

Clinical and demographic features associated with elevated left ventricular end-diastolic pressure in patients undergoing primary percutaneous coronary intervention

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Background: Prognostic importance of left ventricular end-diastolic pressure (LVEDP) is well established, hence, it is important to understand the factors associated with increased LVEDP for individualized risk stratification of ST-segment elevation myocardial infarction (STEMI) patients. There is dearth of data regarding clinical associates of elevated LVEDP, therefore, the purpose of current study was to evaluate the clinical indicators and phenotype of elevated LVEDP in STEMI patients undergoing primary percutaneous coronary intervention (PCI).

Methods: This descriptive observational study included patients diagnosed with STEMI and undergone primary PCI. LVEDP was measured using a fluid-filled pig-tail catheter before reperfusion but after angiography. Elevated LVEDP was taking as >25 mmHg.

Results: A total of 498 patients were included, 23.7% (118) were female patients and mean age was 53.7 ± 11.7 years. Distribution of LVEDP was ≤ 15 mmHg in 48% (239), 15-25 mmHg in 42% (209), and >25 mmHg in remaining 10% (50) of the patients. Elevated LVEDP was found to be associated with increased heart rate (HR) with adjusted odds ratio of 1.05 [1.02-1.08], decreased systolic blood pressure (SBP) (0.95 [0.9-0.99]), Killip class II or high (9.36 [3.38-25.9]), and hypertension (4.63 [1.55-13.82]).

Conclusions: Hemodynamic instability at presentation such as elevated HR, reduced SBP, higher Killip class and hypertension are the key indicators of elevated LVEDP.