Poster Session

P1401

The prognostic value of the reduction of coronary flow velocity reserve in non-ischemic heart failure patients

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Background: Coronary microvascular abnormalities determining a reduction of coronary flow velocity reserve (CFVR) have been described in patients (pts) with non-ischemic heart failure (HF).

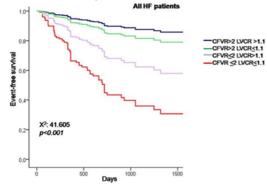
Aim: To assess the prognostic value of CFVR in HF.

Methods: In a prospective, observational, multicenter study, we recruited 333 pts with angiographically normal coronary arteries: 105 patients with HF and preserved (>50%) ejection fraction (HFpEF); 71 with HF and mid-range (40-50%) ejection fraction (HFmrEF); 157 with HF and reduced (<40%) ejection fraction (HFrEF). All patients underwent vasodilator SE with dipyridamole (0.84 mg/kg) in 10 accredited laboratories of 5 countries (Argentina, Brazil, Italy, Mexico, Serbia). CFVR was calculated as the stress/rest ratio of diastolic peak flow velocity pulsed wave-Doppler assessment of LAD flow. In all patients we also assessed left ventricular contractile reserve (LVCR) based on force (systolic blood pressure/end-systolic volume) Abnormal cutoff values were ≤2.0 for CFVR and ≤1.1 for LVCR. All pts were followed-up.

Results: After a median follow-up time of 15 months, 78 events occurred: 36 hospital admissions for acute decompensated heart failure, 23 deaths, 16 worsening in NYHA functional class, 2 stroke and 1 late revascularization. Event-free survival was best in patients with preserved CFVR and LVCR and worst in pts with reduced CFVR and impaired LVCR, with intermediate values for patients with either one (CFVR or LVCR) abnormal results: see figure. A preserved CFVR was associated with a better 24-month event-free survival than reduced CFVR in a subset analysis in pts with HFpEF (HR = 16.2, 95% CI, 1.8-145.1, p = 0.001) and in HFrEF (HR = 3.06, 95% CI, 1.6-5.6, p < 0.001). A multivariable analysis in the overall group of HF pts identified a reduced CFVR as the only independent predictor of event-free survival (HR = 3.455,95% CI 1.723-6.929).

Conclusions: A reduction in CFVR identifies a high risk subset in HF patients, outlining a shared role of coronary microvascular abnormalities as a marker and potential therapeutic target of HF, independently of underlying EF.





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