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SUPER SEDATION! USING SEDATION DELIVERED BY MUCOSAL ATOMIZATION DEVICE (M.A.D) REDUCES THE NEED FOR GENERAL ANAESTHETIC IN CHILDREN AGED 1-8 YEARS FOR AUDIOLOGY TESTING

J. Hayward, J. Moore, M. Jepson, R. Lawrence

Birmingham Women's and Children's NHS Foundation Trust, UK

Background/Context

Audiology testing under sedation suffered high failure rates due to poor compliance with sedation medicines. This resulted in the vast majority of children requiring general anaesthesia. Causative factors included large volumes of sedative syrup premedication, high frequency of patients with developmental delay or autistic trait in attending patient population.

Problem

This created a high waiting list of 6-12 months for their hearing tests under General Anaesthetic.

Strategy for change

To develop a nurse led sedation service for provision of auditory brainstem response testing.

To scope and identify stakeholders, which included; ward staff, pharmacy, audiology, pre-admissions team and an anaesthetist with a sedation interest.

To identify suitable sedation agents with acceptable characteristics for the specific population. Nasal dexmedetomidine in combination with buccal midazolam delivered by Mucosal Atomization Device (M.A.D) has been very successfully in other hospitals for painless testing and displays suitable characteristics with regard to volume, taste, anxiolytics, sedation and safety, in both UK and worldwide locations (1) (2).

To identify inclusion and exclusion and develop a safe and practical protocol for this patient demographic.

Measure of improvement

Quantitative - Success of testing of those that were sedated, 100% success rate of sedation N=98, with 98% of children having their test completed, failure being due to hearing equipment.

Onset of sedation is approximately 30 minutes and sedated for approximately 1 hr, most children were discharged 30 minutes after waking up and tolerating oral fluids.

Reduction of waiting list of those originally listed for General Anaesthetic aged 1- 8years.

Qualitative -Feedback from families and staff members - generally positive.

Lessons learnt

Identifying stakeholders is key early on to agree end goals and deadlines.

Change in practice – takes time and effort and positivity from project leads.

This project could be expand to other painless testing such as CT/MRI scans, and reduce the waiting list for those listed for General Anaesthetic.

Message for others

Creating a positive change takes time and meeting with stakeholders who have other clinical commitments meant that the project was delayed in its infancy.

The project now runs smoothly once a week for two patients, with scope to expand this in future.

With thanks to Preadmission Team, Audiology Admin Team, Anaesthetic Team

References

- (1)Marra P, Di Stadio A, Colacurcio V, Scarpa A, La Mantia I, Salzano FA, De Luca P. Sedation with Intranasal Dexmedetomidine in the Pediatric Population for Auditory Brainstem Response Testing: Review of the Existing Literature. *Healthcare (Basel)*. 2022 Feb 1;10(2):287.
- (2)Peng K, Wu SR, Ji FH, Li J. Premedication with dexmedetomidine in pediatric patients: a systematic review and meta-analysis. *Clinics (Sao Paulo)*. 2014 Nov;69(11):777-86.