TREATMENT OF TINNITUS
MED205.022
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COVERAGE:

Treatment of tinnitus with tinnitus maskers, electrical stimulation, or tinnitus-retraining therapy is considered experimental or investigational.

DESCRIPTION:

Tinnitus describes the perception of any sound in the ear in the absence of an external stimulus and presents a malfunction in the processing of auditory signals. A hearing impairment, often noise-induced or related to aging, is commonly associated with tinnitus. Clinically, tinnitus is subdivided into subjective and objective. Objective tinnitus describes the minority of cases in which an external stimulus is potentially heard by an observer, for example by placing a stethoscope over the patient’s’ external ear. Common causes of objective tinnitus include middle ear and skull base tumors, vascular abnormalities and metabolic derangements. In the majority of cases, tinnitus is subjective and frequently self-limited. In a small subset of patients with subjective tinnitus, its persistence leads to disruption of daily life. While many patients habituate to tinnitus, others may seek medical care if the tinnitus becomes too disruptive.

Treatment is supportive in nature; there is no cure. Treatment has focused on counseling or use of tinnitus maskers that produce a broad band of continuous external noise that diverts attention or masks the tinnitus. Transcutaneous electrical stimulation to the external ear has also been investigated and is based on the observation that the electrical stimulation of the cochlea associated with a cochlear implant may be associated with a reduction in tinnitus. Tinnitus retraining (tinnitus habituation therapy) is another treatment option, based on the theories of a researcher named Jastreboff. Jastreboff proposes that tinnitus itself is related to the normal background electrical activity in auditory nerve cells, but the key factor is the subject’s unpleasant perception of the noise, which is governed by an abnormal conditioned response in the extra-auditory limbic system. Tinnitus retraining focuses counseling and behavioral retraining on the associations induced by tinnitus perception. Specifically, the goal is not to eliminate the tinnitus itself, but to retrain the subcortical and cortical centers involved in processing the tinnitus signals. The counseling may require 4 to 6 one-hour visits over an 18-month period. As part of the overall therapy, maskers are used to induce habituation to the tinnitus. In contrast to the typical use of maskers, in retraining therapy, the masker is not intended to drown out or mask the tinnitus, but is set at a level such that the tinnitus can still be detected. This strategy is thought to enhance habituation by increasing the neuronal activity within the auditory system such
that the tinnitus is difficult to detect.

Meniere's disease is a complex, progressive disorder of the inner ear characterized by: abnormal sensation of movement (rotary vertigo), hearing loss, a feeling of fullness in the ear and tinnitus.

Tinnitus is a noise in the ear, such as ringing, buzzing, roaring or clicking.

RATIONALE:

Since tinnitus is a subjective symptom without a known physiologic explanation, randomized placebo-controlled trials are particularly important to validate the effectiveness of any treatment compared to the expected placebo effect.

**Tinnitus Masker**

While several large case series have reported positive results of tinnitus maskers, placebo-controlled trials are required to evaluate the extent of the expected placebo effect. Erlandsson performed a clinical trial in which patients were randomized to receive either a masker or sham device; those receiving the sham device were falsely told that it delivered a beneficial electrical current. Treatment response was based on responses to a questionnaire focusing on both changes in tinnitus level and nonspecific effects on mood, stress, and symptoms other than tinnitus. Neither the treatment nor placebo group reported a significant change in tinnitus intensity. Stephens and Corcoran reported on a controlled study that assigned non-hearing-impaired subjects to either a control group (n=24) with limited counseling or a treatment group consisting of counseling in addition to the use of 1 of 2 different tinnitus maskers (n=51). Outcomes were assessed with a questionnaire. There were no significant differences among the control and treatment groups, leading the authors to conclude that treatment with maskers has not been found to show a significant advantage compared to counseling alone. No recent randomized, placebo-controlled trials were identified in a literature search.

**Transcutaneous Electrical Stimulation of the Ear**

Two randomized trials of electrical stimulation were reported in the 1980s with negative results. Dobie and colleagues reported on a randomized, double-blind crossover trial in which 20 patients received an active and disconnected placebo device. Reduction in severity of tinnitus was reported in 2 of 20 patients with the active device and 4 of 20 patients with the placebo device. Fifteen of the 20
patients reported no effect with either device. Thedinger and colleagues reported on a single-blind crossover trial of 30 patients who received active or placebo stimulation over 2 weeks. Only 2 subjects of the 30 obtained a true positive result. Recently, Steenerson and Cronin reported on a large case series of 500 patients with tinnitus who were treated with electrical stimulation twice weekly for a total of 6 to 10 visits. Fifty-three percent of patients reported a significant benefit, defined as an improvement of at least 2 points on a 10-point scale of tinnitus intensity. Despite the favorable results, case series cannot be used as evidence of treatment efficacy, particularly when a placebo effect is anticipated.

Tinnitus-Retraining Therapy

While Jasterboff has published the theoretical rationale behind tinnitus retraining therapy, no controlled trials were identified on a MEDLINE literature search.

This policy was reviewed without a current literature search.

PRICING:

There are no specific CPT codes for electrical stimulation or tinnitus-retraining therapy. Tinnitus-retraining therapy may also be billed as psychotherapy, physical or speech therapy.

Tinnitus-masking devices represent a piece of durable medical equipment. There is currently no specific HCPCS code describing these devices.

REFERENCES:

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HMO Blue Texas physicians who are contracted/affiliated with a capitated IPA/medical group must contact the IPA/medical group for information regarding HMO claims/reimbursement information and other general polices and procedures.