

Hearing loss and trace elements Fe²⁺ and Zn²⁺ in the perilymph.

Xu M1, Fan Y, Gao Z, Chen J, Li J.

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Author information : 1Department of Otolaryngology, Second Affiliated Hospital, Xi'an Medical University, China.

Abstract

Fe²⁺ and Zn²⁺ levels in perilymph of guinea pigs injected with gentamicin (GM) were examined and compared with the corresponding concentrations in CSF, serum and hairs. We observed a preventive and therapeutic action of sea buckthorn oil and injectio gastrodini to hearing loss. The results showed that: (1) the Fe²⁺ content in GM-injected guinea pigs was increased in perilymph and hairs; it was decreased after prevention and treatment, but there was no obvious change in CSF and serum; (2) the Zn²⁺ content in perilymph and CSF was increased in GM-injected guinea pigs. It rose further after prevention, but in serum and hairs it decreased. The results indicate that the ototoxic reaction to GM is related to the rise of the Fe²⁺ content in perilymph. The elevation of Zn²⁺ is a compensatory reaction. The changes in the chemical composition of perilymph are more important than those in CSF, serum and hairs for pathological changes of the cochlea. **Sea buckthorn oil can prevent GM ototoxicity.**