



ABR Test Profile in Children with Delayed Speech Language Development and ADHD Age Two to Six Years

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Abstract:

Background: Auditory Brainstem Response (ABR) is an objective measure for evaluating auditory brainstem integrity in children. Abnormal ABR findings have been associated with delayed speech–language development, while children with attention deficit hyperactivity disorder (ADHD) may show subtle auditory processing differences.

Aim: To compare ABR findings in children with delayed speech–language development and ADHD aged 2–6 years.

Methodology: Eighty children (2–6 years) were included: 40 with delayed speech–language development and 40 with ADHD. Click-evoked ABR was recorded bilaterally. Absolute latencies of waves I, III, and V and interpeak latency I–V were analysed. Independent *t*-test was used ($p < 0.05$).

Results: Children with delayed speech–language development showed significantly prolonged wave III (4.20 ± 0.30 ms) and wave V latencies (6.05 ± 0.33 ms) compared to ADHD children (3.95 ± 0.26 ms; 5.70 ± 0.29 ms respectively; $p < 0.01$). Interpeak latency I–V was also significantly increased ($p = 0.002$). Wave I latency showed no significant difference.

Conclusion: Delayed speech–language children exhibit auditory brainstem conduction delay, whereas ADHD children show relatively preserved ABR responses. ABR is useful for differential evaluation and early intervention planning.

Keywords:

Auditory Brainstem Response, Delayed Speech–Language Development, ADHD, Children, Pediatric Audiology.