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Distortion product otoacoustic emission for the screening of cochlear damage in children treated with cisplatin.

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Source

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Abstract

OBJECTIVES/HYPOTHESIS:

To detect subtle hearing changes by measuring otoacoustic emissions in patients treated with a first dose of cisplatin.

STUDY DESIGN:

Prospective study.

METHODS:

We recruited 26 patients (mean age at treatment, 11.3 years) into this prospective study conducted at a tertiary academic referral center. Audiograms and transient-evoked otoacoustic emissions (TEOAEs) and **distortion**-**product** otoacoustic emissions (DPOAEs) were measured before and after the first dose of cisplatin.

RESULTS:

Baseline readings were compared with those recorded after the administration of the first dose of cisplatin. Two patients showed a loss of TEOAEs at high frequencies above 4 kHz, and this was consistent with the

25-dB hearing loss of the high frequencies detected in their audiograms; there was a significant threshold shift for DPOAEs at a frequency >3 to 4 kHz ($P < .05$).

CONCLUSIONS:

DPOAE testing appears to be a more sensitive method to detect cochlear damage than conventional pure-tone audiometry. Our results suggest that the measurement of DPOAE thresholds is a useful approach to detect the early auditory changes induced by cisplatin therapy