Heart Failure and Cardiomyopathies

MYOCARDIAL SEGMENTAL THICKNESS VARIABILITY ON ECHOCARDIOGRAPHY IS A HIGHLY SENSITIVE AND SPECIFIC MARKER TO DISTINGUISH ISCHEMIC AND NON-ISCHEMIC DILATED CARDIOMYOPATHY IN NEW ONSET CONGESTIVE HEART FAILURE

Poster Contributions
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Background: Distinction of ischemic dilated (ICM) from non-ischemic dilated cardiomyopathy (NICM) in new onset heart failure (HF) patients can be challenging. Our aim was to determine diagnostic markers that distinguish the two.

Methods: We retrospectively identified 68 consecutive new HF patients with dilated cardiomyopathy (valvular etiology excluded) over a 7 month period. Clinical risk factors, medications, serum biomarkers, EKG and echo variables were compared between ICM and NICM (as confirmed by coronary angiography) using χ2 and ANOVA. Their diagnostic value was assessed using ROC analysis.

Results: Mean age, left ventricular (LV) size and LV ejection fraction of the study population were 53 years, 6.1 cm and 26% respectively. A total of 20% had ICM. Patients with ICM were older (64 vs 50 years; p=0.006). No significant difference was observed between ICM and NICM patients based on 16 clinical variables, 7 laboratory tests, 6 EKG parameters and 11 of the 13 echo markers evaluated. Segmental wall thickness variability and regional wall motion abnormality on echo differentiated ICM from NICM. Wall thickness variability outperformed wall motion abnormality in diagnosing ICM with a sensitivity and specificity of 85.7% and 98.1% versus 64.3% and 81.5% respectively (figure).

Conclusion: Myocardial segmental thickness variability on echo, resulting from thinned infarcted or hibernating myocardium, is a highly sensitive and specific marker to differentiate ICM from NICM in new onset HF.
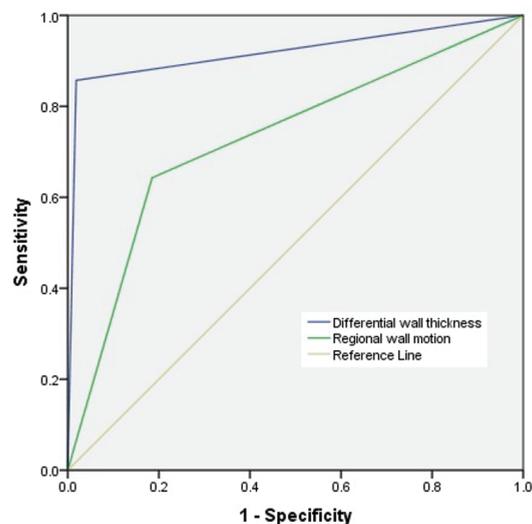
ROC curves demonstrating the diagnostic performance of myocardial segmental thickness variability and regional wall motion abnormality on 2D echocardiography in distinguishing ICM from NICM, when compared to coronary angiogram.
ROC: Receiver operator curve; ICM: Ischemic dilated cardiomyopathy; NICM: Non-ischemic dilated cardiomyopathy