Audiological Profile of Tinnitus Patients

Thesis
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By
Hanan Wafa`a El Sayed
M.B.B.Ch., M.Sc.

Supervised by:
Prof. Dr./ Mohamed Tarek Abed El Aziz Ghanoum
Professor of Audiology
Faculty of Medicine – Cairo University

Prof. Dr./ Moustafa El- Khousht
Professor of Audiology
Faculty of Medicine – Cairo University

Prof. Dr./ Shereen Mohamed El –Abd
Professor of Audiology
Faculty of Medicine – Cairo University

Dr./ Amira Maged El Shennawy
Assistant Professor of Audiology
Faculty of Medicine – Cairo University

Faculty of Medicine - Cairo University
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[قالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا
مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
العَلِيمُ الحَكِيمُ]

{البقرة:32}

Abstract

The objective of this work is to determine if there are any audiological findings in tinnitus patients or any audiological difference in patients with different levels of annoyance from tinnitus. Methods: A total number of 50 adult tinnitus patients were examined. Equipment included two channel audiometer, immittancemetery,Otoacustic emission analyzer. All subjects were subjected to history taking, THI, clinical examination, basic audiological assessment; tinnitus matching and otoacoustic emission. There were a reduced TEOAE and DPOAE levels in patients with normal hearing compared to control group.

Key Words:

Tinnitus- Otoacoustic emission-THI- Tinnitus matching- TEOAE- DPOAE .

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Table of Contents

List of Tables

List of Figures

List of Abbreviation

Aberrant electrical activity	(AEA)
Acoustic distortion product	(ADP)
Auditory brainstem response	(ABR)
Central nervous system	(CNS)
Cochlear microphonics	(CM)
Distortion product ototacoustic mission	(DPOAE)
Distortion products	(DPs)
Dorsal cochlear nucleus	(DCN)
Electrocochleography	(EchoG)
Electronystagmography	(ENG)
Functional magnetic resonance imaging	(fMRI)
Gamma aminobutryic acid	(GABA)
Inferior colliculus	(IC)
Inner hair cells	(IHC)
N – methyl – D – aspartic acid receptors – type.	(NMDA)

Otoacoustic emission	(OAE)
Outer hair cells	(OHC)
Pitch match Frequency	(PMF)
Pure tone audiometry.	(PTA)
Spontaneous otoacoustic emission	(SOAE)
Stimulus Frequency otoacoustic emission	(SFOAE)
Suppression tuning curves	(STC)
Synchronized Spontaneous otoacoustic	(SSOAE)
Tinnitus handicap Inventory	(THI)
Tinnitus loudness match	(TLM)
Tinnitus retraining therapy	(TRT)
Transient evoked otoacoustic emission	(TEOAE)
Ventral cochlear nucleus	(VCN)

INTRODUCTION AND RATIONALE

Introduction and Rationale

Tinnitus which is a sound perception that occurs in the absence of external stimuli represents a frequent disorder that occurs with different severity ***(Moller, 2007)***.

Epidemiological studies showed that about one third of the population experiences tinnitus at least once in their life and about 1-5% develop serious psychosocial complications ***(Pilgramm et al., 1999).***

The tinnitus prevalence increases to 70-85% of the hearing-impaired population. The causes of tinnitus are multiple. Tinnitus can be due to inner ear dysfunction, such as that associated with sudden hearing loss or acoustic trauma, or part of otological and neurological diseases such as Meniere's disease, conductive hearing loss, acoustic neuroma or severe head injury. In addition, there are idiopathic forms of tinnitus with no identifiable etiological factors despite appropriate medical examination ***(Hiller and Goebel, 2007).***

There are many forms of tinnitus; it can be just noticeable, an annoyance or it can reduce the quality of life.

Patients usually attribute tinnitus to a negative change in their life quality. They complain from irritability, concentration difficulties, sleep disorders, health problems,

and difficulty in speech discrimination. Tinnitus may be a source of intense anxiety leading some times to depression, and in some severe cases to suicide ***(Davis, 1995).***

The subjective assessment of tinnitus intensity that is, whether the sound is considered high, medium, or low has been shown to be related to the beliefs of the patient concerning the nature of the symptom and to the presence of anxiety, depression, or other emotional conditions of the patient at the time of onset of tinnitus. These factors might explain the difference between "annoying" and "tolerable" tinnitus. Patients who think that, their tinnitus is the first symptom of a psychiatric disease or a brain tumor assess the intensity of tinnitus as more loud. On the contrary patients who perceive their tinnitus as an environmental noise of benign etiology are more likely to assess the intensity as lower and characterize the symptom as tolerable ***(Hazell, 1995).***

There are no objective tests that can measure subjective tinnitus, and the only person who can assess the tinnitus is the person who has the tinnitus ***(Moller, 2007)***.

Assessment of tinnitus for clinical or research purposes is a challenging task because of the subjective nature of tinnitus ***(Meikle and Griest, 2002)***. Diagnostic audiological assessment is a critical step in management of tinnitus