

## Abstract

Ototoxic medications including platinum chemotherapy drugs can cause permanent, life-altering hearing loss and tinnitus. As survivorship has improved for many cancer patients, the urgency for improving quality of life increases. This is my experience with starting an ototoxicity monitoring program as part of a multidisciplinary team in a cancer center. This Head & Neck team includes otolaryngologists, oncologists, radiation oncologists, speech pathologists, nutritionists, a dentist and dental hygienist, nurses, and advanced practice providers. Audiology is the newest addition to this team.

## Results

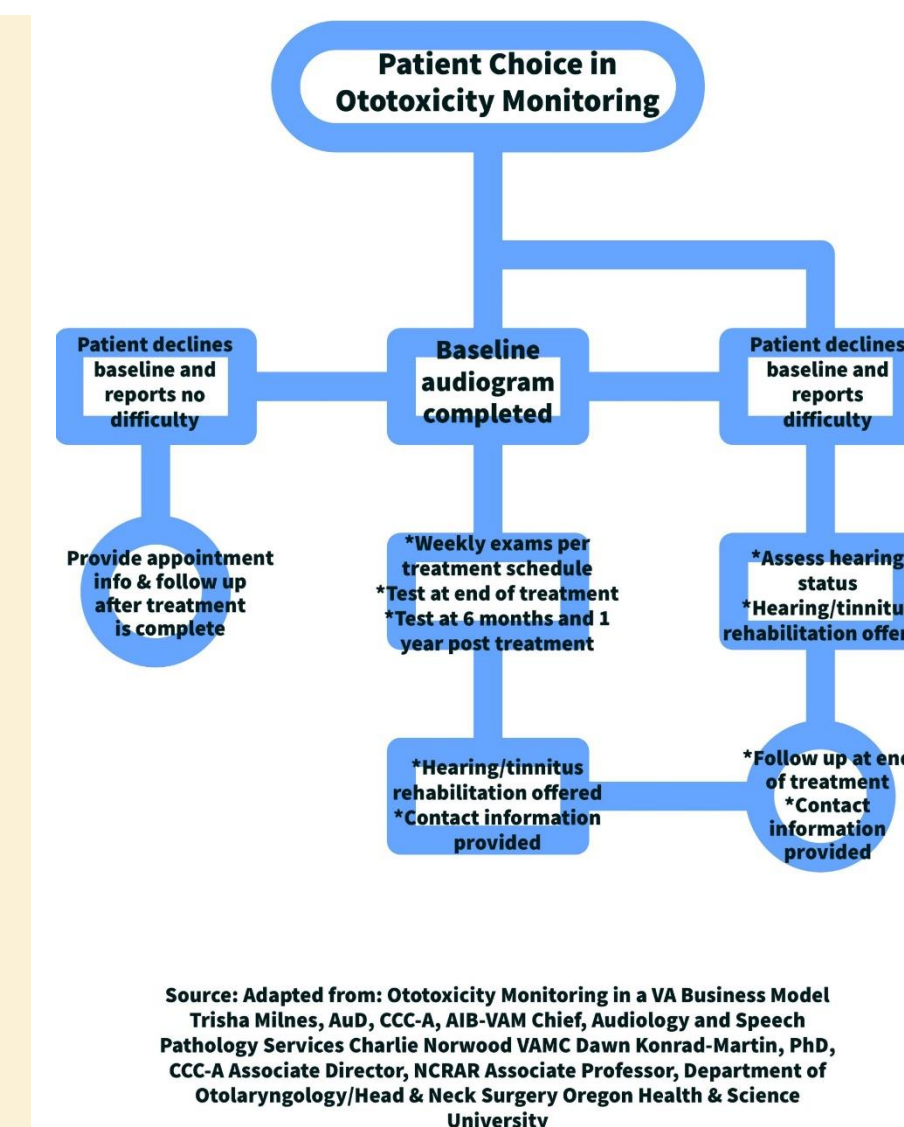
More Head & Neck Cancer patients are being referred and seen for baseline and monitoring audiograms now that there is a dedicated position serving this population. Below are some of the materials used for patients and providers including a patient brochure, decision tree, and fact sheet.

**Why are we here?**  
 Some types of chemotherapy drugs as well as radiation to the head and neck area can affect your ears. They may cause ototoxicity, which is damage to the structures of the middle or inner ear. This can lead to hearing loss and tinnitus, the sensation of noise in the ears such as ringing, humming, or buzzing. Chemotherapy drugs including cisplatin, carboplatin, & oxaliplatin may be ototoxic.

**How can we help?**  
 Audiologists are the professional experts in hearing, tinnitus, and balance. We can assess your hearing prior to starting treatment. This is the baseline test to compare any changes that may occur during treatment. We can monitor your hearing during and after treatment for changes. If you develop hearing loss, tinnitus, or balance problems, we can help manage those conditions.

**Protect your ears**  
 During treatment, you are more sensitive to loud sound. If you cannot avoid loud sounds such as heavy machinery or loud music, we recommend that you use appropriate hearing protection. This can include earplugs, ear muffs, or a combination of the two. If you have any questions, contact your audiologist.

**We recommend to monitor hearing 3 months and 1 year after treatment to assess for any further changes that may occur.**



**Ototoxicity Monitoring Fact Sheet : Platinum Chemotherapy & Radiation**  
 Winship Cancer Institute  
 Dana Libman, AuD, FAAA

**Facts**

- High-dose cisplatin regimen (100 mg/m<sup>2</sup>) has been associated with hearing loss in many patients.
- Lower dose (40 mg/m<sup>2</sup>) of cisplatin with IMRT radiation may predict lower toxicity - more studies are needed.
- Age, pre-existing hearing loss, total cisplatin dose, total radiation to cochlea, and noise exposure may relate to greater risk of hearing loss with CRT.
- Education and early intervention can lead to better quality of life outcomes for our patients.

**Testing**

- Baseline audiogram within 1 week prior to, and no later than 24 hours after the initial treatment.
- Follow up audiograms within 24 hours of next chemotherapy treatment when possible or as needed if patient reports auditory changes and/or tinnitus.
- May include subjective questionnaires of hearing and/or tinnitus quality of life and speech-in-noise testing.
- Monitoring will assist with patient management in multidisciplinary team - for example, changes in dose or treatment.

Source: Adapted from: Ototoxicity Monitoring in a VA Business Model. Trisha Milnes, AuD, CCC-A, AuD-VAM Chief, Audiology and Speech Pathology Services. Charlie Norwood VAMC Dawn Konrad-Martin, PhD, CCC-A Associate Director, NCRAR Associate Professor, Department of Otolaryngology/Head & Neck Surgery Oregon Health & Science University.

## Objectives

- To assess the importance of monitoring the hearing for patients undergoing treatment with ototoxic drugs and radiation
- To become familiar with members of a Head & Neck cancer team
- To review materials used with patients and relevant providers

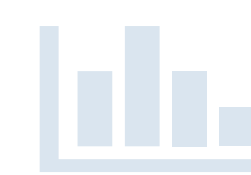
## Conclusion

A recently published study in the Journal of Cancer Survivorship (Konrad-Martin et al, 2023) reported on audiologist views of the importance of ototoxicity monitoring and barriers of implementation in cancer patients in the VA setting. They found that although many audiologists recognize the importance of caring for these patients, there are several barriers to implementing these programs. There is a lack of consistent ototoxic monitoring in this setting, and here I look at some of the reasons why and describe my experience in joining a multidisciplinary team in a cancer center. Ototoxicity monitoring is an area of audiology that is emerging as a vital part in helping cancer patients preserve their quality of life. In addition to monitoring for changes, earlier intervention may be possible with this type of program in the form of hearing aids, tinnitus management, and hearing conservation.

## Methods & Materials



**Attend MDC (Multidisciplinary Conference)**  
 What patients will be treated with CRT



**Schedule patients for baseline audiograms**



**Perform Baseline Education**  
 Education for patient of symptoms to look for and importance of protection from loud sound



**Patient begins treatment**  
 Monitoring as needed  
 Treatment may be adjusted for significant changes

## References

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