

THE EFFECT OF CLICK AND LEVEL SPECIFIC (LS) CE-CHIRP ON ECOCHG FINDINGS IN NORMAL HEARING ADULTS

Nurul Farhana binti Abdullah, Sarah binti Rahmat, Ahmad Aidil Arafat Dzulkarnain

Department of Audiology and Speech Language Pathology, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Jalan Sultan Ahmad Shah, 25200, Kuantan, Pahang, Malaysia

ABSTRACT

Introduction: Electrocochleography (ECoChG) is a test that measures cochlea and auditory nerve electrical potential, and commonly used in Meniere's disease diagnosis. Click stimulus is commonly used to elicit robust Action potential (AP) waveform in EcochG due to its rapid onset. Level Specific (LS) CE-Chirp is another potential stimulus for EcochG testing which has never been studied before, but its use in Auditory Brainstem Response (ABR) testing has produced larger wave I and III amplitude as compared to the Click. This study aims to evaluate the effect of LS CE-Chirp and Click on ECoChG findings in normal hearing adults.

Methods: The study was conducted in IIUM Hearing and Speech Clinic, and has involved 16 normal hearing subjects. Extra-tympanic ECoChG using tiptrode electrode was recorded using Click and LS CE-Chirp stimulus at 90dBnHL via horizontal montage for each subject. The presence of three main components of ECoChG; cochlear microphonic (CM), summing potential (SP), and AP was descriptively analysed. The amplitude and latency of the SP and AP; SP/AP area and amplitude ratio were compared between the LS CE-Chirp and Click recording using Repeated Measure ANOVA (RM ANOVA).

Results: All of CM, SP and AP components were observed in all subjects for both Click and LS CE-Chirp stimulus. There was no significant different of the amplitude and latency SP and AP; SP/AP area and amplitude ratio between Click and LS CE-Chirp ($p > 0.05$).

Conclusions: This study showed that LS CE-Chirp gave similar ECoChG findings as Click did, and may serve as another potential stimulus for EcochG testing.

KEYWORDS: Electrocochleography, extra-tympanic, tiptrode, Click, Level Specific , CE-Chirp

Corresponding author: Sarah Rahmat (sarahrahmat@iium.edu.my)