Wet Needling Techniques in Patient Care: Clinical Effectiveness and Guidelines
Authors: Wendy Pejic, Kaitryn Campbell


Acknowledgments:

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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada’s health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.
Research Questions

1. What is the clinical effectiveness of wet needling techniques in patient care?

2. What are the evidence-based guidelines regarding wet needling techniques in patient care?

Key Findings

One systematic review, five randomized controlled trials, and three non-randomized studies were identified regarding the clinical effectiveness of wet needling techniques in patient care. No evidence-based guidelines were identified regarding wet needling techniques in patient care.

Methods

A limited literature search was conducted on key resources including PubMed, the Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to systematic reviews, randomized controlled trials, non-randomized controlled trials, and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2013 and August 20, 2018. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1: Selection Criteria</th>
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<tr>
<td><strong>Population</strong></td>
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<td><strong>Intervention</strong></td>
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| **Comparators** | Q1: Any comparator; No comparator  
Q2: No comparator |
| **Outcomes** | Q1: Clinical effectiveness, benefits, harms, safety  
Q2: Guidelines |
| **Study Designs** | Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines |
Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

One systematic review, five randomized controlled trials, and three non-randomized studies were identified regarding the clinical effectiveness of wet needling techniques in patient care. No relevant health technology assessments or evidence-based guidelines were identified.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

One systematic review,\(^1\) five randomized controlled trials,\(^2,6,9\) and three non-randomized studies\(^7,8,9\) were identified regarding the clinical effectiveness of wet needling techniques in patient care.

The authors of seven studies\(^1,3,6-9\) (including one systematic review\(^1\)) noted that both saline and the active comparator trigger point injections\(^1,3,6-9\) were either effective at reducing pain or showed no difference with their active comparators in a variety of indications (including patellar and Achilles tendinopathy,\(^1\) pain in the upper trapezius muscle,\(^2\) masticatory myofascial pain syndrome, fibromyalgia, and headache,\(^3\) episodic\(^6\) tension-type headaches\(^9\) [although in patients with episodic tension-type headaches this was only observed after two months in the patients receiving multiple saline injections],\(^6\) chronic nonbacterial prostatitis/chronic pelvic pain,\(^7\) and in patients with myofascial pain in the iliocostalis thoracis-lumborum muscle\(^9\)). One RCT study abstract did not provide information specific to the efficacy of the saline injections\(^4\) while the authors of a different RCT did not observe any significant differences in pain reduction with saline injections in patients with diabetes aged less than 70 years with neuropathic pain in both feet.\(^5\) Detailed study characteristics are provided in Table 2.

No evidence-based guidelines were identified regarding wet needling techniques in patient care; therefore, no further summary can be provided.

<table>
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<th>Table 2: Summary of Included Studies</th>
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<tbody>
<tr>
<td><strong>First Author, Year</strong></td>
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<tr>
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<tr>
<td><strong>Systematic Reviews and Meta-Analyses</strong></td>
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<tr>
<td>Di Matteo, 2015(^1)</td>
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<tr>
<td><strong>Randomized Controlled Studies</strong></td>
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<tr>
<td>Kwanchuay, 2015(^2)</td>
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<td>First Author, Year</td>
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| Sabatke, 2015³     | included with MTrP at the upper trapezius muscle  
• Patients advised to continue stretching and ergonomic adaptation alongside injections | injection) | • Efficacy (as measured by VAS and PPT)  
• Safety | reduction between 0.9% NaCl and BTxA injections for the treatment of MTrP of the upper trapezius muscle  
• No SAEs in either group |
|                    | 70 patients with masticatory MPS, fibromyalgia, and headache (having TP) | • Anesthetic injection  
• Saline injection | • Headache frequency and intensity | • Injections in trigger points decreased fascial pain in patients with either injection type  
• Decreases in headache frequency and intensity were also decreased in patients with either injection type |
| Xie, 2015⁴         | 120 patients with MPS of the trapezius muscle  
• Whether treatment in the MTrPs or intramuscular IZ zone is more effective at relieving chronic neck pain | • Saline (0.9% NaCl) injections at the MTrPs (n=24; Group 1)  
• Lidocaine (0.5%) injections at the MTrPs (n=24; Group 2)  
• Saline (0.9% NaCl) injections at mid-upper trapezius (n=24; Group 3)  
• Lidocaine (0.5%) injections at mid-upper trapezius (n=24; Group 4)  
• Combination injection of 0.5% lidocaine at both mid-upper and trapezius | • Efficacy of lidocaine 0.5% injection in the intramuscular IZ for the treatment of chronic pain due to MTrPs in the trapezius muscle | • No information regarding the efficaciousness of saline injections was discussed in the abstract |
| Ghasemi, 2014⁵      | 40 patients with diabetes aged <70 years with neuropathic pain in both feet | • Intradermal BTxA injection (n=20)  
• Saline injection (n=20) | • Efficacy (as measure by DN4 questionnaire, NPS, and VAS scores) | • After saline injections, no significant differences were observed in DN4, NPS, and VAS scores |
| Karadas, 2013⁶      | 108 patients with frequent ETTH and MTrPs in their pericranial muscles | • Saline (NaCl 0.9%) injection (n=27, Group 1)  
• Lidocaine (0.5%) injection (n=27, Group 2)  
• 5 saline (NaCl 0.9%) injections (n=27, Group 3)  
• 5 lidocaine (0.5%) injections (n=27, Group 4) | At 2, 4, and 6 months post-treatment:  
• Frequency of painful days/month  
• VAS score | • Compared to pre-treatment, frequency of painful days/month scores significantly improved in Groups, 2, 3, and 4 at 2 months post-treatment |

Non-Randomized Studies

| Seong, 2017⁷        | Retrospective follow-up study of 63 patients with CP/CPPS | • HP (n=32) twice a week every third day for  
• SP (n=31) twice a week every third day for 4 | • Effectiveness of HP versus SP (measured) | • Pharmacopuncture and electroacupuncture (regardless of using HP and SP) were effective |
<table>
<thead>
<tr>
<th>First Author, Year</th>
<th>Study Characteristics</th>
<th>Intervention</th>
<th>Comparator(s)</th>
<th>Outcomes</th>
<th>Author’s Conclusions</th>
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<tr>
<td>Roldan, 2016&lt;sup&gt;a&lt;/sup&gt;</td>
<td>• Observational assessment of convenience sample of 43 patients who presented to the ED with clinical evidence of myofascial pain in the ITL muscle</td>
<td>• Injection of the TP with particulate steroids with a local</td>
<td>• Saline injection of TP</td>
<td>• Pain control (primary outcome)</td>
<td>• All patients (regardless of injection type) still had satisfactory pain control 2 weeks post-injection</td>
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<td>Karadas, 2013&lt;sup&gt;b&lt;/sup&gt;</td>
<td>• Prospective study</td>
<td>• Lidocaine injection (n=24)</td>
<td>• Placebo (saline injection; n=24)</td>
<td>• Painful days (as measured by VAS score)</td>
<td>• Number of painful days in a month decreased after treatment in both groups</td>
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<td>• Injection presented in these patients ranged from 2 days to 7 years</td>
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<td>• Anxiety and depression&lt;sup&gt;b&lt;/sup&gt;</td>
<td>• Lidocaine group’s response was better than that of the saline group (p&lt;0.001)</td>
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<sup>a</sup>“…., on alternate days 2 mL for each muscle was injected into the frontal, temporal, masseter, sternocleidomastoid, semispinalis capitis, trapezius and splenius capitis muscles bilaterally.”

<sup>b</sup>Will not be focusing on this outcome in this report.

**References Summarized**

**Health Technology Assessments**

No literature identified.

**Systematic Reviews and Meta-analyses**

   PubMed: PM25323041
Randomized Controlled Trials


Non-Randomized Studies


Guidelines and Recommendations

No literature identified.
Appendix — Further Information

Previous CADTH Reports

   PubMed: PM27831670

Systematic Reviews and Meta-Analyses – Saline Injection Not Specified

   PubMed: PM25576642

Non-Randomized Studies – Alternative Intervention

   PubMed: PM24809367

Clinical Practice Guidelines – Methodology Not Specified

Saline Not Specified

   PubMed: PM26087225

Review Articles

   PubMed: PM27008292

   PubMed: PM26118521

   PubMed: PM23579112
Additional References
