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Does pulse wave velocity predict left internal mammarian artery flow?

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Introduction: Atherosclerosis is a chronic, inflammatory and focal disease of the middle and large arteries. Coronary arteries, popliteal arteries and Internal Mammarian Arteries (IMA) are middle sized arteries and they are prone to early atherosclerosis. Conventional risk factors of atherosclerosis (hypertension, diabetes mellitus, hyperlipidemia, advanced age, smoking, male sex) are a sign of extension of atherosclerosis and their existence correlated well with Pulse Wave Velocity (PWV). Increased PWV is also an independent risk factor for cardiovascular mortality and morbidity. IMA is the most widely preffered artery for anastomosis in Coronary Artery Bypass Grafting (CABG). Because IMA is also an artery that is prone to atherosclerosis, the size and the blood flow through IMA has always been an interest for surgeants preoperatively. We investigated the relationship between PWV and IMA size ve blood flow in patients who are candidates for CABG.

Material and Method: We recruited 21 patients (16 male, mean age 64,3) planned for CABG operation. Aortic PWV values are evaluated by echocardiography (GE, vivid E9, Solingen, Germany). IMA size and flow parameters are evaluated intraoperatively by cardiovasular surgeants.

Findings: According to the early resuts of this prospective study, mean aortic PWV value was 9,32±1,69 m/sec, mean IMA diameter was 1,53±0,05 cm and mean IMA flow was 29,2±1,2 cc/min.

Results: We found a statistically significant correlation between the IMA flow and IMA diameter ($p < 0,05$). But there wasn't a significant correlation between the IMA flow or diameter and PWV ($p > 0.05$). According to our study, aortic pulse wave velocity can not predict IMA flow or IMA diameter.

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