i188 Abstracts

Poster Session

## P326

## Changes in left atrial dimensions during stress echocardiography: linear vs planimetric methods

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OnBehalf: On behalf of the Stress Echo 2020 study group of the Italian Society of Echocardiography and Cardiovascular Imaging (SIECVI)

**Background** The measurement of left atrium (LA) can be obtained with simple linear or more complex biplane disk summation Simpson (S) method at rest and during stress echocardiography (SE). Although planimetric methods are mandatory to accurately assess resting LA volume, we sought to study if linear (L) methods can be equally valuable in assessing dynamic changes during SE.

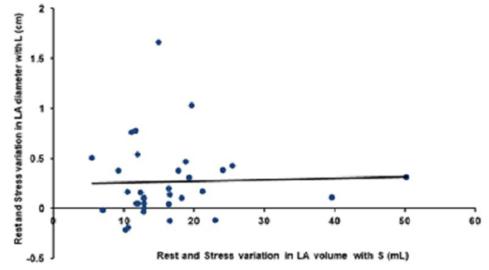
Purpose: To assess accuracy of LA- SE with S compared to L method.

**Methods:** SE was performed in 34 patients (age  $59 \pm 16$  years, 18 females) with known or suspected coronary artery disease. All had acceptable acoustic window at rest and were referred for clinically-driven SE (dobutamine in 21, dipyridamole in 13). LA was measured at rest and peak stress with both methods: 1- S biplane method from 4- and 2-chamber views; 2- L method with measurement of anteroposterior diameter from 2-D targeted M-mode in parasternal long-axis view. Two independent observers measured a set of 20 clips and repeated the measurements after 1 month on the same images. Stress-rest differences of L and S were compared with Spearman non-parametric correlation.

**Results:** LA measurement was obtained in all patients with L, 34/42 with S (feasibility 100%, and 80%, respectively). The off-line analysis time at each step (rest and stress) measured by stop-clock was 22.3 sec for L and 93 sec for S method (p < 0.001). The intra-rater intra-class correlation coefficient for L was 0.965 for single measures and 0.982 for average measures. For S, it was 0.830 in single measures and 0.907 for average measures. The inter-rater correlation coefficient for L was 0.920 for single measures and 0.958 for average measures. For S, it was 0.901 for single measures and 0.948 for average measures. Absolute LA dimensions were moderately correlated between S and L at rest (r = 0.61, p < 0.01), and during stress (r = 0.476, p < 0.01). Rest-stress variations were not correlated (r = 0.004, p = NS).

Conclusion LA measurement is highly feasible during SE with L and S methods. Absolute values with both are only moderately correlated at rest, less at peak stress, and not correlated when only rest-to-stress variations are considered. Although L is more feasible, less time-consuming, and more reproducible, S should be the first choice for more accurate assessment of rest-stress LA dimensions in pharmacologic SE.

Abstract P326 Figure. Correlation of LA rest-stress



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