Phonak
Field Study News

Reducing tinnitus with hearing aids: Does Phonak Lyric™ offer a more effective option?

This study investigates whether providing continual amplification using the Lyric extended wear hearing aid can offer as good as or greater reduction of tinnitus compared with discontinuous amplification alone, or with the addition of a masking noise using a daily wear hearing aid.

Anna Biggins, August, 2021

Key findings

- The Lyric group displayed a higher proportion of participants achieving clinically significant reduction in TFI compared to other groups.
- 64% of people in the Lyric group showed a clinically significant reduction in TFI score at one month and 82% at 3 months compared to 27% and 55% of people in the Daily wear group.
- Sleep Quality was improved as measured using the Sleep Quality Scale at 1 month and 3 months for the Lyric group.

Considerations for practice

- Lyric can be considered as a valid option of hearing aid to be used as part of a tinnitus management program for people with a mild to moderate hearing loss and accompanying tinnitus.

Introduction

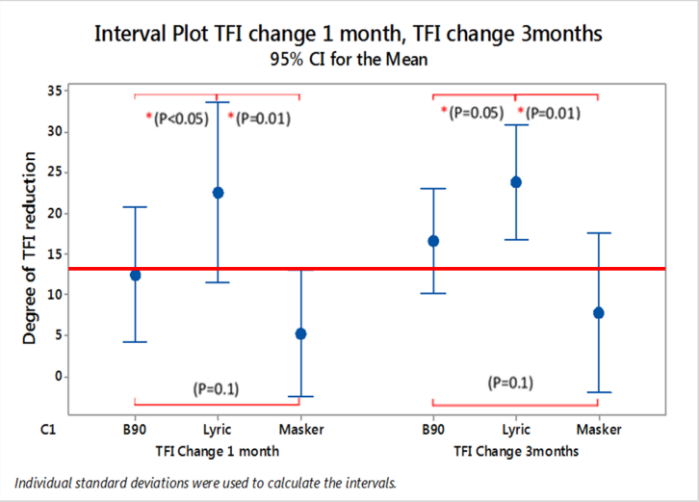
Hearing aids have long been considered effective for providing relief from tinnitus, however controlled clinical studies evaluating this premise have been very limited[1]
The hypothesis is that amplification through hearing aids may provide that missing auditory information for the auditory pathway to process, diverting attention from tinnitus. Sleep disturbance is a common and frequent complaint reported by tinnitus sufferers. The hypothesis is that being able to wear a hearing aid that is designed to be worn while sleeping, providing continuous amplification(such as is possible with the extended wear hearing aid Lyric) may provide the missing auditory information required to divert attention from the tinnitus leading to improved sleep quality.

Methodology

Thirty three participants with self-reported bothersome tinnitus and at least a mild hearing loss were included in the study. All had initial scores of 20 or higher on their Tinnitus Functional Index (TFI) measures indicating at least a Small Problem. The Sleep Quality Scale (SQS) was also administered at baseline 1 month and at 3 months, Audiometry and tinnitus pitch and loudness matching were also conducted at baseline, 1 month and at 3 months (conclusion).
Participants were allocated to the **Lyric** treatment group depending on their clinical suitability and interest in extended wear hearing devices. This group by nature of the device wore it 24 hours a day every day for the duration of the study. Those who were unsuitable for Lyric or not wanting an extended wear option were allocated to the hearing aid group and Phonak Audéo **B90** 312 hearing aids were fitted. If the tinnitus was not partially or fully masked by the hearing aids, the addition of a masker was included, and they were allocated to the **Masker** group. There were 11 participants in each group. Both the Phonak Audéo B90 group and the Masker group were advised to wear the devices during the day consistently and remove them at night for sleeping.
All hearing aids were configured using the NAL-NL2 prescription and matched to the NAL-NL2 insertion gain targets where possible.
The TFI was repeated at 1 and 3 months and results analysed. Differences in TFI scores were evaluated at one month and at three months across the three groups.
The SQS was repeated at 1 and 3 months and results analysed. Differences in SQS scores were evaluated at one month and at three months across the three groups.

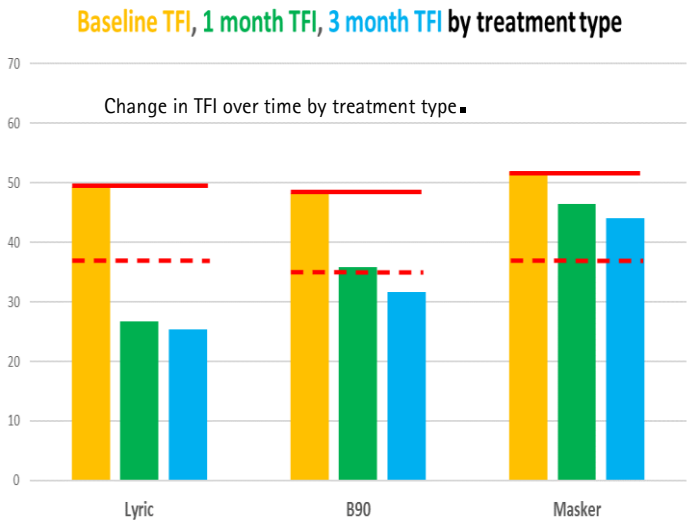
Results

The Lyric group showed a significantly larger change at 1 and 3 months when compared to the other groups.

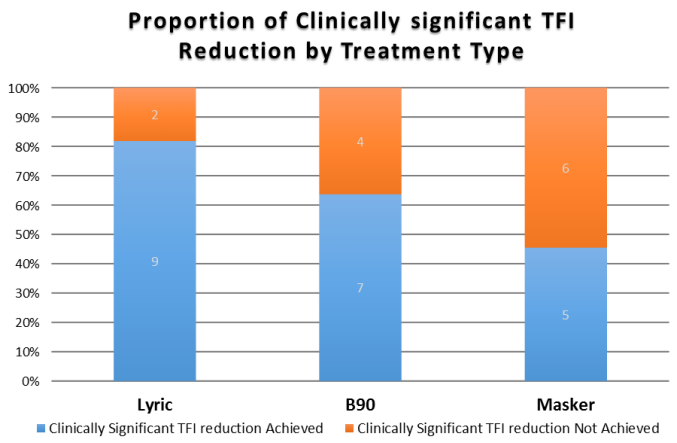


The red horizontal line represents the 13 point change in TFI where clinically significant reduction in TFI lies).

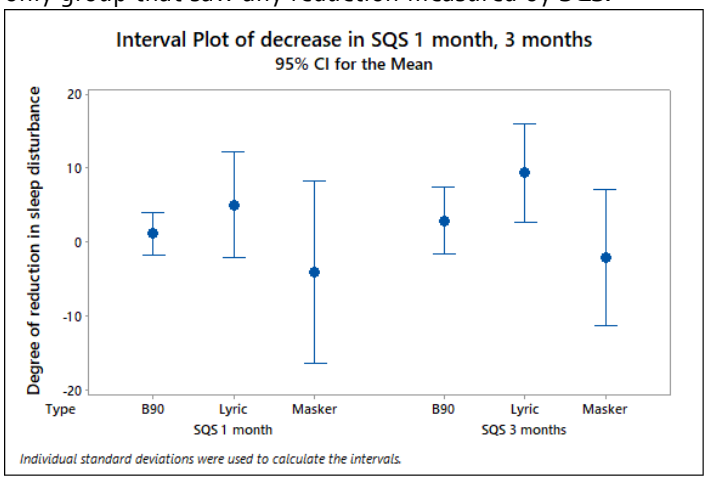
TFI reduction reached clinically significant levels faster in the Lyric group. This difference was maintained at 3 months



(Solid to dashed line represents 13 point – clinically significant – TFI reduction).



The Lyric group displayed a higher proportion of participants achieving clinically significant reduction in TFI compared to other groups. The difference was significant between the Lyric and Masker groups ($Z=1.91$ $p<0.05$).
Sleep Quality Scale (SQS) changes were compared between treatment groups at 1 month and 3 months. An Anova was preformed and the results shown. Unlike the TFI, there is no degree of change that equates to a clinically significant reduction in sleep disturbance but the Lyric group was the only group that saw any reduction measured by SQS.



Conclusion

The Lyric Group showed a faster, and greater magnitude of Tinnitus Functional Index reduction when compared to both the B90 and Masker groups. The Lyric group also displayed a higher 'hit rate' of clinically significant reduction in TFI scores. It must be highlighted that the results from the masker group do not imply this is an inferior method for tinnitus reduction, but that those allocated to this group had a more difficult type of tinnitus to assist through amplification and noise generation.
For the Lyric group the results did suggest to display a greater (non-significant) reduction in sleep disturbance, despite not stating that sleep was particularly bothersome for them. A larger sample size and emphasis on sleep being affected by tinnitus when recruiting participants may have yielded different results.
Clinically based participant allocation was selected for this study design with the aim of having the results offer greatest clinical relevance.
Lyric can be recommended by clinicians for those who are suitable Lyric candidates with bothersome tinnitus to facilitate faster and larger reduction in their tinnitus.

References

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