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OBJECTIVE AUDITORY SCREENING IN NEWBORNS BY AUDITORY BRAIN-STEM RESPONSES (ABR)

Permalink

<https://escholarship.org/uc/item/12w643w6>

Journal

CLINICAL RESEARCH, 27(1)

ISSN

0009-9279

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Publication Date

1979

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Peer reviewed

PERINATOLOGY

● OBJECTIVE AUDITORY SCREENING IN NEWBORNS BY AUDITORY BRAINSTEM RESPONSES (ABR). R.N. Anlie,* S. Sanders,* R.F. Huxtable,** A. Starr*. (intr. by R.F. Huxtable. Department of Pediatrics, University of California, Irvine.

1200 high risk newborns were admitted for intensive care during periods when computer averaged ABRs were performed on 300 selected infants over a 4 year period. A total of 562 tests have been performed on these infants, from birth to 4 years of age. Normative data has been established for preterm newborns with no risk factors other than preterm birth from 34 weeks to term. Infants were tested as early as 24 weeks of gestation. Abnormal responses were recorded in 112 of the infants, giving an incidence of 37% of either peripheral or neural hearing loss in this selected group of high risk infants. Several risk factors were apparent: perinatal asphyxia alone, with either low Apgar scores (1 to 5 at 1 and 5 min.) or combined with multiple measurements of pO₂ below 30mm Hg or pH below 7.2, systemic sepsis, congenital infection (esp. CMV), hydrocephalus before shunting, and intracranial hemorrhage. Hearing loss was confirmed in many infants at follow-up. Many infants showed improved responses, often to normal values, when retested several days to twelve months later. These results indicate that ABRs provide an objective screening test of both peripheral and sensorineural auditory function in newborns. They further show that all infants with abnormal responses must be retested before permanent dysfunction can be ascertained. It is also evident that the incidence of temporary and permanent auditory dysfunction in newborns requiring intensive care is much higher than previously estimated and that ABRs should be done as a screening procedure on all these infants.