

Ocena narządu słuchu u dzieci z przewlekłą niewydolnością nerek

Hearing evaluation in chronic renal failure children

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Summary

Chronic renal failure (CRF) causes a lot of systemic side-effects, among them: neurological and otological complications. In present study hearing evaluation was made in young patients, using distortion product otoacoustic emissions (DPOAEs) and auditory brainstem responses (ABR). **The aim of study:** (1) objective assessment of hearing organ activity in CRF children, (2) localization of hearing organ part involved in CRF, (3) establishing best parameters of ipsilateral stimulation in DPOAEs for clinical use. **Materials and methods:** Hearing acuity was assessed in 22 CRF children ranging in age from 9 to 17 years and 18 healthy children ranging in age from 10 to 18 years. At first pure tone audiometry and tympanometry were evaluate. Only patients with normal middle ear condition and hearing threshold better than 30 dB HL were put forward further investigations. Objective assessment of hearing condition included: (1) DPOAEs using DP-gram format. Two simultaneous pure-tone signals (primaries) were presented to the ear at two different frequencies (f_1 and f_2 , where $f_2 > f_1$) and the $2f_1 - f_2$ were analyzed. Five pairs of non equal level and L2 were used L1 and L2: panel A1: L1 = 65 and L2 = 60 dB SPL, panel A2: L1 = 63 and L2 = 55 dB SPL, panel A3: L1 = 59 and L2 = 45 dB SPL, panel A4: L1 = 55 and L2 = 35 dB SPL, panel A5: L1 = 51 and L2 = 25 dB SPL; (2) ABR investigation using click stimulus, at 90 dB nHL level. Wave I, III, V latencies and intervals I-III, III-V, I-V were evaluated. Our results revealed significantly lower mean DPOAEs amplitudes in CRF children when compare to healthy children, at all frequencies measured. No differences in ABR evaluation were observed. Most optimal DPOAEs parameters in clinical use seem to be panel A1, A2 and A3 of level L1 and L2.