

Facilitation of Left Ventricular Recovery Post Percutaneous Coronary Intervention by Levosimendan

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Background: Efficiency of percutaneous revascularization and the utility of levosimendan for advanced ischemic heart failure (HF) is unclear. We examined the efficacy of revascularization and levosimendan on left ventricular ejection fraction (LVEF) and mortality of patients admitted with acute decompensated HF and severe left ventricular dysfunction.

Methods: A prospective case control study that enrolled 84 patients with ischemic decompensated HF with LVEF<35% and preserved LV wall thickness. Group A: 42 patients whose LVEF improved post percutaneous coronary intervention (PCI). Group B1: 22 patients whose LVEF did not improve post-PCI alone but improved after levosimendan. Group B2: 20 patients whose LVEF did not improve neither post-PCI nor post levosimendan.

Results: LVEF increased in group A from 22±5 to 29±5% post PCI and continued to improve at the 6 months follow-up (36±4%). In group B1 LVEF did not improve after PCI, but increased after levosimendan from 23±4% to 32±4% and remained constant at 6 months. In group B2 LVEF 26±4% did not change following both interventions. Reverse remodeling with a decrease in end-diastolic and end-systolic diameters was observed only in groups A and B1. Group B2 had a dismal prognosis with 36% in-hospital and 43% six months mortality. Groups A and B1 had a lower in hospital (4.7%, 4.5%) and mid term (11%, 11%) mortality.

Conclusion: Improvement of LV size and function with better prognosis can be expected in the majority of patients undergoing PCI for decompensated ischemic HF. Levosimendan enhanced the recovery of LV function post PCI.