



ASSOCIATION BETWEEN PROLONGED QTc INTERVAL AND MICROALBUMINURIA IN PATIENTS OF TYPE II DIABETES MELLITUS

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ABSTRACT

INTRODUCTION :- Autonomic neuropathy and nephropathy are common but severe complications of diabetes. QTc prolongation is a predictor of CAN (Cardiac autonomic neuropathy) and microalbuminuria is a predictor of nephropathy. This study was done to find the association between QTc interval prolongation and microalbuminuria in patients of type II diabetes mellitus. This cross sectional study was conducted in Sree Balaji Medical College and Hospital with 60 patients of type 2 diabetes mellitus. A complete History and thorough clinical examination were recorded in these patients at the time of admission. All these patients were tested for microalbuminuria and QTc interval prolongation in ECG. Studyanalysed by chi square test from two sample proportion. Most of the patients were in 50 to 70 years of age group.

KEYWORDS : QTc interval prolongation; Microalbuminuria; Cardiac autonomic neuropathy; Diabetic nephropathy

AIM AND OBJECTIVES :-

The aim of this study is to find the association between prolonged QTC Interval and Microalbuminuria in type 2 diabetes patients.

MATERIALS AND METHODS :-

60 patients of type 2 Diabetes Mellitus attending Sree Balaji medical college and Hospital and were studied over a period of one year. Informed consent obtained from all the patients. The study subjects are those who fulfill the inclusion and exclusion criteria.

RESULTS :-

There is a significant association between QTc prolongation and microalbuminuria as evidenced by (67.76% Vs 24.13%, $P < 0.0001$) more number of cases with microalbuminuria having prolonged QTc interval. Male to female ratio is 1.15:1. In addition to this it was noted that there is increase in incidence of QTc interval prolongation and microalbuminuria as the duration of diabetes increased. There was a significant association between cardiac autonomic neuropathy (i.e. QTc prolongation) and microalbuminuria. Microalbuminuria doesn't directly cause QTc prolongation but it can be used as an indicator for patients who are prone to develop cardiac autonomic neuropathy and hence are at higher risk of having fatal arrhythmias

CONCLUSION :-

There is a significant association between Prolongation of QTc interval and Microalbuminuria in these patients as evidenced by (67.76% Vs 24.13%, $P < 0.0001$) more number of cases with microalbuminuria having prolonged QTc interval. Microalbuminuria per se is not a causative factor for QTc prolongation but they both are associated with each other. QTc prolongation is an indicator of cardiac autonomic neuropathy which can lead to life threatening ventricular arrhythmias and sudden cardiac death. So, all diabetic patients having microalbuminuria should be screened with ECG to look for QTc interval prolongation (cardiac autonomic neuropathy) as it can be prevented by exercise, anti-hypertensive medications and beta blockade. The incidence of both cardiac autonomic neuropathy (QTc prolongation) and microalbuminuria increases with the duration of diabetes. Patients having either CAN or microalbuminuria should also be screened for other micro vascular complications like retinopathy and neuropathy as they are frequently associated with these conditions.

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