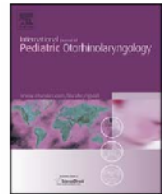




Contents lists available at ScienceDirect

International Journal of Pediatric Otorhinology

journal homepage: www.elsevier.com/locate/ijporl



Auditory brain stem response and otoacoustic emission results in children with end-stage renal disease

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ARTICLE INFO

Article history:

Received 24 August 2010

Received in revised form 19 December 2010

Accepted 21 February 2011

Available online 21 March 2011

Keywords:

End stage renal disease

Pediatrics

Hemodialysis

Auditory brain stem response

Otoacoustic emission

ABSTRACT

Background: Abnormalities in auditory system are frequent in patients with end stage renal disease (ESRD). There is not yet any consensus for the effect of renal failure and hemodialysis on auditory complications. The aim of this study was to evaluate the auditory abnormalities in pediatric ESRD patients undergoing long term hemodialysis and compare the results with those of nondialytic chronic renal failure (CRF) children and controls.

Methods: Children aged 1–16 years were evaluated in three groups: 25 ESRD patients undergoing hemodialysis, 25 nondialytic patients with CRF, and 25 age and sex-matched normal counterparts. Patients with history of otological diseases, ear trauma, diabetes mellitus, receiving ototoxic drugs and syndromes with hearing abnormalities were excluded. The auditory brainstem response (ABR) and otoacoustic emission (OAE) were tested in all subjects. Frequency of cases with abnormal findings was compared between the groups.

Results: The ABR testing was abnormal in 11 (44%) dialytic patients with normal results in all nondialytic CRF cases and controls ($p < 0.001$). The OAE testing was abnormal in all dialytic patients with abnormal ABR testing results (44%), in 1 (4%) nondialytic CRF patient and in no controls ($p < 0.001$). There were no significant differences with regard to age, gender, height, weight, blood pressure, serum levels of blood urea nitrogen (BUN), creatinine, sodium, and potassium, glomerular filtration rate (GFR), duration of dialysis and dialysis adequacy between dialytic patients with and without abnormal results of ABR/OAE testing.

Conclusion: Sensorineural hearing loss is rare among nondialytic pediatric patients with CRF but very common in ESRD children undergoing long term dialysis.

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1. Introduction

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0165-5876/\$ – see front matter © 2011 Elsevier Ireland Ltd. All rights reserved. doi: 10.1016/j.ijporl.2011.02.020