Treating Acute Ankle Sprains with the Fascial Distortion Model: A Treatment Innovation Study

Zac Maass D.O.
Jared Colvert D.O.
Erin Westfall D.O.
Angela Buffington PhD, MA

*Please see note section below each slide for additional information
Objectives

• Understand how to use patient body language to diagnose the basic dysfunctions associated with the Fascial Distortion Model.

• Recognize the potential benefits of treating acute ankle sprains with the Fascial Distortion Model.

• Understand the basic framework that will be used to expand the original treatment innovation study to a placebo controlled trial.
Introduction to the Fascial Distortion Model

• The Fascial Distortion Model (FDM) is a type of Osteopathic Manipulative Treatment (OMT)

• Developed by Stephen Typaldos D.O.
Introduction to the Fascial Distortion Model

• Connective tissue examples: fascial bands, ligaments, tendons

• FDM is made up of 6 broad diagnostic categories
  ▫ Diagnosed based on patient body language
Trigger band

• Most common dysfunction
  ▫ Body language
    • “Sweeping motion with their fingers along the anatomical course of the injured fascial fibers”
Herniated Trigger Point (HTP)

- Body language
  - Pushing with 2-3 fingers into a non-jointed area
Continuum Distortion

• Body Language
  ▫ Points to 1 or more spots of pain over bone
Ankle Sprains

• Acute ankle sprain is one of the most common musculoskeletal injuries encountered by primary care

• 2 million ankles sprains per year in the USA with approximately half occurring during athletic activity

• 20-40% of all athletic injuries are ankle sprains

• The majority of ankle sprains affect the lateral ankle ligaments

Ankle Anatomy

Treatment Innovation Study

Methods:
- A total of 9 patient were enrolled
  - One was excluded

The following information as collected from all participants:
- Basic injury information including range of motion

- Grade of sprain:
  - Grade 1 - (No or mild ligament tear) associated with minimal pain and swelling, no difficulty with weight bearing
  - Grade 2 - (partial/Intermediate ligament tear) associated with some loss of function, moderate pain and swelling, and usually with ecchymosis and difficulty bearing weight
  - Grade 3 - (severe or complete ligament tear) associated with significant loss of function, severe pain and swelling, ecchymosis, and almost always accompanied by difficulty weight bearing
Treatment Innovation Study

Methods:

• 5 patients received the FDM intervention
• 3 patients received current standard of care
• Treatment group was determined based on the type of physician the patient saw initially
  ▫ D.O. physician: FDM was offered based on History and Physical exam
  ▫ M.D. physicians/N.P./P.A.: Participants given standard acute ankle treatments without FDM
Treatment Innovation Study

Methods:

• All patients had follow-up phone calls
  ▫ Pain level
  ▫ Total number of days in lace-up brace
  ▫ Total days of NSAIDs
  ▫ Total days of missed school/work
## Treatment Innovation Study

### Results:

Change in Pain and Flexion from before to after FDM treatment (n=5)

<table>
<thead>
<tr>
<th></th>
<th>Mean ± sd</th>
<th>Before FDM Treatment</th>
<th>After FDM Treatment</th>
<th>Change</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.40 ± 1.67</td>
<td></td>
<td>3.80 ± 2.59</td>
<td>-1.60 ± 3.36</td>
<td>0.3750</td>
</tr>
<tr>
<td><strong>Degrees of Dorsiflexion</strong></td>
<td>103.00 ± 9.75</td>
<td></td>
<td>93.80 ± 8.26</td>
<td>-9.20 ± 5.63</td>
<td>0.1250</td>
</tr>
<tr>
<td><strong>Degrees of Plantar Flexion</strong></td>
<td>157.00 ± 11.51</td>
<td></td>
<td>162.00 ± 10.37</td>
<td>+5.00 ± 7.07</td>
<td>0.5000</td>
</tr>
</tbody>
</table>

*p<0.05
Treatment Innovation Study

Results:

Comparing Measures from Follow-up Phone Call between Standard of Care and FDM group

<table>
<thead>
<tr>
<th></th>
<th>FDM (n=5)</th>
<th>Standard of Care (n=3)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain (change from baseline)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>-5.50 ± 1.91 (-6)</td>
<td>0.00 ± 5.57 (-1)</td>
<td>0.1999</td>
</tr>
<tr>
<td>Total days in stabilization</td>
<td>3.40 ± 3.85 (2)</td>
<td>1.67 ± 2.89 (0)</td>
<td>0.5454</td>
</tr>
<tr>
<td>Total days of NSAIDS</td>
<td>2.00 ± 2.45 (2)</td>
<td>10.33 ± 17.04 (1)</td>
<td>1.0000</td>
</tr>
<tr>
<td>Total days of missed school/work</td>
<td>0.50 ± 1.00 (0)</td>
<td>0.00 ± 0.00 (0)</td>
<td>0.5847</td>
</tr>
</tbody>
</table>

*p<0.05; <sup>1</sup>missing n=1
Discussion

• Treatment innovation study shortcomings
  ▫ Sample size
  ▫ Lack of a sham OMT group
  ▫ Minimal generalizability
  ▫ FDM quality control
  ▫ Clarity needed when it comes to NSAID usage
References


• FDM image credit to http://doctortoddp.com/?page_id=477

• Ankle image credit to http://www.angelesrios.com/blog/2016/11/25/s997ohkan791fiasgfuuug51bj6ibx
