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sub-study enrolled 2,064 pts. Pre-PCI imaging of 773 pts identified 907 culprit and 758 non-culprit native coronary artery lesions (>40% plaque burden, >1.5mm length). The relationship between renal function and lesion morphology was studied in tertiles of estimated CrCl (Cockroft-Gault).

**Results:** Patient age was 63±10 years, and 79% were male. Decreasing CCr was significantly associated with smaller mean vessel and lumen areas, with more calcification in both culprit and non-culprit lesions (Table). Plaque burden was slightly increased in the non-culprit lesions, but not the culprit lesions of patients with renal insufficiency. Fibroatheromas (>10% necrotic core) were more often calcified (>10% dense calcium) and plaque rupture was less common in pts with the lowest tertile of CrCl.

**Conclusions:** In the present large-scale study, renal dysfunction was associated with negative vessel remodeling, smaller lumen areas and greater calcification, with a graded response according to the reduction of CrCl.

| | Lowest tertile (N=539) | Intermediate tertile (N=570) | Highest tertile (N=556) | p-value |
|---|---|---|---|---|
| Median creatinine clearance (ml/ml) | 63.0 [54.5, 69.0] | 87.6 [81.9, 96.0] | 123.0 [113.3, 140.1] | <0.0001 |
| Hemodialysis | 0.90% | 0% | 0% | - |
| All lesions | | | | |
| Thin-cap fibroatheroma | 13.50% | 16.20% | 17.80% | 0.21 |
| Calcified thick-cap fibroatheroma | 24.50% | 17.60% | 16.40% | 0.007 |
| Plaque rupture | 15.80% | 20.00% | 22.00% | 0.02 |
| Culprit lesions | | | | |
| Mean lumen area, mm3/mm | 5.5 [5.3, 5.7] | 5.8 [5.6, 6.1] | 6.1 [5.9, 6.4] | 0.002 |
| Mean vessel area, mm3/mm | 13.0 [12.5, 13.5] | 14.2 [13.5, 14.8] | 14.9 [14.2, 15.6] | <0.0001 |
| % plaque volume, % | 56.5 [55.4, 57.6] | 57.6 [56.6, 58.7] | 57.5 [56.3, 58.6] | 0.28 |
| Dense calcium volume, % | 11.8 [10.8, 12.7] | 10.2 [9.4, 11.1] | 9.7 [8.9, 10.5] | 0.0006 |
| Maximum calcium arc, ° | 117 [107, 127] | 113 [103, 123] | 103 [94, 112] | 0.12 |
| Non-culprit lesions | | | | |
| Mean lumen area, mm3/mm | 7.6 [7.2, 8.0] | 7.9 [7.4, 8.3] | 8.9 [8.4, 9.4] | 0.0003 |
| Mean vessel area, mm3/mm | 15.4 [14.6, 16.2] | 15.8 [14.8, 16.7] | 17.1 [16.2, 18.0] | 0.02 |
| % plaque volume, % | 50.5 [49.6, 51.4] | 50.2 [49.3, 51.0] | 48.3 [47.6, 49.0] | 0.0001 |
| Dense calcium volume, % | 12.0 [10.6, 13.5] | 10.5 [9.1, 11.8] | 10.1 [9.1, 11.1] | 0.09 |
| Maximum calcium arc, ° | 79 [69, 89] | 66 [57, 76] | 64 [56, 73] | 0.08 |

POSTERS

## TCT-668

### OCT Assessment Of The Differences Between Native Coronary Atherosclerosis And Cardiac Allograft Vasculopathy

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**Background:** Cardiac allograft vasculopathy (CAV) is an accelerated diffuse fibroproliferative process that affects the distal coronary segments and sidebranches in patients after heart transplant (HTx); conversely traditional native atherosclerosis typically tends to involve more the proximal coronary artery segments.

**Methods:** At the time of routine surveillance coronary angiography, 11 HTx recipients with a history of high grade cellular rejection (HGR: ISHLT 3A) and 23 HTx with a history of low grade rejection (LGR: ISHLT 0 or 1A) underwent optical coherence tomography (OCT) imaging of the left anterior descending (LAD) artery and were compared to 22 non-HTx pts with native coronary heart disease. The LAD was divided into proximal, mid, and distal segments; and the minimum lumen area site was analyzed for each segment.

**Results:** Due to limitations to OCT penetration, external elastic lamina (EEL) and internal elastic lamina (IEL) were visible in only distal segments in non-HTx pts. In distal LAD segments, pts with HTx HGR had smaller EEL and IEL areas, but similar %intima/IEL as compared to non-HTx or HTx LGR pts. Attenuation without lipidic plaque indicating macrophage infiltration was more frequent in HTx as compared to non-HTx pts; but attenuation within lipidic plaque, calcification, and cholesterol crystals were more frequent in Non-HTx pts. Compared to non-HTx pts, sidebranches of HGR HTx pts had smaller diameters and more intimal thickening, especially in small sidebranchs (diameter < 1mm).

**Conclusions:** Using OCT imaging showed that coronary stenotic lesions in patients after HTx have different morphologics characteristics when compared to native atherosclerosis. Pts with HGR had the smallest distal lumen areas. The small lumen dimensions of CAV are the result of negative remodeling or lack of adaptive positive remodeling, and not increased intimal thickening.

| | (a) Non-HTx | (b) HTx high grade rejection | (c) HTx low grade rejection | p-value | |
|---|---|---|---|---|---|
| Number | 22 | 11 | 23 | (a) vs (b) | (a) vs (c) |
| Distal EEL area ($mm^2$) | 8.6±3.7 | 6.5±2.4 | 8.8±4.1 | 0.099 | 0.85 |
| Distal IEL area ($mm^2$) | 7.4±3.3 | 5.8±2.3 | 7.8±3.6 | 0.14 | 0.67 |
| Distal % Intima/ IEL (%) | 34.9±18.5 | 33.2±19.0 | 16.8±12.5 | 0.80 | 0.0006 |
| Distal Lumen area ($mm^2$) | 4.9±2.5 | 4.0±1.9 | 6.5±2.9 | 0.30 | 0.056 |
| Mid Lumen area ($mm^2$) | 3.5±2.1 | 6.1±3.1 | 9.5±4.1 | 0.0072 | <0.0001 |
| Proximal Lumen area ($mm^2$) | 6.5±3.4 | 9.6±5.2 | 13.6±5.0 | 0.059 | <0.0001 |
| *Attenuation* | | | | | |
| Distal - without lipidic plaque | 4.5% (1) | 63.6% (7) | 28.6% (6) | 0.0005 | 0.046 |
| Distal - with lipidic plaque | 77.3% (17) | 9.1% (1) | 0% (0) | 0.0005 | <0.0001 |
| Mid - without lipidic plaque | 4.5% (1) | 72.7% (8) | 22.7% (5) | <0.0001 | 0.19 |
| Mid - with lipidic plaque | 95.5% (21) | 18.2% (2) | 0% (0) | <0.0001 | <0.0001 |
| Proximal - without lipidic plaque | 4.5% (1) | 72.7% (8) | 17.4% (4) | <0.0001 | 0.35 |
| Proximal - with lipidic plaque | 95.5% (21) | 27.3% (3) | 0% (0) | <0.0001 | <0.0001 |
| Calcification | 86.4% (19) | 27.3% (3) | 13.0% (3) | 0.0014 | <0.0001 |
| Cholesterol crystal | 36.4% (8) | 9.1% (1) | 0% (0) | 0.21 | 0.0015 |
| Side branch diameter, mm | 1.29±0.89 | 0.99±0.76 | 1.27±0.92 | 0.013 | 0.83 |
| Intima thickening in any side branch | 20.0% (30/150) | 51.3% (39/76) | 23.8% (43/181) | <0.0001 | 0.41 |
| Intima thickening in side branch (<1mm in diameter) | 2.7% (2/74) | 40.4% (19/47) | 10.0% (9/90) | <0.0001 | 0.41 |

## TCT-669

### Differences in Culprit Lesion Plaque Stability between Males and Females: A VH-IVUS Analysis from the ADAPT-DES Study

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**Background:** ADAPT-DES study was a prospective multicenter, registry of 8,583 consecutive stable and unstable pts undergoing percutaneous coronary intervention