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Letter to the Editor

Letter to the Editor regarding article by Yücedağ et al. "The Effects of Nonylphenol on Hearing in Rats"

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Dear Editor,

I read with great interest the recent study by Yücedağ et al. [1] entitled "The Effects of Nonylphenol on Hearing in Rats." It needs to be specified in the article if the hearing levels of the rats were evaluated before the study or not.

Another point I would like to emphasize is that the hearing levels of the rats after the application of ethanol and nonylphenol were evaluated by distortion product otoacoustic emission (DPOAE). Recent studies suggest that otoacoustic emissions are produced by the electromobility of the outer hair cells (OHCs); however, retrocochlear and sensory pathologies caused by inner hair cell (IHC) damage do not produce DPOAE [2-6]. There are some drugs that cause severe IHC loss without OHC damage and cochlear nerve loss in the absence of hair cell loss [7-13]. There are no other studies demonstrating the otologic effects of nonylphenol. The effects of nonylphenol on hair cells and the cochlear nerve are unclear. IHC damage and retrocochlear pathologies cannot be evaluated by DPOAE; therefore, the hearing levels of the rats should have been evaluated by auditory brainstem response instead of DPOAE.

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REFERENCES

1. Yücedağ F, Okur E, Uğuz C, Zemheri F, Kuzu S, Ayçiçek A, et al. The Effects of Nonylphenol on Hearing in Rats. Int Adv Otol 2014; 10: 76-9. [CrossRef]
2. Kemp DT. Stimulated acoustic emissions from within the human auditory system. J Acoust Soc Am 1978; 64: 1386-91.[CrossRef]
3. Kemp DT. Otoacoustic emissions, travelling waves and cochlear mechanism. Hear Res 1986; 22: 95-104. [CrossRef]
4. Manley GA. Frequency spacing of otoacoustic emissions. A possible explanation. In: Mechanisms of Hearing. Monash University Press. 1983; 36-9.
5. Brownell WE. Outer hair cell electromotility and otoacoustic emissions. Ear Hear 1990; 11: 82-92. [CrossRef]
6. Hall JW, Baer JE, Chase PA, Schwaber MK. Clinical application of otoacoustic emissions: what do we know about factors influencing measurement and analysis? Otolaryngol Head Neck Surg 1994; 110: 22-38. [CrossRef]
7. Wake M, Takeno S, Ibrahim D, Harrison R, Mount R. Carboplatin ototoxicity: an animal model. J Laryngol Otol 1993; 107: 585-9. [CrossRef]
8. Takeno S, Harrison RV, Mount RJ, Wake M, Harada Y. Induction of selective inner hair cell damage by carboplatin. Scanning Microsc; 8: 97-106.
9. Mount RJ, Takeno S, Wake M, Harrison RV. Carboplatin ototoxicity in the chinchilla: lesions of the vestibular sensory epithelium. Acta Otolaryngol Suppl 1995; 519: 60-5. [CrossRef]
10. Trautwein P, Hofstetter P, Wang J, Salvi R, Nostrant A. Selective inner hair cell loss does not alter distortion product otoacoustic emissions. Hear Res 1996; 96: 71-82. [CrossRef]
11. Jock BM, Hamernik RP, Aldrich LG, Ahroon WA, Petriello KL, Johnson AR. Evoked-potential thresholds and cubic distortion product otoacoustic emissions in the chinchilla following carboplatin treatment and noise exposure. Hear Res 1996; 179-90. [CrossRef]
12. Schmiedt RA, Okamura HO, Lang H, Schulte BA. Ouabain application to the round window of the gerbil cochlea: a model of auditory neuropathy and apoptosis. J Assoc Res Otolaryngol 2002; 3: 223-33. [CrossRef]
13. Yuan Y, Shi F, Yin Y, Tong M, Lang H, Polley DB, Liberman MC, Edge AS. Ouabain-induced cochlear nerve degeneration: synaptic loss and plasticity in a mouse model of auditory neuropathy. J Assoc Res Otolaryngol 2014; 15: 31-43. [CrossRef]

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