“Next generation” Stress Echo Computerized Software (SECS)

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Background. Several specialized softwares for the elective storage of stress echo (SE) laboratory data are commercially available, but the rapidly changing shape of “next generation” SE with novel parameters (coronary flow reserve, B-lines, etc) and extended applications (valvular heart disease, heart failure, cardiomyopathy, etc) poses new challenges and needs.

Purpose: To develop a novel software for “next generation” SE data storage and reporting.

Methods: The SE 2020 Italian multicenter study was recently started networking > 100 accredited SE labs targeting the recruitment of 10,000 patients within year 2020, in a variety of different diseases, from coronary artery disease to heart failure, from cardiomyopathy to congenital heart disease. To allow a standardized, flexible, and omnivorous comprehensive data entry we developed a second generation software (stress echo computerized software, SECS 2.0) with a general data entry (patient-specific, disease-specific and stress-specific) and project-tailored pages.

Results: The program prototype has already been distributed for beta-testing in 10 labs of the steering committee participants of the study. The data entry requires < 5 min. The software runs with medium-low performance computers, and with the most popular operating systems such as Windows, MAC OS and Linux, in order to reach the most users. The export functions towards widely accepted formats allow easy data sharing. It can generate a customized report that can be expanded in various formats such as PDF and word. An example of a project-specific report is shown in Figure (subproject 2, BHEF: B-lines in Heart Failure)

Conclusion: The software SECS 2.0 provides a suitable informatics infrastructure for SE 2020 Italian multicenter study, with intuitive graphic interface, eye-catching graphic format and convenient reporting option. It may represent the trade-off between the comprehensive information required by scientific standards and the smooth workflow priority of busy, high volume, clinically-driven activities. At the end, with properly trained and well motivated partners, SECS 2.0 may prove to be fun.