Pros and cons of tinnitus retraining therapy

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Introduction

- Tinnitus is a challenging medical problem that affects about **10%** of adults
- **1%** of adults complain that their tinnitus severely diminishes the quality of their lives
- **No treatment** that can be considered efficacious in terms of providing reproducible long-term relief from tinnitus, in excess of a placebo
Introduction (2)

- Tinnitus retraining therapy (TRT), which was first proposed by Jastreboff and Jastreboff, reportedly reduces the negative impact of tinnitus by 60-80%
- TRT
  - Counseling
  - Noise generator
217 patients with intractable tinnitus who visited our institute between December 2003 and June 2006.
Method

- PE, PTA
- To assess the effect of TRT
  - Tinnitus Handicap Inventory (THI)
  - Visual analogue scale of annoyance caused by tinnitus (VAS)
- THI
  - Varied from 0~100
  - A reduction in the score of 20 or more was regarded as indicating effective relief from tinnitus
Table II. Baseline THI and VAS scores of the subjects who underwent TRT treatment and those who declined TRT treatment.

<table>
<thead>
<tr>
<th>Baseline value</th>
<th>TRT treatment</th>
<th>TRT non-treatment</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>THI</td>
<td>48.8±25.9</td>
<td>36.6±27.4</td>
<td>0.0024</td>
</tr>
<tr>
<td>VAS</td>
<td>57.8±20.2</td>
<td>47.9±23.4</td>
<td>0.0022</td>
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The scores in the TRT non-treatment group were significantly lower than those in the TRT treatment group.
Result

Time-dependent decline in THI (♦) and VAS (□) scores. Significant improvement in THI and VAS scores was seen at 1, 3 and 6 months. Symbols and error bars indicate means±SD; ♦ ♦ p < 0.01; ♦ ♦ ♦ ♦ ♦ p < 0.005.
Progressive improvement in the THI and VAS score

<table>
<thead>
<tr>
<th></th>
<th>THI</th>
<th>VAS</th>
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<tr>
<td>1 month</td>
<td>36.3 ± 23.8 (p&lt;0.01)</td>
<td>47.3 ± 21.0 (p&lt;0.005)</td>
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<tr>
<td>3 month</td>
<td>30.5 ± 22.3 (p&lt;0.0001)</td>
<td>41.3 ± 20.8 (p&lt;0.0001)</td>
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<tr>
<td>6 month</td>
<td>28.3 ± 23.9 (p&lt;0.005)</td>
<td>37.8 ± 20.2 (p&lt;0.0001)</td>
</tr>
</tbody>
</table>

The efficacy ratio for TRT was **71.6%** at 6 months
Discussion

- Medication, psychotherapy, masking, biofeedback, hypnosis and others.
- 60% improvement has been reported in tinnitus patients with TRT.  
  - Am J Otol 1996; 17: 236-40
- A significant reduction in general tinnitus disturbance was obtained at 3 months after the start of TRT treatment, and a highly significant improvement in the THI score was reported after 6 months.
Discussion

- We observed a significant improvement in THI and VAS scores as early as after 1 month of TRT treatment and further incremental improvements were seen for up to 6 months.
- The efficacy ratio was 71.6% after 6 months of TRT
Excluded more than half of the patients who had sought TRT treatment at our institute. If we include these patients in our analysis, our overall efficacy ratio is 24.9%
Discussion

- Neurophysiological model in which the tinnitus signal is the result of classical associative conditioning, and the conditioned reflex can be extinguished when the stimulus is repeated.

Discussion

- The present study demonstrated two distinct groups:
  - obtain highly significant relief from tinnitus with TRT
  - cannot or should not undergo TRT treatment
- There were **no significant differences** in the clinical characteristics between these two groups
Conclusion

- TRT is a widely employed therapy that produces good result.
- Not all tinnitus patients can benefit from TRT
- Identify the patient!