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Title: Safety and practices during stress cardiac magnetic resonance in COPD: A 3-year experience from a tertiary referral centre

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Body: Introduction Significant cardiovascular mortality exists in COPD which may prompt increased referrals to exclude coronary disease. Reservations persist about cardiovascular magnetic resonance (CMR) adenosine perfusion imaging (PI) in COPD. Aims To look at patterns of referral, safety and practices of PI in COPD. Methods 54 consecutive COPD patients (mean age 66.2±9, 41 Male, 13 females) who underwent CMR between 2008-2011 were identified from the hospital imaging registry and a retrospective record review performed. Results There were increased COPD referrals for CMR year on year. Reasons included PI (44), anatomy (3), cardiomyopathy (2), pre-operative (2) and routine function (2) assessment. Tolerability of CMR was good. Difficulties included claustrophobia (2) and poor image quality due to dyspnea (4) and arrhythmia (1). 32/44 underwent PI and all but 2 were successfully completed, with no reported chest pain, palpitations, wheeze, nausea or heart block and only one case of dysnpnoea. Reasons for not proceeding with PI were COPD (6), “airways disease” (4), claustrophobia (2) and asthma (1), which appears to have been based on physician’s judgment rather than objective measures, with only 8/44 pulmonary function test (PFT) records being available at the tertiary centre at the time of the scan. Review of 31/44 PFTs showed no difference in age (p=0.53), FEV1% predicted (p=0.37) or Airflow obstruction (AO) (p=0.78) between those that did and did not proceed to PI with 9.7% misdiagnosed as having AO. Conclusion The use of PI in COPD is increasing. Concerns over safety persists but appear unfounded and may result in suboptimal management of this high-risk group.