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Trends in Clinical Cardiovascular Magnetic Resonance (CMR) Utilization

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Background: Cardiovascular magnetic resonance (CMR) imaging has emerged in the past decade as a non-invasive imaging modality capable of providing high resolution cardiac images. New techniques including routine use of Gadolinium administration along with delayed enhancement provide unique information for accurate tissue characterization especially for ischemic and non-ischemic cardiomyopathies.

Purpose: To record CMR use over a period of 8 years and characterize trends in CMR utilization.

Subjects and methods: Retrospective analysis of a prospectively maintained database was performed. Data regarding patients scanned between January 2003 and October 2011 was queried for patient demographics and scan indications.

Results: A total of 3557 patients (61% males) were scanned. Scans performed increased significantly over the 8 year period in the following manner: 11 scans (2003), 177 scans (2004), 309 scans (2005), 428 scans (2006) 435 scans (2007) 455 scans (2008), 611 scans (2009), 646 scans (2010), 552 scans (Jan-Oct 2011). The main indications and their percent change from 2004 and 2011 were as follows: tumor evaluation (from 9% in 2004 to 6% in 2011), RVD (from 1% to 10%), myocarditis (from 2% to 11%), cardiomyopathy (from 3% to 20%), STEMI (from 0% to 7%), Stress CMR (from 0% to1.4%), T2*for cardiac iron overload (from 0% to 7%), MR angiography (from 70% to 27%).

Conclusions: A substantial increase in CMR scans performed for all indications occurred during the 8 year period. Analyzing the trends in CMR utilization demonstrates a significant increase in the percent of CMR studies performed for cardiomyopathy, myocarditis and STEMI evaluation. This trend affirms the increasing acceptability of CMR as an imaging modality in the cardiology arsenal.