIDs.

H2- Dry needle acupuncture, with NSAIDs, will decrease mobility in mild/moderate arthritic canines versus solely NSAIDs.
Prospective cohort study
## Variables

<table>
<thead>
<tr>
<th>Controlled variables</th>
<th>Independent variable</th>
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| • Dogs taking Metacam or carprofen.  
• Mild/moderate arthritis  
• Elbow arthritis | • If the dog will receive dry needle acupuncture. |
Methods

• Before participation, confirmed diagnosis using scale.

• Prescribed Metacam or Carprofen prior to and for the duration of the study.

• Varying sizes accepted.

• Control group: Only receive NSAIDs.

• Treatment group: Receive NSAIDs and dry needle acupuncture (weekly).

Lameness scale (Chart by Ngavongpanit, Boonsri, Sripratak, & Markmee, 2012)
Methods (Cont.)

• Excluded/removed from the study if:
  • Taking other treatments (such as supplements and joint health diets)
  • Diagnosed with severe arthritis
  • Developed another condition

• Owners decide which group their dog joins.
Methods (cont.)

Testing Methods:

1. Walked across pressure plate.
   - Converted into Newtons- allows for normalizing the body weight
   - Allows to test dogs of varying sizes

2. Lameness scale-recording
   - Recording sent to three outside examiners and averaged.

   - Tested biweekly until 26 weeks involvement

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Grade</th>
<th>Clinical evaluation</th>
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</thead>
<tbody>
<tr>
<td>Lameness</td>
<td>1</td>
<td>Walks normally</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Slightly lame when walking</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Moderately lame when walking</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Severely lame when walking</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Reluctant to rise and will not walk more than five paces</td>
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</tbody>
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Osteoarthritis Scale (Chart by 5x5x5 The Management System for Canine Osteoarthritis, n.d.)
Discussion

• Prospective cohort allows us to determine if dry needle acupuncture was effective.
  • Better control of participation
  • Prevention of use of additional treatments
  • More precise data collection
• Testing methods prevent bias
Study Limitations

- Duration of study
- Treatment costs
- Loss of follow-up
Future Suggestions

• More dry-needle acupuncture studies
• Consider other low-dose NSAIDs.
• Compare dry needle acupuncture to other alternative therapies
• Multi-modal treatment discussion
Works Cited


