Measurements of velocity with CT derived LVOT area led to improved estimation of AoV area, ($r_{s}=0.75$, $p<0.001$).

**Conclusion** The use of the continuity equation on echocardiography leads to underestimation of the AoV area. The combination of echocardiography and CT measurements makes the continuity equation estimate of CT area near the same as CT planimetry.

**M4** ANNUAL VERSUS SUPRA-ANNUAL SIZING FOR TRANSCATHETER AORTIC VALVE REPLACEMENT IN BICUSPID AORTIC VALVE DISEASE


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**Introduction** CT measurement of suprannular area (SA) has been proposed as an alternative to annular area (AA) for sizing of transcatheter valves in bicuspid aortic valve (BAV). This study examines the reproducibility of SA and AA measurements and their potential impact on downstream transcatheter heart valve sizing and clinical outcomes.

**Methods** 44 consecutive patients (mean age: 73±15 years, 57% male) undergoing CTA with subsequent SAPIEN 3 valve insertion for severe bicuspid aortic stenosis (AS) were included. AA was measured at the basal ring. SA was measured by generating a circle defined by the intercommisural distance. AA and SA were measured by 2 independent observers. Baseline characteristics, TAVR procedural data, and discharge echocardiography data were collected.

**Results** The SA was significantly larger than the AA (562±146 vs. 518±112 mm², $p=0.013$). Interobserver agreement was high using both techniques (ICC AA=0.98, $p<0.001$; SA=0.80, $p<0.001$), but with narrower limits of agreement with AA measurements (mean difference (limits of agreement): AA=-3 mm² (22;19), SA=-16 mm² (-92;76)). AA-based device sizing demonstrated substantial agreement with final valve size. These results suggest no role for supra-annular sizing in current clinical practice.

**Conclusion** Supra-annular sizing is less reproducible than annular sizing, with no difference in procedural complication rates in patients in whom supra-annular sizing would have altered the device size used. These results suggest no role for supra-annular sizing in current clinical practice.

**M6** COMPARING CTCA AND CACS IN ASSESSING RISK IN HIGH HAZARD OCCUPATIONS

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**Introduction** The role of Computed Tomography Coronary Angiography (CTCA) in assessing occupational risk in individuals in high hazard occupations with suspected CAD has not been fully explored. We explored how CTCA alters occupational disposition compared with coronary artery calcium scores (CACS), currently used by employers and regulatory bodies.

**Methods** 6-year consecutive data from high hazard employees undergoing CTCA were analysed. Demographics, CTCA (maximal stenosis and aggregate stenosis), CACS and occupational disposition pre- and post-CTCA were captured.

**Results** CTCA data from 139 individuals were collected; comprising 82 pilots and air traffic controllers, and 57 non-pilot aircrew and ground-based employees. Initially, all employees were medically restricted due to an abnormal exercise test (35%) or resting ECG (36%), cardiac symptoms (27%) or ≥2 risk factors (25%). After CTCA, 61% of pilots and controllers were returned to unrestricted flying, and 60% of non-pilot aircrew/ground-based employees were fully employable. Of the pilots and controllers with a CACS of <10 (n=55), 5% had a stenosis ≥50%. Of the non-pilot aircrew/ground-based employees with a CACS of <10, 15% had a stenosis ≥70%, (≥50% in the left main stem).

**Conclusion** CTCA effectively excludes CAD in most high hazard employees, allowing return to unrestricted roles. However, a substantial proportion with occupationally significant stenoses are not identified with CACS. Current use of these investigations by regulatory authorities/employers allows those at significant risk of coronary events to return to unrestricted high hazard employment. CTCA appears the most accurate non-invasive test to confirm or exclude suspected occupationally relevant CAD in high-hazard occupations.