

Continuing Education

Drug-Induced Ototoxicity

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Learning Objectives:

After this article, the reader should be able to...

- Define ototoxicity and describe the risk factors
- Identify the most common classes of ototoxic medications
- Discuss the different mechanisms of ototoxicity
- Develop a patient-specific monitoring plan
- Refer a patient to additional resources if needed

1. **What location of the ear is most affected by ototoxicity?**
 - a. Pinna
 - b. Vestibular Labyrinth
 - c. Auricle
 - d. Tympanic Membrane
 - e. Ossicles
 2. **Which of the following are risk factors for ototoxicity?**
 - a. Age extremes (very young or very elderly)
 - b. Daily dosage, duration and route of ototoxic drug administration
 - c. Long-term exposure to ototoxic agent (total cumulative dose)
 - d. Pregnancy
 - e. All of the above
 3. **Which of the following medications is not associated with ototoxicity?**
 - a. Aminoglycosides
 - b. Quinine
 - c. Salicylates
 - d. Loop diuretics
 - e. Thiazide diuretics
 4. **T/F All patients with ototoxicity experience complete hearing loss?**
 - a. True
 - b. False
 5. **Which are appropriate audiologic monitoring exams?**
 - a. The basic audiologic assessment
 - b. High-frequency audiometry (HFA)
 - c. Otoacoustic emission (OAE) measurement
 - d. None of the above
 - e. All of the above
 6. **Which pairing are the most common adverse scales for measuring ototoxicity?**
 - a. Brock's Hearing Loss Grades & Common Toxicity Criteria Manual (CTCM)
 - b. Common Terminology Criteria for Adverse Events (CTCAE) & Brock's Hearing Loss Grades
 - c. Common Terminology Criteria for Adverse Events (CTCAE) & Button's Hearing Grade
 - d. Common Toxicity Criteria Manual (CTCM) & Button's Hearing Grade
 7. **Which of the following treatment options is recommended for drug-induced ototoxicity?**
 - a. OTC eardrops such as Ring Relief®, Ring STOP®, Tinnitus No More®, or Similasan Ear Relief®
 - b. Removing the offending agent as soon as ototoxicity is suspected
 - c. At least three months of auditory rehabilitation
 - d. Having tympanostomy tubes, myringotomy tubes, ventilation tubes, or PE (pressure equalization) tubes inserted in ears
 - e. All of the above
 8. **Which of the following is an American Speech–Language–Hearing Association criteria to identify significant ototoxic change?**
 - a. 10 dB decrease in pure-tone threshold at one frequency
 - b. 5 dB decrease at 2 adjacent frequencies
 - c. Patient reported ringing in ears for at least three months
 - d. Continuous salicylate use for six months
 - e. Loss of response at three consecutive test frequencies
 9. **Which of the following are currently being researched to prevent ototoxicity?**
 - a. Vancomycin
 - b. OTC eardrops such as Ring Relief®, Ring STOP®, Tinnitus No More®, or Similasan Ear Relief®
 - c. D-methionine
 - d. Metformin
 - e. Fish oil
 10. **Which of the following are good strategies when communicating to patients with hearing loss?**
 - a. Speak at close range (within 3 feet)
 - b. Speak slowly and distinctly
 - c. Maintain good eye contact
 - d. Reduce or eliminate background noise
 - e. All of the above
-

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Please circle your answers (one answer per question)					
1.	A	B	C	D	E
2.	A	B	C	D	E
3.	A	B	C	D	E
4.	A	B			
5.	A	B	C	D	E
6.	A	B	C	D	
7.	A	B	C	D	E
8.	A	B	C	D	E
9.	A	B	C	D	E
10.	A	B	C	D	E

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Please rate the following items on a scale from 1 (poor) to 4 (excellent).

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|-----------------------------------|---|---|---|---|
| 1. Overall quality of the article | 1 | 2 | 3 | 4 |
| 2. Relevance to pharmacy practice | 1 | 2 | 3 | 4 |
| 3. Value of the content | 1 | 2 | 3 | 4 |

Please answer each question, marking whether you agree or disagree.

4. This course met the learning objectives. Agree Disagree
5. The article did not promote a particular product or company. Yes No

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The information presented (check all that apply):

6. Reinforced my current practice/treatment habits Will improve my practice/patient outcomes
 Provided new ideas or information I expect to use Adds to my knowledge
7. Will the information presented cause you to make any changes in how you do your job? Yes No
8. How committed are you to making these changes?
 (Not committed) 1 2 3 4 (Very committed).
9. Do you feel future activities on this subject matter are necessary and/or important? Yes No

Follow-Up

As part of our ongoing quality-improvement effort, we would like to be able to contact you in the event we conduct a follow-up survey to assess the impact of our educational interventions on professional practice. Are you willing to participate in such a survey?

- Yes No



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