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

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OBJECTIVE AUDITORY SCREENING IN NEWBORNS BY AUDITORY BRAINSTEM
(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 in-
fants 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 pre-
term birth from 34 weeks to term. Infants were tested as early as 24
weeks of gestation. Abnormal responses were recorded in 112 of the in-
fants, giving an incidence of 37% of either peripheral or neural hear-
ing 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 in-
fection (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 dys-
function can be ascertained. It is also evident that the incidence of
temporary and permanent auditory dysfunction in newborns requiring in-
tensive care is much higher than previously estimated and that ABRs
should be done as a screening procedure on all these infants.