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THITIMA HANCHOKCHAISKUL: A STUDY OF NORMATIVE CHARACTERISTICS OF AUDITORY BRAINSTEM RESPONSE TO BONE–CONDUCTION IN NORMAL NEWBORNS. THESIS ADVISORS: CHEAMCHIT THAWIL, B.Sc., M.A., SIRIPARN SRIWANYONG, M.B.A., M.Sc., URAIRAT SUBARNVILAS, M.Sc., 101 P. ISBN 974-664-598-6

The purpose of this research was to study the normative characteristics of Auditory Brainstem Response to bone-conduction (BC- ABR) obtained from normal newborns, aged 48-72 hours, who were not in high risk register by using fifteen males and fifteen females. The birth weight for the male group was 3, 162 grams and for the female group was 3, 214 grams. All of the subjects passed the screening using TEOAEs test in both ears. The instrumentation used in this study was SMART EP. The clicks stimuli were presented at the rate of 7.1 per second. The intensity was attenuated at 50, 40, and 30 dBnHL and down to threshold. The filter setting was 30-3000 Hz with alternation polarity.

The results of this study revealed that the morphology of BC- ABR in the higher intensity was clearer than the morphology of BC- ABR in the lower intensity. Wave I and wave V could be identified when the higher intensity (≥ 30 dBnHL) was used. The mean BC- ABR threshold was 26.92 (± 3.46) dBnHL. Also, there was no significant difference in BC- ABR threshold between gender and ear differences. The mean latencies of wave I at 50, 40, and 30 dBnHL were 2.6815 (± .3031), 3.2895 (±.3098), and 4.2785 (± .3152) milliseconds, respectively. The mean latencies of wave V at 50, 40, and 30 dBnHL were 7.9705 (± .3047), 8.8187 (± .3239), and 9.9762 (± .3294) milliseconds, respectively. The signal intensity had significant effects on the latency of BC- ABR and the effect of intensity on latency change was larger for low intensity than for high intensity. In addition, the relationships of wave I and wave V latency- intensity functions were non-linear. The results of the mean latencies of wave I and wave V at 50, 40, and 30 dBnHL in male and female subjects and ear differences were not significant difference.

The findings of this study can be used as a guideline for appropriate BC stimulus levels for screening or assessment of newborns.