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PROGRAM KİTABI

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Analgesia Nociception Index: Heart Rate Variability Analysis of Emotional Status

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BACKGROUND AND AIM: Autonomic Nervous System (ANS) variations are influenced by emotion regulation processes. The way an individual pass from a state of alert in the case of emotional situation to a state of calm is closely coupled with the ANS flexibility. Analgesia/Nociception Index (ANI) have been developed for real time pain measurement during surgical procedure under general anesthesia.1,2 The index is based on heart rate variability (HRV) and constitutes a measure of parasympathetic tone. In this paper, we hypothesized that this index could be used as a tool to investigate the process of emotional regulation of a human subject.

MATERIAL AND METHODS: After Ethics Committee approval and written informed consents twenty volunteers were recruited for the study, which evaluated ANI response to emotional stimulus. An emotional stimulus was obtained through a 60 second music sound record from the song "Ala Gözlerini Sevdiğim Dilber", performed by the Turkish rock band Badem. ANI measurements were obtained before the song presentation (Tpre), at the end of the record presentation (T0), and each minute thereafter until the end of the 5 minute observation period (T1-T5). Data analysis was performed using SPSS 15.0.

RESULTS AND DISCUSSION: Twenty participants were investigated; 10 males and 10 females. The mean age of the participants was 17.0±0.9 (min:16, max:20). ANI measurements were significantly lower in T0 and T3 compared with Tpre (P=0.009). The differences between other values were not statistically significant. In this study we have presented the effects of emotional stimulation on ANS, which was evaluated by HRV analysis. Previously De jonckheere et al. have presented the application of HRV index in evaluation of ANS changes related to negative emotional stimulus generated by visual input.3 Our study represents this domain of ANS evaluation from another perspective, using an auditory input.

CONCLUSION(S): ANI can be used for assessment of parasympathetic changes related to emotional state of conscious patients.