Role of Acupuncture in Acute Injury Management of Sprains & Strains

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• What is it about?

• Why this topic?

• What is the relevance to Occupational medicine setting?
• 90% of workers compensation claims in 2015-2016 due to injury & musculoskeletal disorders.
  • 43%: due to traumatic joint/ligament & muscle/tendon injuries.
    • 39%: due to body stressing (strains & sprains) as mechanism of injury.
      • Back, Shoulder, Knee, Wrist, Hand, Elbow and Neck.

• In WA, since April 2015, Acupuncture has been recognised as an “approved treatment” under section 5(1) of the Workers’ Compensation and Injury Management Act 1981.

Broad Outline:

• Only a little bit about Acupuncture
• Evidence Base
• My Conclusions
What is Acupuncture?

• Practiced in China & other Asian countries for over 2500 years.

• One of the key components of Traditional Chinese Medicine (TCM).

• Derived from two Latin words: “acus” - needle & “puncture” – to prick/penetrate.

• Procedure involves inserting tiny, hair-thin sterile steel needles into specific points in the body, where they are gently stimulated and left in situ for approximately 20-40 mins.
Mechanism of Action of Acupuncture

- Various theories have been proposed over the years:
  - Neuro-humoral
  - Morphogenetic
  - Nerve reflex theory
  - Gate control theory of pain
  - Endorphins, Corticoids, Substance P release etc.

- However, after 30 years of acupuncture research, there are still many puzzles left to be solved.
Current Research Literature

• >500 Cochrane database systematic reviews on use of acupuncture for a condition.

• >7000 publications; >3000 Clinical trials to date. Many more underway.

• Level 1 evidence available for its effectiveness in reducing post operative pain and opioid related side effects (ANZCA & FCP, 2010).

• Accepted as a reasonable adjunct in chronic pain management (Vickers et al., 2012).

• Large body of positive anecdotal experiences.

• WHO has recognised its use for 28 conditions.
My Literature Search/Review

• Search:
  • 11 Systematic Reviews/Meta-Analysis
  • 3 Clinical Guidelines (ACP, NICE, ANZCA & FPM)
  • ACP Journal Club Review
  • 1 Australian RCT
  • Google scholar and UptoDate for background information.

• No research available targeting occupational medicine setting.

• High quality sport-related research on strains & sprains lacking.
**Pain Effectiveness of Acupuncture**

- **ACP Journal Club Review** *(August 2011):* High-quality reviews show mixed effectiveness of acupuncture for pain.

<table>
<thead>
<tr>
<th>Quality of reviews (n)</th>
<th>Overall or tentatively positive</th>
<th>Failed to show effectiveness</th>
<th>Unclear results</th>
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</thead>
<tbody>
<tr>
<td>Excellent (4)</td>
<td>2</td>
<td>1</td>
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<tr>
<td>Good (32)</td>
<td>11</td>
<td>13</td>
<td>8</td>
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<tr>
<td>Moderate (3)</td>
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<tr>
<td>Poor (19)</td>
<td>9</td>
<td>6</td>
<td>4</td>
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<tr>
<td>Total (58)</td>
<td>25</td>
<td>20</td>
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Low back

• ACP Clinical guidelines for low back pain, 2017: strong recommendation to use nonpharmacologic treatment such as acupuncture for acute/subacute LBP (low quality evidence).

• NICE Clinical guidelines for LBP, 2016: Previously held recommendation in guidelines 2009 that allowed use of acupuncture for 10 sessions for up to 12 weeks removed in 2016.

• FPM, 2010: no mention of acupuncture for acute LBP.
Low back

• A RCT trial done during 2010-2011 in 4 Victorian Emergency Departments (Cohen et al., 2017).
  
  • safe/acceptable form of acute analgesia
  
  • may be useful as an adjunct to pharmacotherapy or when pharmacotherapy unsuitable.

Shoulder / Elbow / Wrist / Ankle

• Shoulder pain: little evidence to support or refute the use of acupuncture (Cochrane Database Systematic Review, 2005).
Shoulder / Elbow / Wrist / Ankle

• Lateral elbow pain: insufficient evidence to either support or refute the use of acupuncture (Cochrane Database Systematic Review, 2002).

• Carpal tunnel syndrome: systematic review of 6 RCTs found no convincing evidence to suggest that acupuncture effective (Sim et al, 2011).

• Ankle strains: no reliable support for effectiveness of acupuncture treatment (Cochrane Database Systematic Review, 2014).

• Achilles tendinopathy: 1 RCT suggesting that acupuncture may be beneficial (Cox et al., 2016).
Significant Methodological Flaws & Constraints

Safety Profile

• Incidence of minor adverse events: ~ 5% in the patients submitted to acupuncture (Zhang et al., 2010; Lee et al., 2013; Jan et al., 2017).

• Serious adverse events are rare & continue to be reported in the form of case reports (Yamashita, 2001; Chung et al., 2003; Zhang et al., 2010; Lee at al., 2013).
Dr David Sackett, one of the early pioneers of EBM, defines the process as ‘integrating the best available research evidence with clinical expertise and the patient's unique values and circumstances’ (Straus 2010).
Parting Conclusions

• Mixed evidence about effectiveness.

• Mostly safe if practiced using sterile techniques.

• May consider using it for a patient who is requesting the therapy and/or has failed to improve with other conventional therapies for acute strains & sprains.
Thank you and Any Questions ???
Acupuncture Restores The Flow of Qi

Poor Flow → Good Flow via Acupuncture
Bone Needles in the New Stone Age (~4,000 years ago), Preserved in Shanghai TCM Museum, China

Acupuncture needles found in Ming dynasty tomb, Dojindo Museum, near Beijing, China

Source: www.acupuncturemoxibustion.com
Philosophy behind TCM (Acupuncture)

- Holistic approach to illness linking body, mind & emotions

- “Highest goal” = prevention

- Health = delicate balance of 2 opposing but inseparable elements: Yin + Yang

- Interaction of Yin & Yang creates a vital energy force ("Qi")
• “Qi” flows through the body via channels (Meridians, which are named after organs & are paired).

• Disease & pain = when flow of “Qi” is blocked or excessive.

• By stimulating or inserting needles into specific points along these meridians, acupuncturist believe that “Qi” flow will re-balance and this will trigger the body’s natural healing response.
Assessment and Diagnosis

- Inspection: face, tongue
- Listening and smelling
- Inquiring about symptoms, emotions
- Palpation: radial pulse bilaterally and remainder of body (usually abdo)
- The diagnosis from TCM does NOT always match the conventional medicine diagnosis
References:

Acute Pain Management: Scientific Evidence. Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine 2010; 231.


References:


References:


UptoDate and Google Scholar.

WHO website for Acupuncture related information.