Moderated poster presentations

**M1** COMPUTED TOMOGRAPHY PRIOR TO TRANSCATHETER AORTIC VALVE IMPLANTATION IN THE UNITED KINGDOM
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**Introduction** This cross-sectional study sought to survey the current practice of computed tomography prior to transcatheter aortic valve implantation (CT-TAVI) in the United Kingdom.

**Methods** All members of the British Society of Cardiovascular Imaging (BSCI) were invited to complete a 27-item online CT-TAVI survey.

**Results** 47 responses were received from 40 cardiac centres, 23 (58%) of which performed TAVI on-site (TAVI centres). Only 6 respondents (13%) performed high volume activity (>200 scans per year) compared with 13 (28%) performing moderate (100–200 scans per year) and 27 (59%) performing low (0–99 scans per year) volume activity. Acquisition protocols varied (41% retrospective, 12% prospective with wide padding, 47% prospective with narrow padding), as did the phase of reporting (45% systolic, 37% diastolic, 11% both, 6% unreported) and use of beta blockade (22%). Median dose length product (DLP) was 675 mGy.cm (interquartile range 477 - 954 mGy.cm). Compared with non-TAVI centres, TAVI centres were more likely to report minimum ilio-femoral luminal diameter (n=25, 96% versus n=7, 58%, p=0.003) and optimal tube angulation for intervention (n=12, 46% versus n=1, 8%, p=0.02). TAVI centres trended towards using lower contrast volume than non-TAVI centres (98±27 vs. 118±42 ml, p=0.06); radiation doses did not differ (766±502 vs 801±461 mGy.cm, p=0.66).

**Conclusion** This national survey formally describes current CT-TAVI practice in the United Kingdom. High volume activity was only present at 1 in 7 cardiac CT centres. There is wide variation in scan acquisition, scan reporting and radiation dose exposure.

**M2** IMPROVING ARTERIAL OPAQUEATION IN COMPUTED TOMOGRAPHY FOR TRANS CathETER AORTIC VALVE REPLACEMENT
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**Introduction** Computed tomography (CT) prior to transcatheter aortic valve implantation (TAVI) requires adequate vascular opacification. With expert radiographer-led contrast dosing (standard protocol), a wide variation in arteriial opacification was observed.

**Methods** Considering the time required for the electrocardiographically (ECG)-gated and helical acquisitions (Siemens Somatom AS+ 128-slice scanner), an optimised weight-based protocol was developed using 30 s contrast bolus of iodine flux 15–19 mg/kg/s. Radiodensity [Hounsfield Units (HU)] was assessed with a circular region of interest in (a) ascending aorta (0.75 mm ECG-gated systolic acquisition) and (b) ascending, descending thoracic (at carina), infra-renal abdominal aorta and right external iliac artery (1–1.5 mm helical acquisition). Thirty-six sequential optimised scans were compared to 36 prior standard scans. All patients had adequate renal function (eGFR ≥45 ml/min/1.73 m²). There was no difference in the CARE kV between the protocols (p=0.67).

**Results** The mean patient age was 78 and 80 years (standard, optimised). The male to female ratio was 47:53 and 61:39 (standard, optimised). The mean bolus durations were 25±3 s and 30±0.3 s (standard, optimised); a significant variation (p<0.0001). While there was no difference in the arterial radiodensity in the ECG-gated ascending aorta (p>0.9), there was a significant improvement in the arterial radiodensity at all other anatomical points in the helical scans of the optimised protocol (p<0.0001).

**Conclusion** Optimising contrast flux and matching bolus duration to the CT technology dramatically improves TAVI planning scans with objectively improved arterial opacification. This results in better contrast opacification for optimal assessment of aortic valve prosthesis sizing and access strategies.

**M3** COMPARISON OF AORTIC VALVE AREA ON COMPUTED TOMOGRAPHY VERSUS ECHOCARDIOGRAPHY
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**Introduction** The imaging standard in the diagnosis and grading of aortic stenosis is the echocardiogram. However, computed tomography (CT) offers a more anatomically precise measurement of the left ventricular outflow tract (LVOT) area and aortic valve (AoV) area. The purpose of this study was to compare the AoV area measured by echocardiogram and CT.

**Methods** Data was prospectively collected on all patients undergoing CT for consideration of transcatheter aortic valve implantation (TAVI) from July 2019 - January 2020. Measurements of LVOT and AoV area were performed using validated software (TeraRecon, California). Echocardiographic measurements of the LVOT, peak velocity across the LVOT and the AoV were used to derive the AoV area using the continuity equation. Spearman correlation analysis was performed using R v3.3.3.

**Results** There were 19 patients in whom contemporaneous echocardiography was available. CT derived AoV area was positively correlated with echocardiographic measurements of AoV area (r=0.54, p=0.02) and LVOT area (r=0.58, p<0.01). However, echocardiography led to an underestimation of both LVOT area and AoV area. 89% of the error in AoV area estimation at echocardiography was due to LVOT measurement error. The combination of echocardiographic