**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 than muscle relaxants for patients with severe TMD symptoms** |
| **Date(s) of Search:** |
| **09/15/2020, 09/17/2020** |
| **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:** |
| **Luis Espejo-Antúneza Jaime Fernández-Huertas Tejedaa Manuel Albornoz-Cabello. Dry needling in the management of myofascial trigger points: A systematic review of randomized controlled trials (2017).** <https://doi.org/10.1016/j.ctim.2017.06.003>  **Haggman-Henrikson B,Alstergren P, Davidson T, A. Pharmacological treatment of oro‐facial pain – health technology assessment including a systematic review with network meta‐analysis (2017.)** [**https://doi.org/10.1111/joor.12539**](https://doi.org/10.1111/joor.12539)  **Machado E., A systematic review of different substance injection and dry needling for treatment of temporomandibular myofascial pain (2018)** <https://doi.org/10.1016/j.ijom.2018.05.003> |
| **Study Design(s):** |
| **Meta- analysis**  **Systematic review** |
| **Reason for Article Selection:** |
| **Recent publication**  **Relevant to the case**  **High levels of evidence** |
| **Article(s) Synopsis:** |
| * **Relevant studies were identified by searching PubMed, Scopus, The Cochrane Library and Physiotherapy Evidence Database. : 3 studies compared dry needling to lidocaine injections to botulism injections. Conflicting results for pain pressure threshold. Improved range of motion** * **Adults patients (18+) with chronic oro-facial pain (TMD). Subdivided into three groups. TMD-muscle, TMD- joint, Burning mouth syndrome. 41 studies included. Analyzed treatments: muscle relaxants, substrate injections, NSAIDs, benzodiazepenes, and other** * **Systematic review of randomized clinical trials of 18 RCTs. Comparisons Dry needling x substrate injection, Dry needling x other treatments, Substance injection x other treatments** |
| **Levels of Evidence:** (For Therapy/Prevention, Etiology/Harm)  See <http://www.cebm.net/index.aspx?o=1025>  **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**  **A** – Consistent, good quality patient oriented evidence  **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):** |
| * **Both dry needling/ substrate injections into trigger points and pharmacological interventions show evidence of reducing pain for patients at least over the short term.** * **Conflicting results for maximum mouth opening and more research would be needed** * **Evidence supports muscle relaxants aid in TMD associated with muscle pain, while substrate injections aid in TMD associated with joint pain.** |