

Peripheral artery disease: A hidden threat to heart function

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Peripheral artery disease (PAD) is linked to heart failure with preserved ejection fraction (HFpEF), a condition characterized by impaired left ventricular (LV) relaxation during diastole. LV diastolic dysfunction is a critical component of HFpEF. This study aimed to assess and compare LV diastolic function in individuals with and without PAD.

A total of 200 patients (61% male, 39% female, mean age 65 ± 15 years) with preserved LV systolic function (ejection fraction $\geq 50\%$) were selected from a single-center cohort (October 2023–October 2024). PAD was defined by an ankle-brachial index (ABI) < 0.9 or a history of lower extremity bypass surgery or endovascular interventions. LV diastolic dysfunction was diagnosed based on guidelines from the American Society of Echocardiography and the European Association of Cardiovascular Imaging. Prevalence was compared between those with and without PAD, and independent predictors were analyzed using logistic regression.

Among the participants, 40 (20%) had PAD. Patients with PAD exhibited significantly elevated E/e' ratios (14.2 ± 6.3 vs 11.2 ± 4.7 , $p < 0.05$), higher tricuspid regurgitation velocities (2.34 ± 0.31 vs 2.14 ± 0.26 m/s, $p < 0.05$), and increased left atrial volume indices (38.4 ± 18.9 vs 31.7 ± 13.2 mL/m², $p < 0.05$). Additionally, e' velocities were significantly lower in the PAD group (5.42 ± 1.60 vs 6.15 ± 1.90 cm/s, $p < 0.05$). LV diastolic dysfunction prevalence was higher in PAD patients (27% vs 13%, $p < 0.01$). PAD was identified as an independent predictor of LV diastolic dysfunction (adjusted odds ratio: 1.55, 95% CI: 1.02–2.45, $p = 0.04$).

These findings highlight that LV diastolic dysfunction is more prevalent in PAD patients and independently associated with PAD. This underscores PAD's role in contributing to LV relaxation disturbances, with important implications for cardiovascular care.

Biography

Omama Taie is a graduate of the Faculty of Medicine and Pharmacy in Rabat and holds full GMC registration with a license to practice. Currently, she is a Junior Research Fellow in the Vascular Surgery Department at Mohammed V Military Hospital. With over two years of experience as a junior doctor, she also gained valuable clinical exposure at Imperial College Healthcare in London, enhancing her expertise in patient care and research.

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