

Echocardiographic data and oxidative stress markers (asymmetric dimethyl L arginine (ADMA), nitrous oxide and (OxLDL) in type 1 diabetics

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Objective: To evaluate echocardiographic data and oxidative stress markers in type 1 diabetic children and adolescents.

Patients and methods: The study included 62 type 1 diabetic patients and 30 healthy volunteer of the same age and sex. Blood sample was taken for assessment of nitrous oxide, ADMA and OxLDL by ELISA technique. Also blood sample were taken for analysis of glycosylated hemoglobin, lipid profile and albumin/ creatinine ratio in urine. M mode echocardiography was also done.

Results: The study included 62 patients with type 1 diabetes, their mean age were 16.3 ± 1.5 yrs (14.0-19.0 yrs), and mean duration of diabetes were 9.4 ± 2.9 yrs (5.0-16.5 yrs). Nitrous oxide and ADMA was significantly lower, while OxLDL and albumin/ creatinine ratio were significantly higher than controls. Nitrous oxide had a significant positive correlation with LVEDD, LVESD, PWT and LV mass and negative correlation with ADMA, albumin/creatinine ratio and OxLDL. OxLDL had a significant negative correlation with LVES and positive correlation with EF, ADMA and albumin/creatinine ratio.

Conclusion: the significant reduction in nitrous oxide and ADMA, elevation of OxLDL and its relation to echocardiographic data may reflect the role of oxidative stress in cardiac affection. Also oxidative stress had a role in renal affection.

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