

Abstract ▾

Send to: ▾

[Laryngoscope](#). 2000 Sep;110(9):1522-7.

## Vestibular and cochlear ototoxicity of topical antiseptics assessed by evoked potentials.

Perez R<sup>1</sup>, Freeman S, Sohmer H, Sichel JY.
 Author information

<sup>1</sup>Department of Otolaryngology and Head and Neck Surgery, Shaare Zedek Medical Center, Hadassah University Hospital, Jerusalem, Israel.

### Abstract

**OBJECTIVES/HYPOTHESIS:** To evaluate and compare the effect of chlorhexidine gluconate, povidoneiodine, and alcohol-three antiseptics used before ear surgery-on the function of the vestibular and cochlear parts of the sand rat's inner ear. The assessment of damage is based on the recording of vestibular evoked potentials (VsEPs) and auditory brainstem response (ABR).

**STUDY DESIGN:** Prospective controlled animal study.

**METHODS:** Fat sand rats were randomly assigned to five different groups, each receiving topical application of a different agent: saline (control), gentamicin (ototoxic control), chlorhexidine, povidone-iodine, and alcohol. Right-side total labyrinthectomy was performed, and a polyethylene tube was inserted into the left (contralateral) middle ear. After baseline recordings were taken of VsEPs and ABR, each animal received five consecutive daily applications of the specific agent into the left middle ear. Three days after the fifth application, evoked potential recordings (VsEPs and ABRs) were repeated and compared with baseline measurements.

**RESULTS:** Administration of saline affected neither VsEPs nor ABR. In contrast, as expected, neither of these responses could be recorded after gentamicin application. After application of chlorhexidine all waves disappeared in all sand rats. Alcohol caused the waves to disappear in some of the animals only. Povidone-iodine did not affect VsEP recordings and had only a small effect on ABR.

**CONCLUSIONS:** Chlorhexidine and alcohol had a clear toxic effect on the vestibular and cochlear function of the inner ear of the sand rat, whereas povidone-iodine did not. Thus, taking into consideration that this is an animal study, it appears that povidone-iodine might be preferable to the other agents tested in disinfecting ears with a perforated tympanic membrane.

PMID: 10983954 [PubMed - indexed for MEDLINE]






[PubMed Commons](#)
[PubMed Commons home](#)
 0 comments

[How to join PubMed Commons](#)

### Full text links



### Save items


 Add to Favorites
 

### Similar articles



The effect of hydrogen peroxide applied to [Laryngoscope. 2003]

The effect of topically applied antimycotic [Laryngoscope. 2013]

Inner ear changes with intracochle [Laryngoscope. 2004]

**Review** Use of evoked Basic Clin Physiol Pharmacol...

**Review** Development of inner Basic Clin Physiol Pharmacol...

[See reviews...](#)
[See all...](#)

### Cited by 2 PubMed Central articles



Ototoxicity of different dian J Otolaryngol Head Neck...

Optimal irrigation and debrideme [J Arthroplasty. 2011]

### Related information



PubChem Compound (MeSH Keyword)

PubChem Substance (MeSH Keyword)

Cited in PMC

Cited in Books

### Recent Activity


[Turn Off](#) [Clear](#)

-  [Vestibular and cochlear ototoxicity of topical](#) PubMed
-  [A combination povidone-iodine 0.4%/dexametl](#) PubMed
-  [A controlled trial of povidone-iodine as](#) PubMed
-  [Control of the amount of free molecular iodine](#) PubMed
-  [Occurrence and susceptibilities to](#)

[See more...](#)

You are here: [NCBI](#) > [Literature](#) > [PubMed](#)

[Write to the Help Desk](#)

**GETTING STARTED**

- [NCBI Education](#)
- [NCBI Help Manual](#)
- [NCBI Handbook](#)
- [Training & Tutorials](#)
- [Submit Data](#)

**RESOURCES**

- [Chemicals & Bioassays](#)
- [Data & Software](#)
- [DNA & RNA](#)
- [Domains & Structures](#)
- [Genes & Expression](#)
- [Genetics & Medicine](#)
- [Genomes & Maps](#)
- [Homology](#)
- [Literature](#)
- [Proteins](#)
- [Sequence Analysis](#)
- [Taxonomy](#)
- [Variation](#)

**POPULAR**

- [PubMed](#)
- [Bookshelf](#)
- [PubMed Central](#)
- [PubMed Health](#)
- [BLAST](#)
- [Nucleotide](#)
- [Genome](#)
- [SNP](#)
- [Gene](#)
- [Protein](#)
- [PubChem](#)

**FEATURED**

- [Genetic Testing Registry](#)
- [PubMed Health](#)
- [GenBank](#)
- [Reference Sequences](#)
- [Gene Expression Omnibus](#)
- [Map Viewer](#)
- [Human Genome](#)
- [Mouse Genome](#)
- [Influenza Virus](#)
- [Primer-BLAST](#)
- [Sequence Read Archive](#)

**NCBI INFORMATION**

- [About NCBI](#)
- [Research at NCBI](#)
- [NCBI News](#)
- [NCBI FTP Site](#)
- [NCBI on Facebook](#)
- [NCBI on Twitter](#)
- [NCBI on YouTube](#)

National Center for Biotechnology Information, U.S. National Library of Medicine  
 8600 Rockville Pike, Bethesda MD, 20894 USA  
[Policies and Guidelines](#) | [Contact](#)

