The Use of Super Sedation In Paediatric Audiology

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Introduction

- Sedation is a useful tool for performing ABR/ASSR assessments in the difficult to assess paediatric audiology population.
- Traditional sedation methods include the use of melatonin and/or chloral sedation. General anaesthetic is used where patients are unlikely to swallow or comply with oral sedation. This is much more resource intensive and upsetting for the child!
- Chloral and melatonin methods have a low success rate in the difficult to assess population, due to low compliance with swallowing the sedative orally, or the ability to resist sedation.
- *Dexmedetomidine* also known as '*super sedation'* is gaining popularity as it is administered intranasally as a spray. It is quicker, safer, easier to administer and highly effective.

Method

Aim: To Trial the use of Dexmedetomidine for 4 weeks as an alternative to general anaesthetic, chloral hydrate or melatonin.

- Pilot agreed on the daycare ward, with buy in from a consultant anaesthetist and the daycare team and a SOP was agreed.
- Patients screened for candidacy by Audiovestibular physician/Anesthetists via a telephone consultation. All of these patients were selected from the GA ABR waiting list.

Candidacy Criteria:

- ✓ 2 unsuccessful behavioral attempts (minimum)
- ✓ 3.5-8 years old with a weight of >15kg
- ✓ No severe heart disease, airway structure abnormalities, severe reflux, trachestomy, OSA, respiratory abnormalities, poorly controlled epilepsy, medications I.e beta blockers, anti-hyperintensives

- 31 patients booked over a period of 4 weeks, 4 sessions a weeks, 2 patients per session.
- Anesthetists trained daycare nurses to administer.
- A Recovery nurse was funded for the trial.

Conclusions

- This Pilot demonstrated Dexmedetomidine is a safe, effective tool for children who are difficult to assess behaviorally.
- The parent feedback was very positive, all parents preferred this option to a general anaesthetic.
- Dexmedetomidine is much more cost and time effective than GA ABRs.
- There is much less interference when testing on a daycare ward in comparison to theatre which results in a much quicker ABR assessment.

Challenges

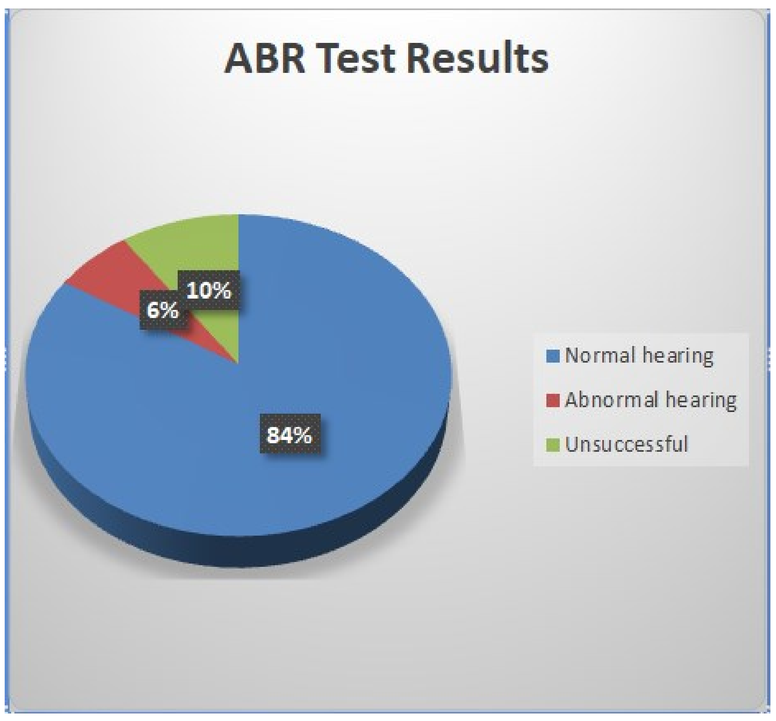
- Prescribing has challenges as the dose is decided according to weight. Some doses need to be adjusted for overweight patients and these will need to be checked by an anaesthetist . Our AVM consultant colleagues may be trained to prescribe taking this into account.
- Dexmedetodine still requires nil by mouth 5 hours prior to administration (water or weak squash are acceptable until 1 hour before). This is very challenging for paediatric patients, therefore we recommend performing the tests in the morning if possible.

GA ABR/Super Sedation Resources Comparison Table

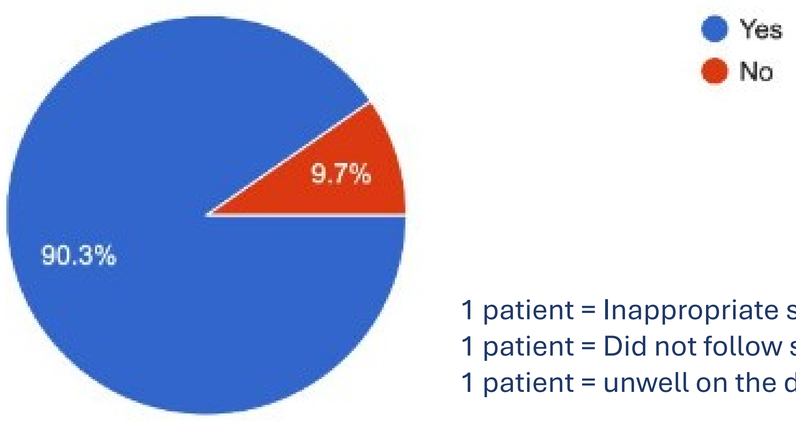
Comparison Table	GA	Super Sedation	Improvement (%)
Patients treated (per month)	4	28	700%
Treatment cost (per patient)	£7,750	£250	97%
Time to clear backlog (No. weeks)	56	4	88%
Location	Theatre	Ward	Theatre capacity

Results

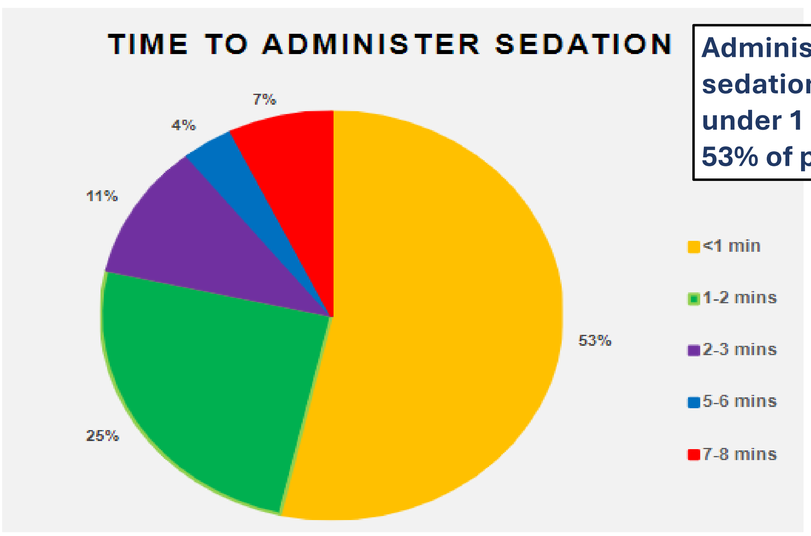
- 26 were successfully assessed had normal hearing at 1&4kHz down to 20dBeHL bilaterally.
- 2 patients had mild conductive unilateral hearing losses.
- 3 patients were unsuccessful, 1 due to poor selection, 1 had not followed starvation recommendations, 1 patient was unwell on the day.
- 1 patient vomited, however they still slept and were assessed. They required a slightly longer stay of on the daycare ward afterwards for monitoring (1-2 hours) and were sent home with signposting on what to do if symptoms reoccur.
- ABR Testing time on average was 20 minutes.



Was the ABR successful? (31 responses)



1 patient = Inappropriate selection
1 patient = Did not follow starvation instructions
1 patient = unwell on the day



Administration of sedation took under 1 minute for 53% of patients!

Patient Feedback

Next Steps!

- Repeat trial in February 2025 taking into account what we have learned and to address any prescribing issues in conjunction with the consultant anesthetist.
- If successful, regular lists to be arranged with an expected reduction in the GA ABR waiting list and better patient experiences.
- For any further advice on setting this up for your service, contact kathryn.knight6@nhs.net

ACKNOWLEDGEMENTS

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