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P150 Study of Heamodynamic and Macrocirculation Indices Between Uncontrolled Naïve Hypertensives and Well Controlled Diabetic Patients

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ABSTRACT

Introduction: Both Type II Diabetes mellitus (DM) and hypertension have been associated with an increased risk for cardiovascular disease and linked to impairments in micro- and macrocirculation. However, previous studies examining micro- and macrocirculation in DM mainly include patients with comorbid hypertension. Therefore, the aim of the study was to compare hemodynamic and vascular indices in DM and non-DM patients, independently of their hypertension status.

Materials and Methods: Fifty-seven DM patients and 79 non-DM participants were enrolled. Participants underwent physical examination, ambulatory BP monitoring and estimation of pulse wave velocity (PWV) and intima-media thickness (IMT). Resting hemodynamic parameters were assessed by impedance cardiography. Participants also performed a 3-min-submaximal isometric handgrip (30% MVC) with continuous beat-by-beat BP/HR assessment (Finapress). The double product (DP = systolic blood pressure˙ heart rate) during HG was calculated, as an index of myocardial stress.

Results: No differences were observed in age, BMI, and resting BP among groups. Patients with DM had significantly higher PWV and IMT ($p < 0.01$) but lower velocity (VI) and acceleration index (ACI) compared to non-DM individuals ($p < 0.05$). Hypertensives had significantly higher myocardial stress during exercise compared to normotensives, independently of the presence of diabetes.

Conclusion: Despite similar blood pressure levels in DM and non-DM groups, the DM patients had higher PWV and IMT than non-DM participants. There were no differences between patients with isolated adequately controlled DM or isolated hypertension in macrocirculation indices, suggesting a possible equal impact of the above diseases on the macrovascular network.

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