**Critically Appraised Topic (CAT)**

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| **Project Team:**  |
| **7B-2 Viktoriia Senych Team Leader** |
| **Project Team Participants:**  |
| **Tom Gorski, Daniel Stein, Alexandra Pentala** |
| **Clinical Question:** |
| **For patients with TMD, is treatment with trigger point injections using lidocaine superior to using botox and dry needling?** |
| **PICO Format:** |
| **P:** |
| **Management of TMD** |
| **I:** |
| **Treatment using trigger point injections with lidocaine** |
| **C:** |
| **Trigger point injections with botox and dry needling** |
| **O:** |
| **effectiveness** |
| **PICO Formatted Question:** |
| **For patients with TMD, is treatment with trigger point injections using lidocaine superior to using botox and dry needling?** |
| **Clinical Bottom Line:** |
| **Substance injections (lidocaine or botox) is preferred over dry needling. When choosing between lidocaine or botox, one should consider price, patient preference, as well as medical contraindications for either** |
| **Date(s) of Search:**  |
| **11/02/2020** |
| **Database(s) Used:** |
| **PubMed** |
| **Search Strategy/Keywords:** |
| **TMD, TMJ Pain, trigger point, injection, dry needling, botox** |
| **MESH terms used:** |
| **TMD, Trigger point, injection, lidocaine, botox** |
| **Article(s) Cited:** |
| Botulinum Toxin, Lidocaine, and Dry-NeedlingInjections in Patients with Myofascial Pain andHeadaches |
| **Study Design(s):** |
| **Patients were divided into 3 groups for treatment of TMD and headaches: Lidocaine at 0.25%, Botox at 0.25% and dry needling. Doctors used digital palpation to locate trigger point, then each patients associated treatment was administered. Injections were given until a “local twitch response” was no longer seen in each case. With follow ups, doctos used a set of criteria to evaluate the effectiveness of botox vs lidocaine (see pg 48 of article).** |
| **Reason for Article Selection:** |
| **I chose this article because although it is not the highest level of evidence, the article studies the exact comparison we were interested in.**  |
| **Article(s) Synopsis:** |
| **For the re-eval periods, patients showed no “significant difference of behavior.” The article also noted, “treatments directed only at alleviating or controlling the head pain have shown discouraging results in a chronic population.” This, the article attributes, is from our lack of knowledge in the technique and execution. Based on the article, it is clear that the results seem to be entirely patient based and not very consistent/ predictable. Some patients will respond well to this treatment, however, the article states that in treating the general population, these methods seem impracticle.****It is important to note that these tests DID see positive results. However, the duration of such results are not significant enough to “treat/cure” the problem we are addressing. The article says this is because while the treatments can control/ manage the problem, the underlying etiologies causing the initial problem is not being addressed. Therefore, this article concludes that this method, at least with the technique used, is most practicle in emergency situations to relieve pain. Also, lidocaine should be used over botox as they both achieve satisfactory results, yet lidocaine is significantly cheaper.** |
| **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[x]  **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[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):** |
| **Based on this article, this type of treatment should only be considered as a management of pain in emergency situations while the underlying etiology is addressed. The article notes that the results of such techniques are temporary and should not be used as a final treatment for myofascial pain.**Lidocaine too should be the substance of choice as it yields similar results to the others and is significantly more inexpensive. |