

MP1-4

Intima Media Thickness Seems to Be Increased in Patients with Congenital Heart Disease in Comparison to Healthy Subject

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Introduction: Carotid intima media thickness (IMT) is a strong predictor of cardiovascular events and can be used as a risk marker of atherosclerosis. Studies suggest that patients with congenital heart disease (CHD) have an increased cardiovascular risk and impairments in arterial compliance. Therefore, this study compares the IMT of patients with CHD with a healthy control group and also focus on the potential correlation to exercise capacity.

Patients and Methods: From August 2015 to December 2015, 123 patients (51 female, 24.7 ± 11.9 years) with various CHD and 56 healthy volunteers (35 female, 30.5 ± 12.4 years) received an assessment of the IMT at the A. carotis communis with ultrasound. Afterwards they performed a cardiopulmonary exercises test.

Results: Mean IMT of patients with CHD was 0.492 ± 0.080 mm. IMT was associated with age ($r = .668$, $p < .001$), systolic blood pressure ($r = .327$, $p < .001$) and BMI ($r = .179$, $p = .017$). After adjusting for age, sex, BMI and systolic blood pressure in a multivariate regression model, patients with CHD tended to have higher IMT ($B = .019$; $Beta = .106$, $p = .056$) in comparison to healthy counterparts. Especially patients with left heart obstruction ($B = .043$, $p = .002$) and patients with univentricular heart after total cavopulmonary connection ($B = .036$, $p = .055$) seem to be at a higher cardiovascular risk. Exercise capacity was not associated with IMT ($p = .421$).

Conclusion: After adjusting for several confounders patients with CHD present higher IMT than healthy subjects, especially those patients with left heart obstruction and with univentricular heart after total cavopulmonary connection. More research with higher patient number is needed for diagnostic subgroup evaluation and to elucidate the association to exercise capacity.