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Title: Stress Echo 2020: ad-interim report

Topic: 11.01 - Dipyridamole stress echo

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On Behalf: Stressecho 2020 study group

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Background: The curiosity-driven effectiveness trial "Stress echo (SE) 2020" (ClinicalTrials.gov ID: NCT03049995) started in late 2016 to provide prospective, international, large scale evidences on SE utilization in the real world within and beyond coronary artery disease. The target (by the end of 2020) is to have 100 centers recruiting 10,000 patients on 10 different subprojects.

Purpose: to assess the progress of SE2020 study at 9 months after study kick-off

Methods: The project was approved by the ethical committee of the principal investigator center in July 20, 2016; launched at European society Cardiology meeting on August 29, 2016; and started recruitment (first patient-in in the leading center) on September 1, 2016. All candidate readers had to pass quality control upstream to recruitment, completed as per May 20th, 2015 by 70 readers for regional wall motion (RWM); of them, a subset of 41 also completed B-lines reading. Overall, 31 different laboratories from 12 countries completed the quality control procedures (Argentina, Brazil, Bulgaria, Costa Rica, Hungary, Italy, Lithuania, Poland, Russia, Serbia, UK, US); of them, 23 started recruiting following local ethical committee clearance. The chosen stress (left to physician choice and tailored on specific diagnostic question) was exercise in 779, dipyridamole in 568, and dobutamine in 108 patients. The optimal core protocol was quadruple imaging: RWM (mandatory in all); left ventricular contractile reserve (LVCR, force, stress/rest); B-lines (4-regions scan); left anterior descending coronary artery flow velocity reserve (CFVR).

Results: 1460 patients were recruited by 23 certified laboratories as per May 20th, 2017. Overall, the 1460 patients were distributed as follows: candidates to cardiac resynchronization therapy (n=8, target by the end of 2020=250); heart failure with reduced ejection fraction (124 patients, target 2500); hypertrophic cardiomyopathy (n=57, target 250); heart failure with normal ejection fraction (23, target 250); valvular heart disease (28, target 250); known or suspected coronary artery disease (1016 patients, target 2500); extreme physiology (n=190, target 240); congenital heart disease (5, target 250); borderline, early or at risk pulmonary hypertension (n=15, target 250); genetic stress echo in offspring of familial primary hypertension, dilated cardiomyopathy or hypertrophic cardiomyopathy (n=0, target 250). By imaging modality, 1126 patients had dual, 757 triple, and 511 quadruple imaging (see Figure).

Conclusions: The effectiveness, curiosity-driven, observational SE2020 study is feasible in a large international network and is reshaping of SE practice with dissemination of novel parameters (progressively converging into quadruple imaging as the core protocol) and new applications (mainly outside coronary artery disease).
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