69%, P<0.01), and microchannel (61% vs 32%; P=0.02) in the high peak hs-CRP group than the low peak hs-CRP group. A multivariate logistic regression model revealed that high peak hs-CRP levels correlated with the presence of ruptured plaque and microchannel (odds ratio 5.19, P < 0.01 and odds ratio 4.18, P < 0.01, respectively).

**Conclusions:** High peak hs-CRP was associated with the presence of ruptured plaque and neovascularization, suggesting that elevation of hs-CRP during admission may reflect greater plaque vulnerability in the setting of NSTEACS.

**TCT-265**

**Combination of Large Plaque Burden and Low Wall Shear Stress Results in Greater Progression of Coronary Atherosclerosis than Low Wall Shear Stress Alone in Patients with Coronary Artery Disease**

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**Background:** Both large plaque burden and low wall shear stress (WSS) have been associated with coronary plaque progression. We hypothesized that segments with a combination of large plaque burden and low WSS show greater plaque progression than segments with either large plaque burden or low WSS alone.

**Methods:** Twenty patients with non-obstructive coronary artery disease (CAD), treated with 80 mg/day atorvastatin, underwent baseline and 6-month follow-up ultrasound (IVUS) and Doppler velocity assessments, and computational fluid dynamics modeling in left anterior descending coronary artery for calculation of WSS. Change in plaque area (follow-up plaque area – baseline plaque area) was calculated in 0.5mm IVUS segments with either large plaque burden (≥40%) or low WSS (defined as <10 dynes/cm²) and large plaque burden (≥40%) and low WSS (≥40% and low WSS at baseline). The combination of plaque burden ≥40% and low WSS was associated with significantly greater change in plaque area at follow-up (+0.68±1.08 mm²), compared to presence of plaque burden ≥40% alone (-0.28±1.3 mm²) or low WSS alone (+0.05±0.7 mm²) (p<0.05) (Figure).

**Results:** Both large plaque burden and low WSS were associated with significantly greater change in plaque area at follow-up. The combination of large plaque burden and low WSS showed greater plaque progression than segments with either large plaque burden or low WSS alone.

**Conclusions:** The combination of large plaque burden and low WSS is associated with significantly greater change in plaque area at follow-up compared to segments with large plaque burden or low WSS alone. The combination of large plaque burden and low WSS is associated with the greatest change in plaque area at follow-up.

**TCT-266**

**Frequency of Spotty Calcification Among Lipid-Core Plaques Using Combined Intracoronary Near-Infrared Spectroscopy and Intravascular Ultrasound**

Ryan Madder1, David Wohls2, Richard McNamara1, Kevin Wolschleger1, Brian Giddens2, Tracy VonGouhou2, Joanne LaFlere3, James Ballard3, Jason Bensch3, David Klungel1, Rishi Puri3, Stephen Nicholls3

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**Background:** Calcification in a ‘spotty’ distribution is hypothesized to be an ultrasonic marker of vulnerable plaque, yet the relationship between spotty calcification and underlying plaque composition has not been fully delineated. Using combined intracoronary near-infrared spectroscopy and intravascular ultrasound (NIRS-IVUS), we describe the frequency of spotty calcification among lipid-core plaque (LCP).

**Methods:** In 21 consecutive patients undergoing NIRS-IVUS prior to percutaneous intervention, NIRS was used to identify LCP (bright yellow signal on the NIRS block chemogram). The lipid content was quantified by the lipid-core burden index (LCBI). Throughout the length of each LCP, IVUS images were analyzed every 1 mm for calcification. Spotty calcification was defined as an arc of calcification <90°.

**Results:** A LCP (evident by bright yellow in the central block chemogram) by NIRS-IVUS is shown (Figure). Spotty calcification is present (arrows). Among 23 consecutive LCP identified by NIRS (length 7.1±4.7 mm; LCBI 319±143), spotty calcification was present in 87.0%. Calcification was distributed throughout the length of LCP, found in 161 of 190 (84.7%) IVUS frames analyzed. Within LCPs, spotty calcification was significantly more common than the absence of calcification (40.0% frames vs 15.3% frames, p<0.0001).

**Conclusions:** Spotty calcification is commonly associated with LCP and is distributed throughout its length. The observed association between spotty calcification and LCP is consistent with the concept that spotty calcification may be a marker of vulnerable lesions.

**TCT-267**

**Comparison of Coronary Plaque Components between Non-Culprit Lesion in Patients with Acute Coronary Syndrome and Target Lesion in Patients with Stable Angina: Virtual Histology-Intravascular Ultrasound Analysis**

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**Background:** Plaque components of non-culprit lesion (NCL) in acute coronary syndrome (ACS) patients (ACS-NCL) have not been compared to those of target lesion (TL) in stable angina (SA) patients (SA-TL). We used virtual histology-intravascular ultrasound (VH-IVUS) to compare the plaque components between ACS-NCL and SA-TL.

**Methods:** We compared VH-IVUS findings between non-culprit lesion in 290 ACS patients (ACS-NCL) and target lesion in 276 SA patients (SA-TL). We used virtual histology-intravascular ultrasound (VH-IVUS) to compare the plaque components between ACS-NCL and SA-TL.

**Conclusions:** Spotty calcification is commonly associated with LCP and is distributed throughout its length. The observed association between spotty calcification and LCP is consistent with the concept that spotty calcification may be a marker of vulnerable lesions.

**TCT-266**

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**Background:** Calcification in a ‘spotty’ distribution is hypothesized to be an ultrasonic marker of vulnerable plaque, yet the relationship between spotty calcification and underlying plaque composition has not been fully delineated. Using combined intracoronary near-infrared spectroscopy and intravascular ultrasound (NIRS-IVUS), we describe the frequency of spotty calcification among lipid-core plaque (LCP).

**Methods:** In 21 consecutive patients undergoing NIRS-IVUS prior to percutaneous intervention, NIRS was used to identify LCP (bright yellow signal on the NIRS block chemogram). The lipid content was quantified by the lipid-core burden index (LCBI). Throughout the length of each LCP, IVUS images were analyzed every 1 mm for calcification. Spotty calcification was defined as an arc of calcification <90°.

**Results:** A LCP (evident by bright yellow in the central block chemogram) by NIRS-IVUS is shown (Figure). Spotty calcification is present (arrows). Among 23 consecutive LCP identified by NIRS (length 7.1±4.7 mm; LCBI 319±143), spotty calcification was present in 87.0%. Calcification was distributed throughout the length of LCP, found in 161 of 190 (84.7%) IVUS frames analyzed. Within LCPs, spotty calcification was significantly more common than the absence of calcification (40.0% frames vs 15.3% frames, p<0.0001).

**Conclusions:** Spotty calcification is commonly associated with LCP and is distributed throughout its length. The observed association between spotty calcification and LCP is consistent with the concept that spotty calcification may be a marker of vulnerable lesions.