**Critically Appraised Topic (CAT)**

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| **Project Team:** |
| **10B-5** |
| **Project Team Participants:** |
| **Nathan Pinsky, Michael Feeney, Aliyah Wilson, Christian Montes** |
| **Clinical Question:** |
| **For a patient with advanced mandibular residual ridge resorption, will an implant retained overdenture be more satisfactory than a traditional denture?** |
| **PICO Format:** |
| **P:** |
| **Edentulous patient with bone resorption and systemic disease** |
| **I:** |
| **Implant supported overdenture on the mandibular arch** |
| **C:** |
| **Traditional denture** |
| **O:** |
| **Satisfaction** |
| **PICO Formatted Question:** |
| **In an edentulous patient, what brings more patient satisfaction: traditional denture or implant retained overdenture?** |
| **Clinical Bottom Line:** |
| **The studies show that overdentures are proven to be more satisfactory to traditional dentures due to increased retention, which is a common problem with traditional dentures.** |
| **Date(s) of Search:** |
| **October 5-14, 2020** |
| **Database(s) Used:** |
| **PubMed** |
| **Search Strategy/Keywords:** |
| **Overdenture, denture, ridge** |
| **MESH terms used:** |
| **Overdenture, denture, ridge** |
| **Article(s) Cited:** |
| **Article 1:**  Sivaramakrishnan, G, and K Sridharan. “Comparison of Implant Supported Mandibular Overdentures and Conventional Dentures on Quality of Life: a Systematic Review and Meta-Analysis of Randomized Controlled Studies.” *Australian Dental Journal*, vol. 61, no. 4, 2016, pp. 482–488., doi:10.1111/adj.12416.  **Article 2:**  Nogueira, T. E., et al. “Mandibular Complete Denture versus Single-Implant Overdenture: a Systematic Review of Patient-Reported Outcomes.” *Journal of Oral Rehabilitation*, vol. 44, no. 12, 2017, pp. 1004–1016., doi:10.1111/joor.12550. |
| **Study Design(s):** |
| **Article 1: Systematic Review & Meta-analysis**  **Article 2: Systemic Review & Meta-analysis** |
| **Reason for Article Selection:** |
| **Article 1: Comparing the quality of life results of conventional dentures vs implant-supported overdentures.**  **Article 2: Comparing the overall effectiveness of conventional dentures vs implant-supported overdentures.** |
| **Article(s) Synopsis:** |
| **Article 1:**  **A literature search of Medline (via PubMed), the Cochrane Central Register of Clinical Trials (CENTRAL) and the Database of Abstracts of Reviews of Effects (DARE) was performed. Both authors screened the abovementioned databases for studies and independently screened the abstract for suitability. We followed the guidelines to assess whether trials took adequate steps to reduce the risk of bias across 6 domains: personal and outcome accessors, sequence generation, allocation concealment, blinding participants, incomplete outcome data, selective outcome reporting, and other sources of bias. Of the 88 articles identified (24 were obtained from screening) 14 were identified to meet the criteria. Of these, 5 were picked to be used for the studies. After viewing these studies, the conclusion was that implant supported over dentures perform better than conventional dentures in improving quality of life in many ways.**  **Article 2: Surgical Management of Peri-Implantitis**  **Electronic databases MEDLINE, PubMed, EMBASE, Dentistry and Oral Sciences Sources from Jan 1990 to May 2013 were used to pull 21 human clinical trials comprising of 5 RCTs, 12 case series, 1 cohort studies, 3 quasi-experiments in English language with minimum sample size of 8 surgically treated screw-shaped implants and follow-up period of minimum 6 months for this systemic review. The focus question of this systemic review was, “What are the radiographic and clinical outcomes of different surgical interventions for the treatment of peri-implantitis?” Also, four surgical treatment groups were identified, which are access flap and debridement, surgical resection, application of bone grafting materials, and guided bone regeneration. Limitations include heterogeneity in the study design, case selection, and treatment provided among studies, and one of the RCTs was shown to have a high bias.** |
| **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):** |
| **Article 1:** Non-surgical treatment for peri-implant mucositis appeared to be effective while for peri-implantitis, non-surgical treatment provided modest or unpredictable outcomes.  Article 2: Within the limitation of this systematic review, application of grafting materials and barrier membranes resulted in greater PD reduction and average radiographic bone fill of around 2mm.  **Article 3: There is a lack of consensus on the most effective treatment protocol on the management of peri-implantitis. Regardless of which therapeutic treatment protocol is adopted for the management of peri-implantitis, a proficient diagnosis, patient compliance (good OHI), control of possible risk factors, and skillful decontamination of implant surfaces influence the overall outcome of the treatment.** |