ABSTRACT

INTRODUCTION

Diabetes Mellitus is the single most important metabolic disease which can affect nearly every organ system in the body. Almost all the macro and microvascular complications of diabetes have been studied extensively.

Sensorineural hearing loss (SNHL) is a type of hearing loss, or deafness, in which the root cause lies in the inner ear (cochlea and associated structures), vestibulocochlear nerve (cranial nerve VIII), or central auditory processing centers of the brain.

Hearing impairment is defined by the World Health Organization (WHO) as a hearing loss with thresholds higher than 25db in one or both ears. The degree of hearing loss is classified as mild, moderate, severe or profound.

Early detection of hearing loss is possible with the help of high frequency pure tone audiometry which may be undetected by a conventional audiometry.

RATIONALE

The link between diabetes and SNHL makes intuitive sense, given the documented neuropathic and microvascular complications of diabetes and the complex blood supply of the inner ear.

AIMS OF STUDY

- Early detection of Hearing loss in high risk individuals, with predilection to Diabetes Mellitus.
- To compare the efficacy of conventional hearing assessment (tuning fork test) against the high frequency audiometer in detection of hearing loss
- Early intervention and prevention of diabetes mellitus induced hearing loss
- Increase awareness among health care providers and laypersons.

METHODOLOGY

The study was a hospital based cross sectional study conducted in the department of ENT, Sree Mookambika Institute of Medical Sciences Hospital, Kanyakumari from December 2016 to October 2018 (Approximately 18 months). A total of 30 Human subjects were examined above the age 30years with Type 2 Diabetes Mellitus requiring assessment of hearing loss and willingness to participate in the study. All the cases were subjected to tuning fork test and pure tone audiometry.

Risks and Benefits of the Study:

- Benefits: Appropriate early diagnosis of causative factors for SNHL in diabetics to ensure prompt and effective management and to avoid or minimize the occurrence of complications.
- No risks so far have been detected following the study.

CONCLUSION

In patients with diabetes mellitus, by the time hearing loss is detected using conventional tuning fork tests, damage has already affected the sensorineural component, which will affect the hearing component of the patient and hence affect the quality of life. Therefore by using audiometry early detection of hearing loss in people affected with Type 2 Diabetes mellitus can be done. It will help us to take early steps to make the patients affected by diabetes aware of the deafness and to take early measures for prevention and further progression of deafness.

KEYWORDS

Pure tone audiometry, sensorineural hearing loss, conventional tuning fork test, microvascular, vestibulocochlear, neuropathic, type 2 diabetes mellitus.