The aim of the study was to establish the reliability and utility of hearing screening using brainstem auditory evoked potentials in high risk neonates. The project consisted of a 9 year prospective investigation of 405 neonates admitted to the Special Care Baby Unit, Royal Maternity Hospital, Belfast in the period October 1982 to March 1987 (mean follow-up 5 years). Outcome measures were type and severity of hearing impairment and mortality. The incidence of bilateral severe sensorineural impairment for Northern Ireland in the period of the study was .96/1000 live births. The incidence of severe bilateral sensorineural impairment among graduates from the Special Care Baby Unit was 12.5/1000 live births. The incidence of all forms of hearing impairment for the unit requiring intervention was 45/1000 live births. The sensitivity of the screening method was 100%, the specificity 88%. It has been shown that if the procedure was introduced into routine clinical practice the mean age at diagnosis for all children with severe perinatal hearing impairment would be 11 months (median 1 month). This compares with the present Health Visitor screening service in which the mean age at diagnosis is 23 months (median 19 months) (mean difference 10 months, CI 6 to 16 months P<.0001).

Submission no.120

118. STEADY-STATE EVOKED POTENTIALS (SSEPs): TUESDAY 22 SEPTEMBER - 16.15 AN ACCURATE, AUTOMATED, FREQUENCY SPECIFIC METHOD FOR OBJECTIVELY ASSESSING HEARING THRESHOLDS Burton M'J1, Rance G2, Rickards F W2, Cohen L T2, Clark G M2
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The determination of hearing thresholds in young children and some adults is impossible using conventional behavioral audiometry. The development of objective methods of assessment for use in such patients is highly desirable. SSEPs are periodic potentials recorded from the scalp and simultaneously analyzed. Stimuli are amplitude and frequency modulated pure tones. A system has been developed which allows the presence of such a response to be automatically detected and the technique thus permits an objective, frequency specific assessment of hearing thresholds to be made in sleeping and awake subjects (1).

This paper investigates the use of SSEPs in determining thresholds in young profoundly deaf children who are candidates for cochlear implants. Responses in such patients are compared with those obtained in normal adults, neonates and experimental animals.

Results indicate that the SSEP can provide a consistent and reliable measure of threshold and the technique appears to have a number of advantages over the brainstem response: automated response detection removes any subjective element of threshold determination, higher levels of stimulus presentation are possible, low frequency threshold determination is more accurate and the testing procedure is quicker.

Submission no.168
Author/s: Burton, Martin J.; Rance, G.; Rickards, Field W.; Cohen, L. T.; Clark, Graeme M.

Title: Steady-state evoked potentials (SSEPS): an accurate, automated, frequency specific method for objectively assessing hearing thresholds [Abstract]

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File Description: Steady-state evoked potentials (SSEPS): an accurate, automated, frequency specific method for objectively assessing hearing thresholds [Abstract]