



## Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

### COMPARISON OF CZT SPECT AND CARDIAC MR DERIVED CARDIAC FUNCTION AND VOLUMES IN PATIENTS WITH SIGNIFICANTLY REDUCED EJECTION FRACTION

Poster Contributions  
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**Background:** Myocardial perfusion imaging (MPI) is widely used for prognostication and revascularization decisions. Compared to traditional nuclear cameras, cadmium-zinc-telluride (CZT) cameras provide improved definition, faster scan times and lower radiation exposure. Although previous studies have validated CZT measured ejection fractions (EF) and volumes, the validity of these scanners in patients with EF < 35% is not well documented. We sought to validate the accuracy of CZT cameras for the measurement of EF and volumes as compared to the gold standard of cardiac magnetic resonance imaging (MRI).

**Methods:** We analyzed 162 patients who underwent CZT imaging and cardiac MRI within 6 months from 2009 to 2015. Measurements of EF and end-diastolic volume (EDV) were compared.

**Results:** Patient demographics: age 59±14 years, 36% females, EF= 49.5±17.5% by MPI and 50.9±17.1% by MRI. There was a strong correlation between CZT and MRI derived EF and EDV, r=0.83, 0.90 respectively (figures A, B). Bland and Altman analysis did not show a systematic bias at low or high EF (Figure C). There was better agreement between CZT and MRI volumes when EDV was <200 ml (Figure D).

**Conclusions:** CZT imaging accurately assesses EF and left ventricular EDV in patients with low ejection fractions. With MRI as reference, CZT accurately classified 88.5% of patients as having EF<35% vs. higher. In addition to myocardial perfusion assessment, EF and volumetric data obtained from CZT cameras can be reliably used in patient care.

