**Critically Appraised Topic (CAT)**

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| **Project Team:**  |
| **9A-5** |
| **Project Team Participants:**  |
| **Sahar Edalatpour, Austin Czarnecki, Jack Hayes, Francesca Malensek** |
| **Clinical Question:** |
| **What treatment modalities would best serve our patients with severe TMD symptoms?** |
| **PICO Format:** |
| **P:** |
| **Patients with temporomandibular disorder** |
| **I:** |
| **Trigger point injections** |
| **C:** |
| **Traditional drug modalities such as muscle relaxants (cyclobenzaprine)** |
| **O:** |
| **TMD symptom alleviation** |
| **PICO Formatted Question:** |
| In patients with severe TMD, how does trigger point injections compare with muscle relaxants in alleviating symptoms? |
| **Clinical Bottom Line:** |
| **Do trigger points have a more favorable, equal, or less favorable result for patients with severe TMD symptoms**  |
| **Date(s) of Search:**  |
| **09/16/2020** |
| **Database(s) Used:** |
| **PubMed** |
| **Search Strategy/Keywords:** |
| **TMD, trigger point injections, muscle relaxants, TMJ** |
| **MESH terms used:** |
| **“TMJ, disorder” , “Trigger point injections”, “Centrally acting muscle relaxants”, “Dry Needling”** |
| **Article(s) Cited:** |
| Charles D, Hudgins T, MacNaughton J, Newman E, Tan J, Wigger M. A systematic review of manual therapy techniques, dry cupping and dry needling in the reduction of myofascial pain and myofascial trigger points. *J Bodyw Mov Ther*. 2019;23(3):539-546. doi:10.1016/j.jbmt.2019.04.001Espejo-Antúnez L, Tejeda JF, Albornoz-Cabello M, et al. Dry needling in the management of myofascial trigger points: A systematic review of randomized controlled trials. *Complement Ther Med*. 2017;33:46-57. doi:10.1016/j.ctim.2017.06.003Patel J, Cardoso JA, Mehta S. A systematic review of botulinum toxin in the management of patients with temporomandibular disorders and bruxism. *Br Dent J*. 2019;226(9):667-672. doi:10.1038/s41415-019-0257-z |
| **Study Design(s):** |
| **Meta- analysis** **Systematic review**  |
| **Reason for Article Selection:** |
| **Recent publication****Relevant to the case** **High levels of evidence**  |
| **Article(s) Synopsis:** |
| **Article 1:** Eight studies on manual therapy, twenty-three studies on dry needling, and two studies on dry cupping met the inclusion criteria. While there was a moderate number of randomized controlled trials supporting the use of manual therapy, the evidence for dry needling ranged from very low to moderate compared to control groups, sham interventions, or other treatmentsArticle 2: Fifteen studies were included in this systematic review. The main outcomes that were measured were pain, range of motion, disability, depression and quality of life. The results suggest that dry needling is effective in the short term for pain relief, increase range of motion and improve quality of life when compared to no intervention/sham/placeboArticle 3: |
| **Levels of Evidence:** (For Therapy/Prevention, Etiology/Harm) See <http://www.cebm.net/index.aspx?o=1025>[x]  **1a** – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)[ ]  **1b** – Individual RCT[ ]  **2a** – Systematic Review of Cohort Studies[ ]  **2b** – Individual Cohort Study[ ]  **3** – Cross-sectional Studies, Ecologic Studies, “Outcomes” Research[ ]  **4a** – Systematic Review of Case Control Studies[ ]  **4b** – Individual Case Control Study[ ]  **5** – Case Series, Case Reports[ ]  **6** – Expert Opinion without explicit critical appraisal, Narrative Review[ ]  **7** – Animal Research[ ]  **8** – In Vitro Research |
| **Strength of Recommendation Taxonomy (SORT) For Guidelines and Systematic Reviews**See article **J Evid Base Dent Pract 2007;147-150**[x]  **A** – Consistent, good quality patient oriented evidence[x]  **B** – Inconsistent or limited quality patient oriented evidence[ ]  **C** – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening |
| **Conclusion(s):** |
| **We need more research**  |