

Critically Appraised Topic (CAT)

Project Team:
6B – 5
Project Team Participants:
Shannon Taylor – D4, D3 Joseph Brostowitz – D2 Eleanor Meyer – D1 Kevin Nitz – ALT D1
Clinical Question:
What are the recommended treatment strategies for patients with intellectual disabilities during dental procedures?
PICO Format:
P:
Patients with intellectual disabilities
I:
Pharmacological behavior management strategies for outpatient dental procedures
C:
Nonpharmacological behavior management strategies
O:
Maximize comfort and cooperation with this population of patients
PICO Formatted Question:
When performing outpatient dental procedures on patients with intellectual disabilities, is using pharmacological versus nonpharmacological strategies more beneficial to maximize their comfort and cooperation?
Clinical Bottom Line:
This patient is unable to process complex thought and has difficulty expressing pain level. She came to MUSOD to have endodontic work done and also had significant calculus buildup even after one session of SRP was done. This evidence will help improve patients comfort with these longer and more invasive procedures.
Date(s) of Search:
Wednesday September 30, 2020 Tuesday October 13, 2020
Database(s) Used:
PubMed Cochrane Library Google Scholar
Search Strategy/Keywords:
Behavioral mangement

Treatment strategies Special needs Dental procedures Outpatient Sedation
MESH terms used:
Anesthesia, General Intellectual Disability Dental Care
Article(s) Cited:
Faulks, Denise, et al. "Sedation with 50% Nitrous Oxide/Oxygen for Outpatient Dental Treatment in Individuals with Intellectual Disability." <i>Developmental Medicine & Child Neurology</i>, vol. 49, no. 8, 2007, pp. 621–625., doi:10.1111/j.1469-8749.2007.00621.x. Hillebrecht, Anna-Lena, et al. "Changes in the Oral Health-Related Quality of Life in Adult Patients with Intellectual Disabilities after Dental Treatment under General Anesthesia." <i>Clinical Oral Investigations</i>, vol. 23, no. 10, 2019, pp. 3895–3903., doi:10.1007/s00784-019-02820-4. National Institutes of Health. "Practical oral care for people with intellectual disability." <i>Today's FDA : official monthly journal of the Florida Dental Association</i> vol. 22,1 (2010): 53-5, 57, 59.
Study Design(s):
1. Longitudinal, prospective, multicentre trial 2. Prospective single-center study 3. One of a series of booklets on providing oral care for people with mild or moderate developmental disabilities
Reason for Article Selection:
I chose these two articles and one booklet because the three of them combined highlight a triad of possibilities when treating a patient with intellectual disabilities. They each support and provide guidance on the use of different behavior management based on the level of disability. Together they also highlight the need for more research to be done to compare these methods of treatment and how to integrate them into one treatment plan.
Article(s) Synopsis:
The article written by Hillebrecht assessed changes in the oral health related quality of life in adult patients with intellectual disabilities after dental treatment under general anesthesia. Those included in this study were patients older than 18, patients requiring dental treatment under general anesthesia due to intellectual disabilities, and patients under guardianship due to intellectual disability. Researchers then created two

questionnaires, one simplified version for these patients inquiring things such as their functional limitations and physical pain, and the other for their primary caregivers asking to evaluate the post op pain for patients after treatment with anesthesia. Logistic regression and global/pairwise comparisons were performed based on questionnaire answers. The self and proxy rating indicated significant improvement of these adult patient's quality of life post general anesthesia administration during a dental procedure. Although generalizability was limited due to small sample size and single institution, the results show a strong correlation between general anesthesia and improved quality of life according to the patient and their caretaker.

Next, Faulks investigated the effectiveness, tolerability, and behavioral impact of sedation for invasive outpatient care under local anesthesia in persons with intellectual disabilities using inhalation of a fixed 50%N₂O/O₂ mixture as a single agent. After a 1 year long period, participating dentists would score the patients behavior throughout a dental treatment procedure. Results showcased that patients who were once unable to cooperate with conventional dental treatment were able to complete procedures 91.4% of the time.

Finally, the *Practical oral care for people with intellectual disability* booklet highlights non pharmacological recommendations and approaches to improve outcomes for patients who have mild to moderate forms of this disability. This developmental disability can manifest in very different ways in those diagnosed. For those with more mental challenges, the authors of this booklet recommend addressing your patient directly, asking the caregiver to elucidate on the patient's abilities, and to use simple concrete instructions delivered slowly and repetitively. If behavior is a challenge, schedule patients early in the day, reward cooperative behavior, and consider sedative techniques to diminish anxiety. Many of patients will indicate periodontal disease and strategies to improve this include teaching the caregiver how to brush the patients teeth as well as emphasize routine by performing oral hygiene in the same location, time, and position.

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):

Patients with intellectual disabilities pose a concern for dentists in their ability to successfully and comfortably treat this population. Pharmacological intervention is one method that has been proven effective in maximizing patient cooperation. However, nonpharmacological methods are key to the longterm preventative health of these patients when they go home with their care takers. Although the evidence and research is lacking, a consensus can be made. Intellectual disability can affect people in varying ways and it's up to the dentist to learn about the patient, show patience, and implement all of these avenues of treatment safely and appropriately.