**Table 1. Patients with tinnitus with rTMS intervention for randomized controlled studies (RCT) with at least 6 months of follow-up**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Comments** | **Time of measurement** | **Secondary****Outcome** | **Primary Outcome** | **Site**  | **Duration of** **intervention** | **Inclusion criteria** | **Patients’ Number** | **Number of trial arms** | **Study design** | **Date publi****shed** | **Authors** |
| significant reduction of the total score of basic scales that measure tinnitus severity. reduction was displayed in figures | -before start-after 2 – 6 – 14- 26 weeks |  | TQ\* modifiedTHI\*\*VAS1\*\*\*VAS2Goebel & Hiller tinnitus questionnaire | Czech RepublicPsychiatryOtorhinolaryngology, Neurology,Radiology Charles University in Prague | 2 weeks | chronicuni- or bilateral tinnituspatients of~9 years durationNormal hearing Right handed | 2220 | 1- Hz rTMSSham  | randomized, prospective, placebo-controlled  | 2010 | Andres et al.18  |
| Tinnitus unchanged.25% improvement on the TQ. | -before start-after last session-after 1 week-after 1-3-6 months | THI –VASSTAI\*\*\*\*Beck Depression Inventory | TQ | NetherlandOtorhinolaryngology University Medical Center Utrecht&Brain Center | 5 consecutive days | chronic non-fluctuating tinnitus of 8 months with some hearing loss | 2624 | 1 -Hz rTMSPlacebo | RCT block design per group of 8,double- blindplacebo-controlled | 2013 | Hoekstra et al.19  |
|  32.25% of all patients recovered completely from tinnitus. 27.4% improved to the point where they only had tinnitus at night before sleeping. In the contralateral group 64.5% improved in comparison to 29% in the ipsilateral group. No different effect of 1Hz or 25 Hz frequency. | -before start-after last session-monthly interval for 10 months  | RI andHamilton ratings of depression and anxiety  | THIVAS |  EgyptNeuroPsychiatry, Audiology Assiut University Hospital | 2 weeks daily | Right or left ear tinnitus Normal hearing & some hearing loss | 15161516 | *1- Hz rTMS:* Ipsilateral Contralateral *25 -Hz rTMS:*IpsilateralContralateral | RCT randomized to four groups | 2010 | Khedr et al.20 |
| 46.7% of patients having ipsilateral stimulation and 51.6% of contralateral showed improvement | -before start-after last session-after 1-3-6 months |  | THIVAS:- loudness awareness annoyance | KoreaDept Otorhinolaryngology, Research Institute of Rehabilitation | for 5 days | tinnitus localized to poor ear asymmetric hearing impairmentat least 6months & treated for at least 2 months | 3031 | 1- Hz rTMS **:** Ipsilateral Contralateral | RCT patients were assigned randomly to the ipsilateral orcontralateral | 2014 | Kim et al.21   |
| major changes in the physical & catastrophic domain 40% had a signiﬁcant reduction of tinnitus severity after 5 days and 1, 6 months after treatment of active rTMS | -before start-after 7- 14- 21days- monthly interval for 6 months |  | THIVASSPECT\*\*\*\*\* | BrazilDept Otolaryngology, Radiology, Psychiatry | 5 consecutive days  | uni- or bilateral tinnitus of 3 months duration, normal hearing | 109 | 1 -Hz rTMSPlacebo | RCTRandomized double-blind controlled  | 2010 | Marcondes et al.22  |

\*TQ= tinnitus questionnaire

\*\*THI= tinnitus handicapped inventory

 \*\*\*VAS= visual analogue rating scores

\*\*\*\*STAI =State-Trait Anxiety Inventory

\*\*\*\*\*SPECT = Single photon emission computed tomography

 **Table 2. Mean tinnitus handicapped inventory (THI) in 3 studies with similar design at baseline, directly after rTMS and after 6 months**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **After 6 months** | **THI****After rTMS** | **Baseline** |   |  |  |
| Mean THI ± SD  | Mean age (years) | Number of patients in trial arm | **Studies**  |
| 33.27±21.6 | 31.82±22.9 (2weeks) | 37.09±21.7 | 48.09 | rTMS 22 | Andres et al. (2010) |
| 27.7±23.2 | 23.1±19.5 | 26.5±20.4  | 50.05 | Sham 20  |
| 43 ±18 | 41 ±16 (1week) | 45 ±21 | 50 | rTMS 26  | Hoekstra et al. (2013) |
| 52 ± 22 | 47 ±23 | 44± 22 | 55 | Sham 24 |
| 22.8 ± 18.2 | 19.4 ± 17.6\* (1months) | 29.8 ± 22.8 | --  | rTMS 10  | Marcondes et al. (2010) |
| 29.6 ± 23.5 | 28.9 ± 25.9 | 28.9 ± 23.8 | --  | Sham 9  |

 -- patients were more than18 years of age

 \* p=0.047 one sided (significant)