TCT@ACC-i2: Invasive and Interventional Cardiology

FIBRO-FATTY COMPONENT IS IMPORTANT FOR THE LONG-TERM CLINICAL EVENTS IN PATIENTS WHO HAVE CORONARY ARTERY OCCLUSIVE DISEASE

Poster Contributions
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Background: Until now, it is unclear that each plaque components is related with long term clinical outcomes. We assessed relationship between plaque compositions and long term clinical outcomes.

Methods: The study subjects consisted of 339 consecutive patients (mean age, 61.7 ± 12.2 years; 239 males) who underwent coronary angiogram and virtual histology-intravascular ultrasound examination. Major adverse cardiac events (MACEs) including death, acute myocardial infarction, stroke and target vessel revascularization were evaluated during the mean 51 months follow-up period. To evaluate the effect of plaque compositional area and volume to clinical outcomes, we defined high area and volume criteria as like this; high plaque area or volume (PA/PV) ($\geq70\%$ of external elastic lamina area or volume), high fibrous area or volume ($\geq50\%$ of PA/PV), high fibro-fatty area or volume (FFA/FFV) ($\geq10\%$ of PA/PV), high dense calcium area or volume ($\geq10\%$ of PA/PV) and high necrotic core area or volume ($\geq10\%$ of PA/PV).

Results: Cardiogenic shock (HR=8.70; 95% CI=3.15-21.10; p<0.001) and high FFV (HR=1.86; 95% CI=1.20-2.88; p=0.006) were only independent predictors for MACEs by Cox regression analysis. Patients with high FFV had a higher incidence of MACEs (33.0% vs. 19.6%, p=0.009), older age (64.3 ± 12.1 vs. 60.5 ± 12.1, p=0.008), larger minimal lumen area (4.2 ± 1.2 mm2 vs. 3.8 ± 1.2 mm2, p=0.020), higher plaque burden ($61.4\pm7.7\%$ vs. $56.0\pm8.0\%$, p<0.001), higher plaque volume (217.4 ± 120.8 mm3 vs. 155.4 ± 98.2 mm3, p<0.001), less thin-cap fibroatheroma (48.9% vs. 29.0%, p=0.001). Fibrous area/volume, FFA, dense calcium area/volume and necrotic core area/volume did not affect to MACEs.

Conclusions: FFV rather than necrotic core volume was important in long-term clinical outcomes in patients who had coronary occlusive disease.