Abstract 114 Table 1

Patients with MVD n=12			LAD		LCX		RCA	
			3D WH CMR	2D HiRes CMR	3D WH CMR	2D HiRes CMR	3D WH CMR	2D HiRes CMR
Flow limiting disease with perfusion defects	FFR positive	CMR positive	12	11	5	3	9	8
Flow limiting disease but no perfusion defects	FFR positive	CMR negative	0	1	2	4	2	3
Perfusion defects but no flow limiting disease	FFR negative	CMR positive	0	0	3	1	0	0
No flow limiting disease and no perfusion defects	FFR negative	CMR negative	0	0	2	4	1	1
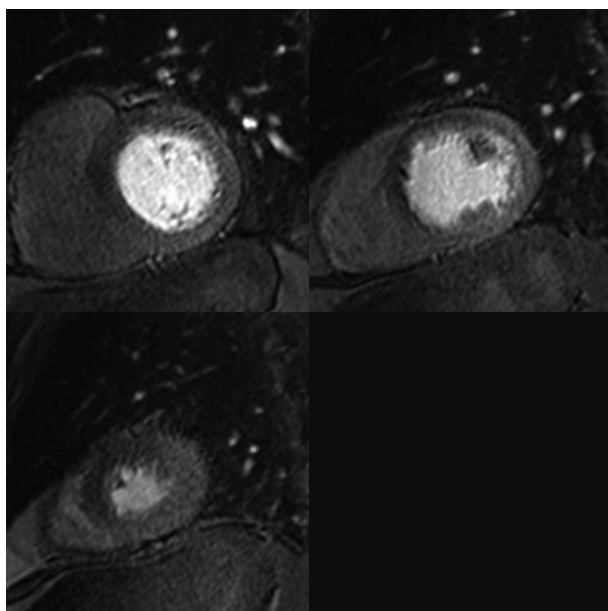
Abstract 114 Figure 2 High resolution 2D perfusion images in the same patient showing perfusion defects in the LAD territory only (see blue arrows)

the LAD territory appears to be best. Discrepancy appears to be most in the circumflex territory. 3D perfusion CMR appears to detect circumflex ischaemia more accurately possibly due to better coverage of the basal left ventricle. (Ref Fig 1 and Fig 2) The lateral wall is often the thinnest making it more difficult to detect perfusion abnormalities – better coverage with 3D may be beneficial here. However, in the circumflex vascular territory we also observe that, in the absence of flow limiting disease in the circumflex artery (comparatively with the LAD and RCA) perfusion defects appear to be more prevalent, reflecting a limitation of the AHA classification.

DIAGNOSTIC CONCORDANCE AND CLINICAL OUTCOMES IN PATIENTS UNDERGOING FRACTIONAL FLOW RESERVE AND STRESS ECHOCARDIOGRAPHY FOR THE ASSESSMENT OF CORONARY STENOSIS OF INTERMEDIATE SEVERITY

[1]Sothinathan Gurunathan*, [1]Ahmed Elghamaz, [1]Asrar Ahmed, [1]Grace Young, [1]Anastasia Vamvakidou, [1]Nikos Karogiannis, [1]Ihab Ramzy, [2]Roxy Senior. [1]Northwick Park Hospital; [2]Northwick Park Hospital and Royal Brompton Hospital

Introduction The ischaemic consequences of a coronary artery stenosis can be assessed by invasive fractional flow reserve (FFR) or by non-invasive imaging. We sought to determine (i) the concordance between wall thickening assessment and FFR during clinically indicated stress echocardiography (SE) and FFR measurements and (ii) the predictors of hard events in these patients.

Methods and Results 194 patients who underwent SE and invasive FFR measurements in close succession were analysed for diagnostic concordance and clinical outcomes. At the vessel level, the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of SE for identifying significant disease as assessed by FFR was 70%, 78%, 46% and 91% respectively. In patients with single vessel disease, the sensitivity, specificity, PPV and NPV were 86%, 66%, 38% and 95% respectively. The greatest discordance was seen in patients with wall thickening abnormalities (WTA) and negative FFR. During a follow up of 3.0 ± 1.9 years there were 15 cardiovascular (CV) events. The number of wall segments with inducible WTAs emerged as the only independent predictor of CV events (HR 1.22 (1.05–1.43), p=0.01). FFR was not a predictor of outcome. There was a significant increase in event rate in patients with WTA/negative FFR and WTA/positive FFR, compared to patients with no WTA (p=0.04). However, no significant difference was seen between patients with WTA/negative FFR versus WTA/positive FFR (p=0.38)
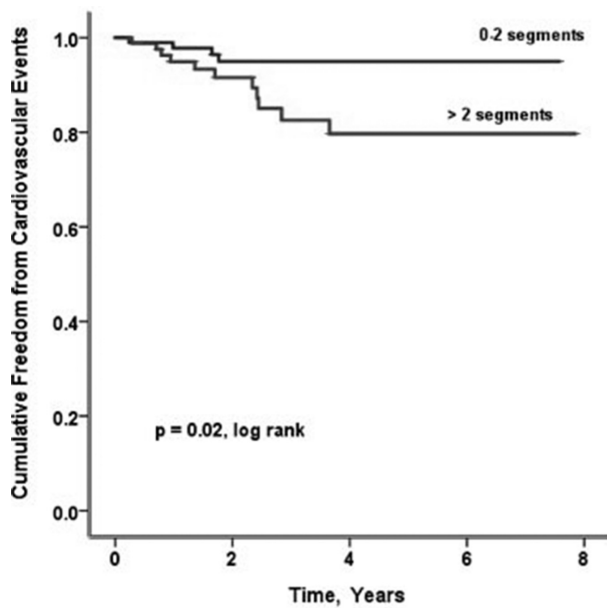
Abstract 115 Figure 1
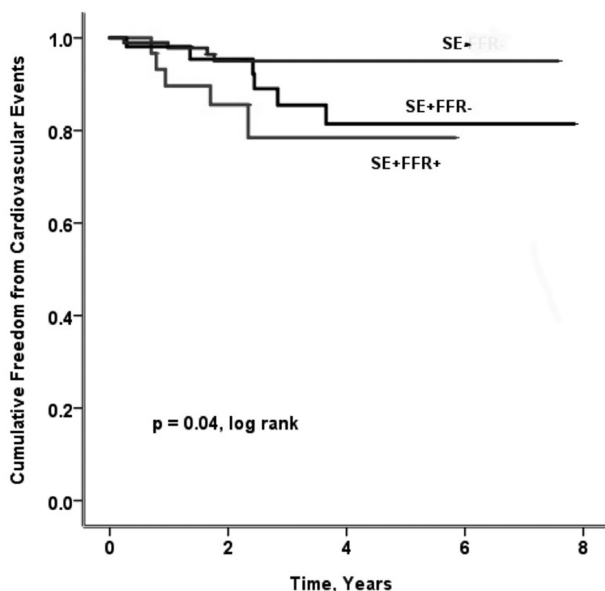
Abstract 115 Figure 2

Conclusion In a patient population with significant CV risk factors, a normal SE effectively ruled out abnormal FFR. The greatest discordance was seen in patients with abnormal SE/ normal FFR. In this group, patients had similar outcomes compared to those with abnormal SE/positive FFR but worse outcomes compared to patients with a normal SE. These findings have significant clinical implications.

CT CORONARY ANGIOGRAPHY VERSUS CORONARY ARTERY CALCIUM SCORING FOR THE OCCUPATIONAL ASSESSMENT OF MILITARY AIRCREW

[1]Iain Parsons*, [1]Christopher Pavitt, [2]Rebecca Chamley, [3]Jo D'Arcy, Ed Nicol. [1]*Royal Brompton*; [2]*Royal Berkshire*; [3]*John Radcliffe*

Introduction To ensure flight safety military aircrew undergo regular clinical and occupational assessment. Coronary artery calcium scoring (CACS) is established as an imaging modality to non-invasively assess coronary artery disease (CAD). CT coronary angiography (CTCA) potentially offers a more accurate assessment of CAD but has not been formally assessed in military aircrew. This retrospective cohort study is designed to compare the theoretical differences in downstream investigations and occupational outcomes in aircrew with suspected CAD comparing CTCA with existing CACS pathways.

Methods A 2 year retrospective cohort study of consecutive UK military patients who underwent a CTCA and CACS. Patient demographics, CTCA and CACS results and initial and final occupational restrictions were analysed comparing current UK, Canadian and US pathways.

Results 44 patients underwent CACS and CTCA. The commonest indication for a CTCA was a positive exercise ECG. Increasing CACS, stenosis severity and stenosis burden were associated with significantly greater likelihood of occupational restriction (p=<0.01). Following CTCA (26/44, 59%) of patients were found to have evidence of CAD with (13/44, 30%) having at least a single vessel stenosis 50%. All of these patients had subsequent occupational restrictions. Two patients with a calcium score 10 had at least one single vessel stenosis 50%.

Conclusion A CTCA pathway is potentially a better discriminator of CAD burden in aircrew when compared with CACS and may reduce downstream testing, allowing a more efficacious approach to CAD assessment in military aircrew.

INCIDENTAL FINDING OF CORONARY ARTERY CALCIFICATION IN NON-TRIGGERED HIGH-RESOLUTION THORACIC COMPUTED TOMOGRAPHY: A RETROSPECTIVE STUDY OF REPORTING STANDARDS IN A SINGLE TRUST

[1]Sushant Saluja*, [1]Janousek Pavel, [1]Divya Raj, [1]Bruce Irwin, [1]David Zhu, [1]Timothy Gray, [1]Mark Hargreaves, [1]Aung Sett, [2]Simon Anderson. [1]*Pennine Acute Trust*; [2]*Manchester Royal Infirmary*

Aims Coronary artery calcium (CAC) score is an important tool in determining the risk of developing heart disease. The measurement of this score has traditionally been based on using ECG triggered computed tomography (CT). Emerging evidence has revealed that there is excellent concordance between gated and non-gated CT scans in identifying CAC. We aimed to evaluate the incidental prevalence and burden of CAC on non-gated High Resolution CT (HRCT) thorax used