The Value of Audiologists in the Care Schedule of Patients Receiving Ototoxic Medications

ASHA American Speech-Language-Hearing Association

Many life-preserving medications carry a risk of ototoxicity, or damage to the inner ear. The side effects can have a lasting impact on communication ability and quality of life.

Ototoxicity by the Numbers

200+ ototoxic medications on the market[1]

500,000 cases of hearing loss (HL) per year from platinum-based chemotherapy drugs[2]

50,000 cases of preventable HL per year from aminoglycosides[3]

Side Effects are Common.

50%–55% of people experience HL[1]

40%–68% experience tinnitus[2,3]

Up to 50% experience vestibular symptoms[4]

Individuals Exposed to Ototoxic Drugs May Experience...

- Reduced quality of life (QoL)[5,6,7,8]
- Cognitive dysfunction[6]
- Fatigue[6]
- Depression[6]
- Further long-term hearing loss deterioration[9,10]
- Decreased academic, communication, social, and transition outcomes in children[11,12,13]

Ototoxic monitoring (OM) care schedules are inconsistent.

- Audiologic assessment at key milestones is essential, yet it's only performed...[1,2]
  - **24%–39%** of the time at baseline,
  - **4%** of the time during treatment, and
  - **5%–26%** of the time following treatment.
- **24%-34%** of patients report complaints of HL or tinnitus, but **only 5%-8%** obtain an audiogram to assess the symptoms.[17]

Audiologists' early identification of ototoxicity can minimize HL progression and enable timely access to care, reducing the long-term impact.

Audiologists can administer...

Specialized Assessments

- **Extended high-frequency testing:** detects ototoxicity nearly **2x** as often as testing the conventional frequencies, signaling HL before it impacts the regions critical for speech understanding.[1]
- **Sensitivity Range for Ototoxicity (SRO) screening:** detects ototoxicity **90%** of the time.[2]
- **Otoacoustic Emissions (OAE) testing:** detects changes in inner-ear hair cell function as a sign of ototoxicity, useful for patients who cannot reliably perform behavioral testing.[3]

Consistent OM

- Comprehensive evaluation before, during, and after treatment.
- Long-term follow-up to monitor for delayed-onset or progressive HL.
- Remote testing methods resulting in increased adherence to OM **(83.3%)** compared with usual (in-office) care **(4.5%)**.[4]

Aural Rehabilitation (AR)

Education and counseling on...

- possible ototoxic effects (e.g., HL, tinnitus, balance dysfunction),
- increased risk of hearing loss from noise exposure, and
- communication strategies and modifications.

Fitting of...

- amplification and hearing assistive technology, and/or
- hearing protective devices.

Collaboration is key

Physicians are willing to work with audiologists to monitor for ototoxicity and adjust treatments.

- **100%** recognize that ototoxicity poses a problem.[4]
- **47%** rate ototoxicity as having a moderate to severe impact on quality of life and functioning.[4]
- **65%–100%** would consider modifying or changing treatment plans in the event of ototoxicity.[19,20]

Benefits of Audiologist-Led Ototoxic Monitoring:

- Increased adherence to OM plan[24]
- **5x more** likely to receive audiologic follow-up with the presence of a baseline audiogram[18]
- **30% higher** uptake of AR[24]
- Provision of hearing devices[18,25]
- Tinnitus and balance management[26]

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