Investigators at University Hospital Zurich Target Tinnitus (Combining neurofeedback with source estimation: Evaluation of an sLORETA neurofeedback protocol for chronic tinnitus treatment).

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Full Text:
2020 JUL 31 (NewsRx) -- By a News Reporter-Staff News Editor at Health & Medicine Week -- Data detailed on Hearing Diseases and Conditions - Tinnitus have been presented. According to news reporting originating in Zurich, Switzerland, by NewsRx journalists, research stated, "Alpha/delta neurofeedback has been shown to be a potential treatment option for chronic subjective tinnitus. Traditional neurofeedback approaches working with a handful of surface electrodes have been criticized, however, due to their low spatial specificity."

The news reporters obtained a quote from the research from University Hospital Zurich, "The purpose of this study was to evaluate an innovative tomographic neurofeedback protocol that combines neural activity measured across the whole scalp with sLORETA source estimation. Forty-eight tinnitus patients participated in 15 neurofeedback training sessions as well as extensive pre, post, and follow-up testing. Patients were randomly assigned to either a tomographic (TONF) or a traditional electrode-based neurofeedback (NTNF) group. Main outcome measures of this study were defined as tinnitus-related distress measured with the Tinnitus Handicap Inventory (THI) and Tinnitus Questionnaire (TQ), tinnitus loudness, and resting-state EEG activity in trained frequency bands. For both groups a significant reduction of tinnitus-related distress and tinnitus loudness was found. While distress changes remained persistent irrespective of group, loudness levels returned to baseline in the follow-up period. No significant between-group differences between the 2 neurofeedback applications (TONF vs. NTNF) were found, which suggests a similar contribution to symptom improvement. The trained alpha/delta ratio increased significantly over the course of the training and remained stable in the follow-up period. This effect was found irrespective of group on both surface and source levels with no meaningful differences between the 2 groups."

According to the news reporters, the research concluded: "Our study shows that a tomographic alpha/delta protocol should be considered a promising addition to tinnitus treatment but that more individually specific neurofeedback protocols should be developed."

For more information on this research see: Combining neurofeedback with source estimation: Evaluation of an sLORETA neurofeedback protocol for chronic tinnitus treatment. Restorative Neurology and Neuroscience, 2020;():1-17. Restorative Neurology and Neuroscience can be contacted at: IOS Press, Nieuwe Hemweg 6B, 1013 BG Amsterdam, The Netherlands.

Our news correspondents report that additional information may be obtained by contacting Tobias Kleinjung, Dept. of Otorhinolaryngology, University Hospital Zurich, Zurich, Switzerland. Additional authors for this research include Dominik Guntensperger, Patrick Neff, Christian Thuring and Martin Meyer.

The publisher of the journal Restorative Neurology and Neuroscience can be contacted at: IOS Press, Nieuwe Hemweg 6B, 1013 BG Amsterdam, The Netherlands.

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