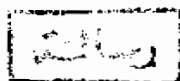


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**ELECTRONYSTAGMOGRAPHY AND DYNAMIC
POSTUROGRAPHY
IN
NON-INSULIN DEPENDENT DIABETES MELLITUS**

*Thesis submitted in the partial fulfillment for the master degree in
audiology*



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ACKNOWLEDGMENT

Thanks to God who guides me to the straight path and paves the way for all my works.

I would like to express my profound gratitude and sincere appreciation to Prof. Dr. Mamdouh El-Gohary, Professor of ENT, Ain Shams University. He provided me with sensational care, valuable advice, continuous encouragement and precious guidance. I appreciate his everlasting support to achieve this work.

I am deeply indebted to Dr. Somia Tawfik, Assistant Professor of Audiology, ENT Department, Ain Shams University, who offered me a lot of her time, continuous and generous efforts and valuable advice throughout this work.

I would like to express my sincere gratitude to Dr. Iman Sadek, Lecturer of Audiology, ENT Department, Ain Shams University, for her helpful supervision, encouragement and appreciable guidance.

I am honored to express my deep gratitude to Prof. Dr. Salah Soliman, Professor of Audiology, ENT Department, Ain Shams University.

Great thanks are paid to Prof. Dr. Ali Abu-Beih, Professor of ENT, Mansoura University, for his generous and continuous help.

Finally, my special thanks are to all members of the Audiology Unit in Ain Shams and Mansoura Universities, for their kind sympathy during the accomplishment of this work.

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***INTRODUCTION
AND
RATIONALE***

INTRODUCTION AND RATIONALE

Body equilibrium is controlled by a complicated interacting mechanism including ocular, proprioceptive, and vestibular systems. Perception of position in space depends on the cerebral integration of received impulses from these three systems. Gradual or sudden impairment in the function of the systems can cause vertiginous symptoms (Hytonen et al. 1989).

Diabetes Mellitus (D.M) is a heterogenous primary disorder of carbohydrate metabolism that affects at least 5 % of population in the developing countries (Ghalioungi and Gharieb, 1987). It is of multiple etiologic factors that generally involve absolute or relative insulin deficiency, insulin resistance, or both. All causes of D.M lead to hyperglycemia which is the hall mark of this syndrome. D.M. is classified into: a) Primary D.M which is of two types: insulin dependent D.M (IDDM or Type I), and non insulin dependent D.M (NIDDM or Type II). This latter is further subdivided into non-obese, obese and maturity onset diabetes of the young. b) Secondary D.M which may result from pancreatic diseases, hormonal abnormalities, drug or chemically induced, genetic syndromes or others (Olefsky, 1988).

Zelenka and Kozak (1965), suggested that D.M. affects the inner ear early in its course even before the disease becomes manifested clinically. Updegraff (1979), reported that the most common cause of vertigo was impaired carbohydrate and insulin metabolism. He stated that any patient presenting with vertigo should be suspected as either an occult or manifest diabetic until ruled out by laboratory studies.

In neuro-otologic diagnosis the standard bithermal caloric test has been a corner stone for decades. It tests the

vestibulo-ocular reflexes only. Thus many patients complaining of vertigo, as a symptom, show no pathology in caloric testing. Recent development of posturographic techniques taking into account the vestibulo-spinal reflexes have emphasized the multisensory organization of balance by analyzing some aspects of sensory interaction that includes the vestibular, visual and proprioceptive sensory inputs (Norre, 1994).

Few studies have paid attention to electronystagmographic findings in abnormal insulin levels (Proctor, 1981). To the last knowledge of the authors, no studies were done to study causes of vertigo in D.M. by evaluating both the vestibulo-ocular and vestibulo-spinal pathways. Type II D.M. patients were chosen to exclude iatrogenic causes of vertigo which happens to occur among Type I D.M. patients as a result of insulin overdose (Schwandt and Richter, 1980). Accordingly, this work was designed to study electronystagmographic and posturographic findings in Type II D.M. trying to provide an approach for remedation and rehabilitation of these diabetic patients.

OBJECTIVES

OBJECTIVES

- 1- to study the prevalence of abnormalities in Electronystagmography test in Type II D.M., if any.
- 2- to study the prevalence of Computerized Dynamic Posturography test abnormalities in Type II D.M., if any.
- 3- to compare Electronystagmography test results with those of Computerized Dynamic Posturography in such patients.

*REVIEW
OF
LITERATURE*