

Relationship between Esophageal Motility Disorders and Autonomic Nervous System in Diabetic Patients: Pilot North African Study

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Abstract

Background and aims: Little attention has been given to esophageal disorders in diabetes mellitus. Pathophysiology of esophageal motility disorders (EMD) in patients with diabetes mellitus is multifactorial. Therefore, the aims of the present study were: *i.* to evaluate the prevalence of EMD in patients with type 2 diabetes mellitus and *ii.* to determine the relationship between EMD and autonomic neuropathy as assessed by heart rate variability (HRV).

Materials and methods: All the patients completed a questionnaire about diabetes characteristics and gastrointestinal symptoms. Conventional esophageal manometry was performed in all patients. HRV was measured in three different situations (lying 1 position, standing position and lying position 2). The temporal and frequency domains parameters were considered for analysis.

Results: The prevalence of EMD in our patients was 60.5%. Low score physical activity was significantly more frequent in patients with EMD ($p = 0.03$). There was an increase in sympathetic activity represented by the LF parameter ($p=0.027$) in the presence of EMD. Whereas parasympathetic modulation of heart rate represented by the HF parameter ($p=0.027$) was declined in patients with EMD compared to those without. The LF/HF ratio was significantly higher ($p=0.002$) in patients with EMD.

Conclusion: EMD were prevalent in diabetes mellitus, and were associated to autonomic nervous system dysfunction predominantly at the parasympathetic component.

Keywords: Diabetes, Esophageal motility, Esophageal manometry, Autonomic nervous system.

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