IMPLICATIONS OF THE DISCREPANCY IN EJECTION FRACTION REPORTING BETWEEN ECHOCARDIOGRAPHY AND RADIONUCLIDE ANGIOGRAPHY IN A TERTIARY CARE HEART FUNCTION CLINIC

Poster Contributions
Hall C
Monday, March 31, 2014, 9:45 a.m.-10:30 a.m.

Session Title: Heart Failure and Cardiomyopathies: Prognostic Factors and Determinants of Outcomes in Heart Failure Patients
Abstract Category: 12. Heart Failure and Cardiomyopathies: Clinical
Presentation Number: 1261-200

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**Background:** Radionuclide angiography scans (RNA) and echocardiography (echo) are both frequently employed to provide an assessment of ejection fraction and provide important information for ICD/CRT device selection. RNA scans are believed to provide a more accurate assessment of ejection fraction (EF) compared to standard echo, but are not widely available and require exposure to radiation. This study was designed to evaluate the relationship between EF reporting by echo and RNA in a “real-world” HF clinic, and identify clinical and anatomic predictors associated with a discrepancy between the two tests.

**Methods / Results:** This was a prospective observational study of 97 patients from the University of Ottawa Heart Institute Heart Function clinic. Ejection fraction was determined by Level 3 echocardiographers and a semiautomatic count-based approach was used for RNA scans; with an average time between tests of 3.7±12 days. The mean age was 58.9±13.9 yrs; 26% were female, mean BMI was 34±10, 35% had atrial fibrillation (AF) at baseline and 52% had an ischemic cardiomyopathy. The mean EF was 33 ±12% for echo and 31±12% for RNA. The overall correlation between the two tests was good (r=0.71, p<0.001). A significant discrepancy was defined as a difference of greater than 10 absolute EF units between tests and was observed in 21% of the population. There was a non-significant trend for these patients to have a greater rate of AF (27% vs. 17% without, p=0.29); but body size, etiology and cardiac size were not significant predictors. A total of 46% (n=45) of the population had an echo EF <30%. However 36% (n=16) of this cohort had a RNA EF> 30%. Similarly, in the cohort of patients with an echo >30% (n=52), 27% (n=14) of these patients had an RNA EF<30%.

**Conclusion:** Discrepancies (>10 EF units) between standard echocardiography and RNA EF reporting occurred 21% of the time in a “real world” tertiary care cardiac centre. Echo-RNA mismatch over an ejection fraction of 30% was identified in approximately one third of the subjects and has important clinical implications when selecting patients for cardiac devices.