

ABSTRACT

Otoacoustic emission testing is a simple non-invasive test that can be performed to analyse the preclinical changes in the outer hair cells of patients. The ototoxic potentials of snake venom and organophosphate compounds have been well documented in studies. The main mechanism for this is found to be generation of reactive oxygen species and by depletion of NADPH which is necessary for normal functioning of the cell. Repeated follow up of patient with similar testing helps us to pick up further deterioration in the outer hair cell function.

Moreover, as the distortion product Otoacoustic emission starts decreasing even before the decrease in hearing threshold becomes clinically apparent. It can also help us to predict the future hearing loss and initiate the preventive lifestyle changes that may be adopted to limit the outer hair cell damage.

The aim of this study is to identify the cochlear changes by measuring distortion product Otoacoustic emission in the patients who have deliberately ingested organophosphate poisoning and accidental neurotoxic snake bite. This would help to predict the hearing loss in future in such patients and institute early rehabilitative measures.

In our study we have selected 25 persons who had ingested organophosphate poison and 25 patients who were victims of neurotoxic snake bites as cases. We also took 50 normal persons, matched for the inclusion and exclusion criteria, as

control. Otoacoustic emission testing was done for all the hundred persons, which consists of both these groups.

The observations and results were analysed and Otoacoustic emission was found to be absent in 90 % of cases and present in 10 % of cases whereas it was found to be present in 86 % of controls and absent in only 14 % of controls. The results of the above observations were analysed were compared and chi square analysis was done and it was found to be a statistically significant one.

Thus the above study clearly reflects the ototoxic effects of neurotoxic snake venom and organophosphate pesticides over outer hair cells. Hence the clinician should be alert to effects of these compounds over cochlea and needs to conduct a comprehensive assessment of the auditory system periodically on these patients in order to predict the hearing loss in future and institute early and appropriate rehabilitative measures.