

# **Clinical Experience with Lenire® - Case Report of a Patient whose Vestibular Symptoms Improved**

## **Ótologie Tinnitus Care (Dublin)**

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The below case occurred through Ótologie Tinnitus Care, based in the Hermitage Medical Clinic in Dublin. At the clinic, patients with tinnitus are seen by a team of qualified and experienced Clinical Audiologists. Although the clinic only sees patients with tinnitus, these patients frequently present with other complaints, e.g. hearing loss, or hyperacusis. Patients undergo initial audiological and tinnitus assessments, device fitting appointments (either Lenire® or hearing aids), wax removal appointments, and all follow up appointments through the clinic either in-person, or remotely via video call where appropriate. An initial assessment consists of a comprehensive case history as well as otoscopy, tympanometry, and audiometry conducted according to the procedures outlined by the British Society of Audiology (BSA). Audiometry typically consists of pure tone audiometry (air conduction and bone conduction, if necessary) and Minimum Masking Level testing. Any tests conducted at the follow up appointments are at the discretion of the Audiologist and must always comply with the BSA standards. The clinic currently provides Lenire®, Tinnitus Therapy (an integrated Psychotherapy approach), as well as hearing aids as possible treatment solutions; however, referral on to other professionals for alternative treatments may occur if the clinician feels it is necessary.

### **Initial Evaluation**

The patient attended all appointments in the clinic. The patient is a 62 year old man with a 2-year history of tinnitus as well as unsteadiness and balance problems. He had a heart attack following which he was prescribed aspirin and noticed the onset of tinnitus and unsteadiness following this. His cardiologist was reportedly not concerned about his heart at the time of the assessment, and he had seen an ENT consultant for investigation of the tinnitus and unsteadiness. The ENT had referred him for an MRI and he was awaiting the appointment for that at the time of this assessment. The patient reported that he was frustrated and annoyed by his tinnitus, but did not feel that it was causing any significant anxiety or depression. His sleep was affected as he would usually take a long time to fall asleep, and wake during the night.

Clinically, the patient presented with constant, bilateral tinnitus that is more pronounced in the left ear and described as a buzzing sound. His audiometric evaluation showed a moderate high frequency hearing loss bilaterally which was slightly worse in his left ear. His minimum masking level (MML) was measured at 20 dBHL. His THI score was 50 (Grade 3 - moderate). He rated the loudness of his tinnitus as 9/10 at that moment in time and the annoyance of his tinnitus as a 7/10 at that moment in time.

At the time of the initial assessment the patient was still awaiting an MRI scan. It was decided to wait until the ENT had concluded their investigations and had no plans for further management before proceeding with a Lenire® fit.

## **Treatment**

### **Fitting Appointment:**

Approx. 3 weeks later the patient contacted Ótologie to report that he had the MRI scan and there were no abnormalities detected and he wished to proceed with Lenire®. He had his device fitting appointment two weeks after that. His device was configured to PS1 at the default volume for his audiological profile (i.e. no volume or background noise reduction activated).

## **Follow-up Assessments**

### **6 Week Follow up Appointment:**

The patient used the treatment continuously as directed for 6 weeks, and reported good compliance. At this appointment, he reported that his tinnitus was very much better, his mood and concentration were much better, and his sleep was minimally better. His THI score had reduced to 10 (Grade 1 – No or Slight handicap), he rated his tinnitus a 4/10 for loudness and a 0/10 for annoyance at that moment in time. But the most significant improvement was with regards to his imbalance and unsteadiness. After 3 weeks of using the Lenire® treatment he noticed that his unsteadiness went away completely and he was much more stable while walking. Although the protocol would have been to change the settings on his device to PS4, it was decided to rather leave him on PS1 as he had been noticing such significant improvements, and was anxious that changing the setting may cause his symptoms to worsen again.

### **12 Week Follow up Appointment:**

The patient used the treatment for a further 6 weeks with good compliance, as reported by himself. At this appointment, he reported that there had been no further change to his tinnitus since the previous appointment. He was still stable on his feet and had not experienced any of the unsteadiness that he reported before starting with Lenire®. His THI score was 16 (Grade 1 – No or Slight handicap), and he rated the loudness of the tinnitus a 4/10 and the annoyance a 1/10 at that moment in time. The settings on his device were then changed to PS4, with default background noise level and 0dB volume reduction. No further follow up appointments were arranged, but the patient was advised to continue using the treatment for as long as he wished to, and to contact Ótologie Tinnitus Care if any questions or concerns were to arise in the future.

## **Conclusion**

The patient presented initially with tinnitus as well as unsteadiness and difficulty with his balance. Through using Lenire® he did notice improvement in his tinnitus; however, an unexpected benefit of the treatment was a significant improvement in his balance.

This patient's THI score reduced from 50 to 16 points between the initial assessment and the second follow up appointment. His loudness and annoyance ratings also improved; as did his sleep, concentration, and overall mood.

Learnings to be taken:

- Patients oftentimes present with other co-existing complaints, in this case balance problems. Although Lenire® is really only designed to target the tinnitus, it is interesting (and wonderful for the patient) when there are other unexpected improvements
- One thing that could have been utilized, if the clinician had the confidence and training, is some assessments on the patient's balance before and after treatment. This would have resulted in objective data rather than purely relying on the patient's subjective report. This is a reminder of how important Continued Professional Development is for clinicians.
- Although it is recommended to stick to the protocol and change the Parameter Stimulation at each follow up, sometimes a case can be made for keeping the PS the same for a bit longer. In this case, as the patient was very anxious about changing the setting, the clinician was concerned that changing the PS may have a negative impact on his anxiety, which in turn could aggravate his tinnitus.