



ORIGINAL ARTICLE

Effectiveness of sound therapy in patients with tinnitus resistant to previous treatments: importance of adjustments[☆]



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KEYWORDS

Tinnitus;
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Treatment;
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Abstract

Introduction: The difficulty in choosing the appropriate therapy for chronic tinnitus relates to the variable impact on the quality of life of affected patients and, thus, requires individualization of treatment.

Objective: To evaluate the effectiveness of using sound generators with individual adjustments to relieve tinnitus in patients unresponsive to previous treatments.

Methods: A prospective study of 10 patients with chronic tinnitus who were unresponsive to previous drug treatments, five males and five females, with ages ranging from 41 to 78 years. Bilateral sound generators (Reach 62 or Mind 9 models) were used daily for at least 6 h during 18 months. The patients were evaluated at the beginning, after 1 month and at each 3 months until 18 months through acuphenometry, minimum masking level, the Tinnitus Handicap Inventory, visual analog scale, and the Hospital Anxiety and Depression Scale. The sound generators were adjusted at each visit.

Results: There was a reduction of Tinnitus Handicap Inventory in nine patients using a protocol with a customized approach, independent of psychoacoustic characteristics of tinnitus. The best response to treatment occurred in those with whistle-type tinnitus. A correlation among the adjustments and tinnitus loudness and minimum masking level was found. Only one patient, who had indication of depression by Hospital Anxiety and Depression Scale, did not respond to sound therapy.

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PALAVRAS-CHAVE

Zumbido;
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Conclusion: There was improvement in quality of life (Tinnitus Handicap Inventory), with good response to sound therapy using customized settings in patients who did not respond to previous treatments for tinnitus.

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Eficácia da terapia sonora em pacientes com zumbido resistente a tratamentos anteriores: importância dos ajustes

Resumo

Introdução: A dificuldade em escolher a terapia apropriada para zumbido crônico encontra-se nas suas diversas formas de impacto sobre a qualidade de vida dos pacientes e requer a sua individualização.

Objetivo: Avaliar a eficácia do uso do gerador de som com ajustes individuais para aliviar o zumbido em pacientes sem resposta aos tratamentos anteriores.

Método: Um estudo prospectivo em 10 pacientes, 5 homens e 5 mulheres, na faixa etária de 41 a 78 anos com zumbido crônico e resistente a tratamentos medicamentosos. Foram utilizados geradores de som bilaterais nos modelos *Reach 62* ou *Mind 9* por no mínimo 6 horas diárias durante 18 meses. Os pacientes foram avaliados no início, depois de 1 mês e a cada 3 meses até 18 meses através da acufenometria, *Minimum Masking Level (MML)*, *Tinnitus Handicap Inventory (THI)*, Escala Visual Analógica (EVA) e *Hospital Anxiety and Depression Scale (HADS)*. Os geradores de som foram ajustados em cada visita.

Resultado: Houve uma redução do THI em 9 pacientes usando-se um protocolo com uma abordagem personalizada, independente das características psicoacústicas do zumbido. A melhor resposta ao tratamento ocorreu naqueles pacientes com zumbido do tipo apito. Encontramos uma correlação entre os ajustes e a intensidade do zumbido e o MML. Apenas um paciente com indicação de depressão HADS não respondeu à terapia sonora.

Conclusão: Houve uma melhora na qualidade de vida (THI) com boa resposta a terapia sonora com ajustes personalizados em pacientes resistentes a tratamentos anteriores para o zumbido.

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Introduction

Subjective tinnitus can be defined as an auditory perception in the absence of an external sound stimulus,¹ described as a sound like a whistle or a hiss. It is estimated that over 30 million Americans have tinnitus;² in Brazil, it is believed that this number is about 28 million.³ Thus, it is a public health problem.

It is a common-sense conclusion among researchers that symptom severity can lead to losses in quality of life. The lack of control of tinnitus and its constant presence produces a high degree of stress; indeed, the emotional effect is variable and may range from a mild irritation associated with tinnitus, to states of anxiety, depression, and insomnia, even leading to suicide.⁴

In patients with tinnitus, it is difficult to make objective measurements of emotional disorders such as anxiety and depression. However, several subjective assessment tools are available in Portuguese, and the Hospital Anxiety and Depression Scale (HADS)^{5,6} is one of the most used instruments, due to its ease of application.

Since tinnitus is a subjective symptom, it is difficult to analyze, measure, and treat. Thus evaluations such as

acuphenometry, the use of visual analog scales (VAS), and questionnaires to determine the impact on quality of life such as the Tinnitus Handicap Inventory (THI)^{7,8} are very important strategies, as are individual approaches in the treatment of these patients.

Among the therapeutic possibilities for sensorineural tinnitus, drug therapy, acupuncture,^{9,10} transcranial magnetic stimulation,¹¹ cognitive-behavioral therapy (CBT),¹² and sound therapy (masking therapy¹³ and habituation therapy) can be cited.⁴ Some patients try several resources attempting to find a treatment that brings significant relief for their tinnitus.

The process of habituation to tinnitus with the use of sound therapy consists of the stimulation of the ear by the presence of constant sounds, with the aim of reducing hypersensitivity in quiet surroundings. In this process, sound generators, with or without hearing amplification, are used with a neutral sound: music or white noise, at a low intensity in an attempt not to mask tinnitus, but to provide a reduction in its perception. Jastreboff⁴ developed Tinnitus Retraining Therapy (TRT) as a habituation therapy that uses counseling and sound therapy. Fractal Tones Therapy¹⁴ uses habituation therapy to reduce tinnitus, through a sound

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