Platinum-Induced Ototoxicity in Children: Comparison of Different Ototoxicity Classifications

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Introduction
Cisplatin and carboplatin are important antineoplastic agents which are used for treatment of various paediatric malignancies. Unfortunately some side effects like ototoxicity and nephrotoxicity hinders their usage of higher doses. Hearing loss related to these agents is irreversible and occurs at cumulative doses. Moreover these children who have been exposed to higher doses can be candidate for cochlear implantation. The first classification to describe ototoxicity was Brock’s classification. Other ototoxicity classifications have been established to overcome some weak points of Brock’s classification afterwards. The aim of this study is to evaluate frequency and intensity of hearing impairment in children who received cisplatin/carboplatin treatment according to six different ototoxicity classifications and to audiologically examine these 6 different ototoxicity classification and to discuss their suitability.

Material and Method
Data of 87 children who received cisplatin/carboplatin therapy in Dokuz Eylül University School of Medicine Pediatric Oncology Department were respectively analysed. All patients were evaluated by otoscopic examination, pure tone audiometry, otoacoustic emission and acoustic immittance before and minimum 3 months after treatment. Ototoxicity seen in these patients was evaluated by NCI, Brock, Muenster, ASHA, Chang, and SIOP Boston classifications.

Results
The mean age was 11.2 (3-17 years) years old.

Consistency of these classifications was analysed by intraclass correlation test and it was found that these tests were highly consistent with each other (ICC: 0.834).

Conclusion
While treating paediatric oncology patients toxicity related to therapy and life quality are important factors to not underestimate. For this purpose various ototoxicity classifications has been described. It seems that all these classification were in high consistencies with each other.