Editor's Note

Johan H. C. Reiber¹

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Dear reader,

For this issue I would like to recommend the paper entitled “Inter-vendor variability in strain measurements depends on software rather than image characteristics” by Dr S Ünlü and co-authors on behalf of the EACVI-ASE-Industry Standardization Task Force, chaired by Dr Luigi P. Badano on behalf of the EACVI-ASE-Industry Standardization Task Force, chaired by Dr Jens-Uwe Voigt for the participating companies [1]. The goal of this paper was to investigate the reproducibility, accuracy, and scar detection ability of strain measurements on ultrasound images acquired from different vendors by using a single vendor-independent strain-analysis software solution, being the Tomtec Image Arena 2D CPA V1.3 version. A total of 63 participants (58 patients and 5 volunteers) were scanned by the same sonographer on

echo-machines of all four participating companies, being GE, Philips, Siemens and Toshiba. The tracking feasibility, inter-vendor bias, the relative test-re-test variability and scar discrimination ability of strain measurements were assessed. Cardiac magnetic resonance (CMR) delayed enhancement images were used as the reference standard of scar definition.

As demonstrated in the article and illustrated in the below Fig. 2, in which the Global Longitudinal Strain (GLS) is plotted against the average of the values from the different machines, very high correlation coefficients were obtained and no differences in GLS calculations. Also, the relative test-re-test errors of GLS ranged from 7.1 to 8.7% without statistically significant differences among images from the four different vendors.

✉ Johan H. C. Reiber
J.H.C.Reiber@lumc.nl

¹ Leiden, The Netherlands

For the Segmental Longitudinal Strain (SLS) values, no differences were found for the peak-systolic strain, and the end-systolic strain, but there were differences for the post-systolic strain. Further, in the images from all four vendors, significantly lower absolute strain values were found in the scar regions versus the normal regions, and the associated ROC curves showed area-under-the-curve values (AuC) with modest differences.

The authors concluded from this first study directed at a head-to-head comparison of strain measurements using a vendor-independent speckle-tracking echocardiographic software package on images from the four major ultrasound machine vendors, that major differences were found in the feasibility to track images from the different sources. When trackable, however, the variability of GLS measurements among images from the different sources was low. Likewise, the average SLS values were similar, as was the performance in regional scar detection, but the variability of segmental measurements was too high for clinical use.

The authors are to be congratulated on this nice work, and of course I refer the readers to the paper in this issue of the International Journal of Cardiovascular Images for more details.

Johan HC Reiber, PhD

Editor-in-chief

Reference

1. Ünlü S, Mirea O, Bézy S et al (2021) Inter-vendor variability in strain measurements depends on software rather than image characteristics. *Int J Cardiovasc Imaging*. <https://doi.org/10.1007/s10554-020-02155-2>

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