

## **Coronary artery disease topography in relation to rheology of the peripheral small arteries in middle aged erectile dysfunction men**

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**Background:** Middle age represents a life period where incidence of cardiovascular events typically augments. Our aim is to investigate any association between peripheral vascular rheology and distribution of coronary artery disease (CAD) in middle aged erectile dysfunction (ED) population.

**Methods:** 146 ED patients (46-61 y/o) with a coronary angiography documented single vessel CAD (> 50% of luminal narrowing) enrolled the study and divided into two subgroups according to the coronary lesions allocation. Patients with left main (LM), proximal or mid-left anterior descending artery (LAD) disease consisted Group 1. Group 2 included the rest of participants. All underwent carotid-femoral pulse wave velocity (PWV) augmentation index (AIx), carotid intima- media thickness (IMT) and peak systolic penile Doppler velocity (PSV) evaluation. Low PSV (< 25cm/sec) implies an impaired physiology of the peripheral small arteries network.

**Results:** Mean penile PSV was significantly lower in Group 1 comparing to Group 2. ROC curve analysis revealed a cut-off value of 22.5 cm/s on PSV for detecting LM, proximal or mid-LAD coronary lesions (sensitivity of 79% and positive predictive value of 86 %). PWV, AIx and IMT did not differ statistically between the two groups.

**Conclusions:** In middle aged ED patients, low penile arterial Doppler flow associates to an increased probability of CAD of the left main and left anterior descending arteries resulting in a theoretically larger jeopardized myocardial ischemic area. Our data may offer non- invasive clinical information on coronary artery disease topography of that special population suggesting further profound diagnostic and follow up strategies.