

1675

ABCDE vasodilator stress echocardiography in non-ischemic heart failure

Kuznetsova N.¹; Borguezan Daros C.²; Zanella H.³; Ciampi Q.⁴; Cortigiani L.⁵; Gaibazzi N.⁶; Zagatina A.⁷; De Castro E Silva Pretto JL.⁸; Djordjevic-Dikic A.⁹; Simova I.¹⁰; Amor M.¹¹; Merlo PM.¹²; Lowenstein J.¹²; Torres MAR¹³; Picano E.¹⁴

¹Moscow University Medical School, Cardiology, moscow, Russian Federation

²Hospital San José, Cardiology, Criciúma, Brazil

³National Institute of Cardiology Ignacio Chavez, Cardiology, Mexico City, Mexico

⁴Fatebenefratelli Hospital, Division of Cardiology, Benevento, Italy

⁵San Luca Hospital, Cardiology, Lucca, Italy

⁶University Hospital of Parma, Cardiology, Parma, Italy

⁷Saint Petersburg Pavlov State Medical University, Cardiology, Saint Petersburg, Russian Federation

⁸Hospital Sao Vicente, Cardiology, Passo Fundo, Brazil

⁹Clinical center of Serbia, Cardiology, Belgrade, Serbia

¹⁰City Clinic, Cardiology, Sofia, Bulgaria

¹¹Ramos Mejia Hospital, Cardiology, buenos aires, Argentina

¹²Cardiodiagnosticos, Investigaciones Medicas, Cardiology, buenos aires, Argentina

¹³Federal University of Rio Grande do Sul, Cardiology, Porto Alegre, Brazil

¹⁴Institute of Clinical Physiology, CNR, Biomedicine Department, Pisa, Italy

OnBehalf: Stress Echo 2020 study group of the Italian Society of Cardiovascular Imaging

Background: ABCDE-stress echocardiography (SE) may explore different aspects in the heterogeneous entity of known or suspected heart failure (HF).

Aim: To assess ABCDE-vasodilator SE in non-ischemic HF

Methods: In a prospective, observational, multicenter study, we recruited 428 patients with angiographically normal coronary arteries: 148 patients with HF and preserved (>50%) ejection fraction (HFpEF, Group 1); 100 with HF and mid-range (40-50%) ejection fraction (HFmrEF, Group 2); 180 with HF and reduced (<40%) ejection fraction (HFrEF, Group 3). A group of 75 healthy asymptomatic patients (30 male, 40%, age 57 ± 14 years) referred to testing for screening was also selected (Controls). All patients underwent vasodilator SE with dipyridamole (0.84 mg/kg) in 14 accredited laboratories of 5 countries (Argentina, Brasil, Russian Federation, Serbia and Italy). The ABCDE-SE protocol was adopted: A for regional wall motion abnormalities; B for B-lines (positivity criterion: stress ≥ rest for ≥ 2 points in a 4-site simplified scan available in 181 pts and 10 controls); C for left ventricular contractile reserve (LVCR) based on force (systolic blood pressure/end-systolic volume, positivity criterion: peak/ rest ≤1.1); D for pulsed wave Doppler-based assessment of coronary flow velocity reserve (CFVR) in left anterior descending coronary artery (positivity criterion: peak/rest ≤2.0); E for EKG-based assessment of heart rate reserve (positivity criterion: peak/rest ≤1.22).

Results: All positivity criteria, except A, were more prevalent (p<.01) in Group 3 compared to Group 2, in Group 2 compared to Group 1, and Group 1 compared to controls: see figure. In particular, a blunted heart rate reserve was found in 4/75 controls (5%), 27/148 pts of Group 1 (18%), 28/100 of Group 2 (28%) and 98/180 of Group 3 (54%).

Conclusions: ABCDE-vasodilator SE can help to identify the profound pathophysiological heterogeneity underlying a similar clinical presentation in patients with known or suspected HF with angiographically normal coronary arteries. These patients rarely show stress-induced regional wall motion abnormalities (A), but may exhibit pulmonary congestion (B), reduced myocardial functional reserve (C), altered coronary microcirculation (D) and cardiac autonomic dysfunction (E).

Abstract 1675 Figure. The positivity rate of ABCDE criteria

