

Evaluation of Botulinum toxin in the treatment of somatic tinnitus

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The term “somatic tinnitus” describes forms of tinnitus which are generated after a somatosensorial injury (whiplash syndrome, temporomandibular joint disorders, dental injury) or those tinnitus forms that can change the pitch or the loudness with orofacial movements. A dysfunction of the multimodal interaction between central auditory and somatosensory pathways is assumed to be the possible mechanism of somatic tinnitus. Botulinum toxin has been used successfully in some cases of migraine and neuropathic pain. Furthermore a modulating effect on the autonomic nervous system has been demonstrated. It is suspected to block not only acetylcholine, but inhibit release of other neurotransmitters and neuropeptides important in the autonomic pathway. Applied in the neck muscles the effect of Botulinum toxin is supposed to reach central structures mediated by the somatosensory pathway. By propagating to multimodal crossing sites, it could have a modulating effect on auditory pathways, which in turn may reduce somatic tinnitus perception.

The goal of the study is the evaluation of the effect of botulinum toxin in somatic tinnitus. A double-blinded placebo-controlled clinical assay is designed for the evaluation of the effectiveness of botulinum toxin A on tinnitus patients.

The demonstration of the effectiveness of botulinum toxin A on somatic tinnitus would encourage the design of more specific treatments for this tinnitus subtype.

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