# Brain stem auditory evoked responses in children

The auditory brainstem response (ABR) test has been widely used in childhood.

The test proved to be a highly reliable diagnostic tool when used in assessing “difficult-to-test” patients. It also identified new patients with peripheral auditory abnormality who subsequently received confirming conventional audiological tests. The BER test results correlated well with the impedance measurements, but some rare instances of important discrepancies require further study [1].

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Although Brain stem auditory evoked responses in children is a painless procedure, sedation can be needed.

A study aimed to evaluate the safety and sedation complications applied in pediatric patients during ABR testing.

Medical records of 75 children who underwent ABR testing between 2018 and 2020 were evaluated retrospectively in terms of applicability, safety, and complications of sedation anesthesia.

The ages ranged from 3 to 9 (mean 6.2) years. Comorbidity was detected in 20% (n = 15); 3 had multiple comorbidities, and the most common comorbidity was Down syndrome (4%). The drugs used in sedation anesthesia were midazolam in 81.3% (n = 61), a combination of propofol and ketamine in 14.7% (n = 11), and only propofol in 4% (n = 3) of the patients. Additional drug use was needed in 44% (n = 33). The mean procedure time was 40 (range 30-55) min. The mean anesthesia duration was 45 (range 35-60) min. The mean recovery time was 10 (range 5-15) min. Complications related to anesthesia developed in 4 (5.33%) of the patients; respiratory distress, agitation, cough, and nausea-vomiting were seen in one of the patients, respectively. Complications like bradycardia and respiratory or cardiac arrest were not seen at all.

The rate of sedation complications performed during ABR testing of pediatric patients is quite low. It may be more beneficial to use combinations of sedation drugs instead of using a single sedation drug. Although sedation anesthesia appears to be safe in general, the potentially life-threatening complications of sedative agents should be remembered, especially in children who have comorbidities [2].

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Mokotoff B, Schulmann-Galambos C, Galambos R. Brain stem auditory evoked responses in children. Arch Otolaryngol. 1977 Jan;103(1):38-43. doi: 10.1001/archotol.1977.00780180076010. PMID: 831696.
2)
Urfali S, Urfali B, Sarac ET, Koyuncu O. Safety and Complications of Sedation Anesthesia during Pediatric Auditory Brainstem Response Testing. ORL J Otorhinolaryngol Relat Spec. 2021 Jul 12:1-5. doi: 10.1159/000517156. Epub ahead of print. PMID: 34252904.