ASSOCIATION OF ANTIOXIDANT POTENTIAL AND SEVERITY OF CORONARY ARTERY DISEASE (CAD) IN DIABETICS AND NON DIABETICS

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Introduction

Diabetes mellitus is one of the five leading cause of deaths in the world. The highest prevalence of diabetes is reported in the low and middle income countries. In Sri Lanka nearly 24% of population is dysglysaemic. Diabetes is a well recognized risk factor for Coronary Artery Disease (CAD). Hyperglycemia can result in generation of free radicals through several biochemical pathways. The free radicals result in consumption of antioxidant defenses and lipid peroxidation. This oxidative modification of Low Density Lipoproteins (LDLs) may be an important step in atherosclerosis.

Objective

This study was carried out to assess the antioxidant status of diabetic and non diabetic CAD patients to observe its association with severity of CAD.

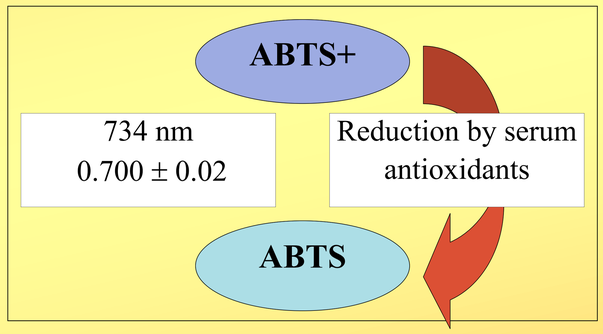
Methodology

Design : Descriptive study

Setting : Patients (n=55) who were awaiting Coronary Artery Bypass Graft at Cardio-Thoracic unit of Sri Jayewardenepura General Hospital. Ethical approval was obtained from Ethics review committee of University of Sri Jayewardenepura and Sri Jayewardenepura General Hospital.

Sample :

Gender	Diabetic (n= 29)	Non diabetic (n = 26)	Normal individuals (n = 25)
Male	20	17	13
Female	09	09	12



Total antioxidant status (TAS) of diabetic, non diabetic and normal individuals were determined using the Trolox equivalent antioxidant capacity assay (ABTS) at the Department of Biochemistry, Faculty of Medical sciences, University of Sri Jayewardenepura. CAD severity was evaluated by Gensini score which is used to estimate gravity of CAD according to anatomical location and the degree of coronary vessel stenoses using the coronary angiogram. Results were analyzed using SPSS 16 version.

Results

Table 01. Results of Total antioxidant status and Gensisni score.

Parameters	Normal Individual	Patients without diabetic	Patients with diabetic
Mean TAS (TEAc mg/100g)	6.8 (± 1.1)	6.6 (± 1.3)	6.5 (± 1.2)
Gensini score	-	51	48

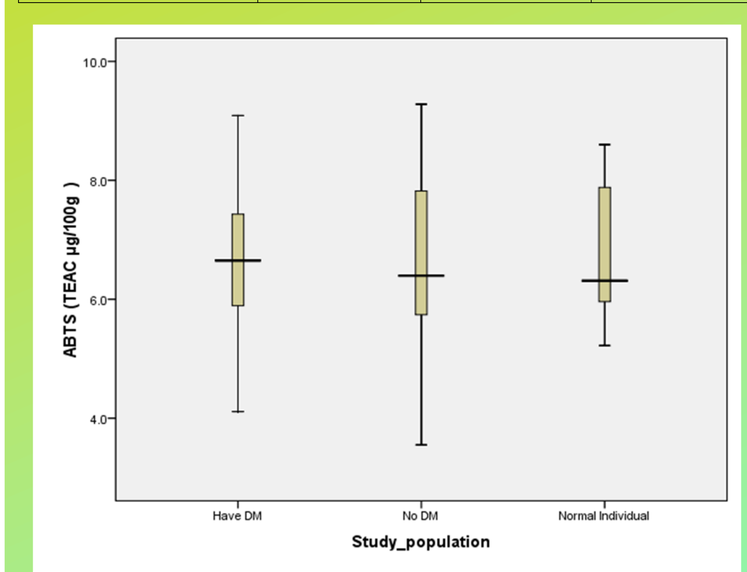


Figure 01. Distribution of Total antioxidant status of 03 groups (diabetes, non diabetes and normal individuals)

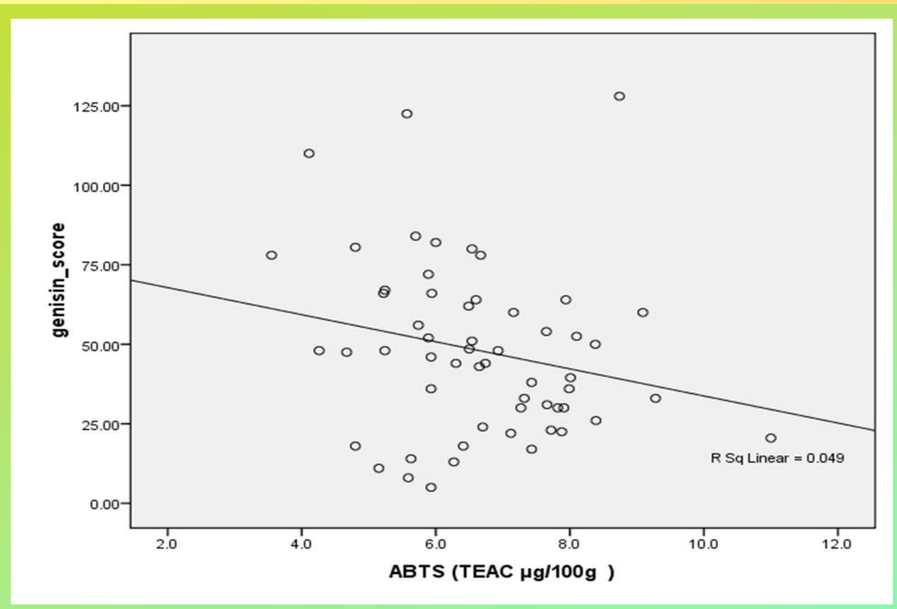


Figure : 02 Correlation between Total antioxidant status and Gensini score of total group. R = - 0.22, p > 0.05

A non significant negative correlation was observed between the Total antioxidant status and the severity of CAD assessed according to the gensini score in diabetic and non diabetic CAD patients.

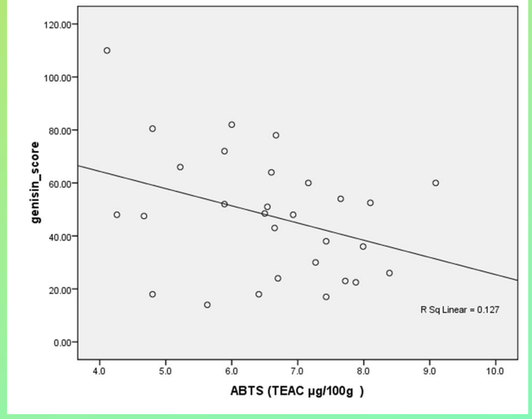


Figure : 03 Correlation between Total antioxidant status and Gensini score of diabetes, R = - 0.36, p > 0.05

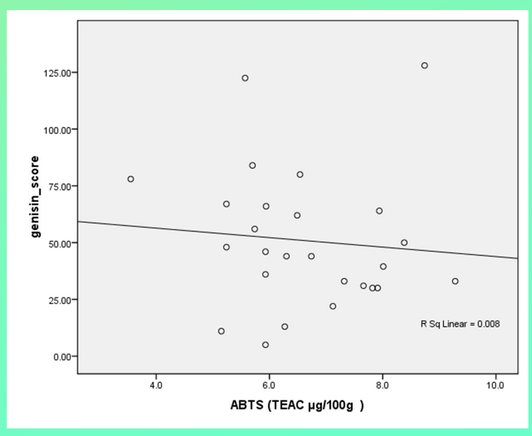


Figure : 04 Correlation between Total antioxidant status and Gensini score of non diabetes. R = - 0.09, p > 0.05

Conclusion

According to the above observation increasing the antioxidant potential of patients with CAD may contribute to decrease the severity of the disease. Increased consumption of fruits and vegetables may contribute to increase the Total antioxidant status.

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