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## Association between carotid artery intima-media thickness and vascular risk factors in children with type-1 diabetes

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**Aim of the study:** To measure the carotid intima-media thickness (cIMT) by high resolution ultrasound in children with diabetes type-1 for early detection of atherosclerosis and its association with other vascular risk factors including lipid profile, blood pressure, duration of diabetes and body mass index (BMI).

**Methods:** 25 children with diabetes type-1 and 20 healthy children matched for age, gender, and body size as the control group were recruited. Student's t-test, Pearson's correlation coefficient and multiple regression analysis were used for statistical analysis.

**Results:** Diabetic children have higher cIMT ( $P=0.0001$ ) compared to controls. cIMT significantly correlates with age ( $r=0.73$ ), duration of diabetes ( $r=0.57$ ), BMI ( $r=0.59$ ), diastolic blood pressure (DBP) ( $r=0.40$ ), low density lipoprotein (LDL) ( $r=0.30$ ), glycosylated hemoglobin A1c (HbA1c) ( $r=0.34$ ) and triglycerides (TG) ( $r=0.38$ ). With multiple regression analysis in the diabetic group with high cIMT, the most significant factors affecting cIMT were duration of diabetes ( $\beta=0.997$ ,  $P=0.02$ ), daily insulin dose ( $\beta=0.729$ ,  $P=0.044$ ), total cholesterol (TC) ( $\beta=6.345$ ,  $P=0.031$ ); however, high density lipoprotein (HDL) was a negatively associated factor ( $\beta=-2.445$ ,  $P=0.019$ ).

**Conclusion:** Assessment of the cIMT is a non-invasive valuable assessing the structural status of the vascular system in diabetic children at increased risk for cardiovascular complications even in the early stages of atherosclerosis with absence of clinically apparent macro-vascular manifestations.

### Biography

Ashraf Othman Saleh Sayed has completed his Bachelor's degree of Medicine in 1990 and Master's degree of Pediatrics in 1995 from Faculty of Medicine, Minia University, Egypt. He has finished a two-year Pediatrics Fellowship and Doctor degree (MD) at Pediatric Intensive Care Unit (PICU), Royal Hospital for Children; Bristol University, UK in 2002. He has also received a Membership of Royal College of Pediatrics in 2001 (London, UK). He serves as an Assistant Professor of Pediatrics since 2006 at Faculty of Medicine, Minia University, Egypt. He has published more than 12 papers in reputed journals.

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