

Novel therapeutic approaches to the treatment of chronic tinnitus : a prospective study

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Tinnitus is a common phenomenon disturbing millions of individuals worldwide. It leads to significant economic burden due to workdays lost, reduced productivity and long term use of medications with their associated side effects. The lack of an efficient medical or surgical therapy for chronic tinnitus led to frustration of both patients and physicians. This may in part be explained by the lack of understanding of the mechanisms underlying chronic tinnitus. The development of transcranial magnetic stimulation has provided a new tool to study the cortical excitability in chronic tinnitus and to use the repetitive stimulation to modulate this cortex to alleviate the tinnitus. The aim of the present work is: **Phase 1**: to assess the cortical excitability in chronic tinnitus patients in order to understand more about its pathophysiological mechanisms, **Phase 2**: we will evaluate the impact of different frequencies of repetitive transcranial magnetic stimulation (rTMS) on patients with chronic intractable tinnitus. Sixty consecutive patients with chronic tinnitus due to central causes will be randomly classified to one of four groups; 1 Hz, 10Hz, 25Hz and sham group with total 1500 pulses at 100% resting motor threshold per session on the temporoparietal cortex for two weeks. The primary outcome of the treatment protocol will be the patients' own self rating of their symptoms using the tinnitus questionnaire at 3 and 6 months.

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