connections. This study uses MR time resolved angiography to examine contrast circulation in a cohort of patients with Fontan circulation to optimise contrast injection protocol for CT. 

**Methods** Time to peak signal intensity was recorded using regions of interest on the aorta, the pulmonary arteries and the Fontan conduit on MR TWIST angiography images. Patients were stratified into groups according to ejection fraction, global longitudinal strain, indexed stroke volume and cardiac index to examine the effect on time to peak signal intensity.

**Results** 35 patients were included in the study. Mean time to peak contrast enhancement was 31s in the thoracic aorta, 46s in the right pulmonary artery, 41s in the left pulmonary artery and 55s in the Fontan conduit. Cardiac performance shows little relationship to peak vascular enhancement whether measured by ejection fraction, global longitudinal strain, stroke volume index and cardiac index.

**Discussion** This MRI data suggest that optimal timing for a single phase examination to show all the major vessels is around 55 seconds following start of contrast injection. In TWIST MR angiography the IV bolus is 4-5 seconds long. A longer bolus is required for CTA, around 20s, suggesting an additional delay will be required. Further work will be done to see is a single phase examination at 70 seconds is an ideal initial strategy, with targeted further imaging if unsuccessful.

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**THORACIC AORTA AND PULMONARY ARTERY DIMENSIONS IN PATIENTS UNDERGOING ECG-GATED COMPUTED TOMOGRAPHY ANGIOGRAPHY**

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**Introduction** Normal values for vascular dimensions are derived from echocardiography or magnetic resonance imaging (MRI), with limited data available on electrocardiogram (ECG)-gated computed tomography (CT) angiography. This abstract assesses aortic and pulmonary artery diameters and the factors affecting them, in patients undergoing CT as part of the SCOT-HEART (Scottish CoMputed Tomography of the HEART) trial.

**Methods** Vessel diameters were measured on CT coronary angiography (CTCA) in six locations: annulus, sinus of Valsalva (SOV), sinotubular junction (STJ), ascending and descending aorta at right pulmonary artery level, and main pulmonary artery (MPA). The SCOT-HEART database provided demographics and cardiovascular risk factor information.

**Results** Images of 1000 patients (mean age 58±9, 58% male) were assessed. Amongst patients with normal coronary arteries and no history of hypertension, mean dimensions were: annulus short-axis 19±2mm, annulus long-axis 27±3 mm, SOV 31±4 mm, STJ 27±3 mm, ascending aorta 30±4 mm, descending aorta 22±2 mm, and MPA 23±3 mm. Male sex, height, and body surface area (BSA) correlated with increases in all dimensions (p<0.001). Age correlated with aortic dimensions only (p<0.03). Patients with normal coronary arteries on CTCA had smaller aortic dimensions (p<0.02), apart from at the annulus. Sex and BSA were independent predictors of all dimensions. Hypertension was an independent predictor of some aortic dimensions. Age was an independent predictor of all aortic dimensions, except the annulus.

**Conclusion** Aortic and pulmonary dimensions can be assessed on CTCA, with sex and BSA having an important impact on normal dimensions.