Results: Patients were followed for 5.6 years and the combined endpoint occurred in 18 (16.7%) diabetic and 28 (8.6%) non-diabetic patients (odds Ratio 2.1, p=0.03). There were no significant differences regarding the baseline characteristics of diabetic and non-diabetic patients including age, sex, BMI, hypertension, smoking habits, LDL and HDL cholesterol, family history for CAD as well as ASS and Statin medication. Diabetic patients had significantly higher total PV than non-diabetic patients (55.1 [95% CI 62.2 and 220.4] vs. 24.9 [95% CI 166.7 and 220.4] mm³, p<0.02). Findings were consistent for calcified and non-calcified PV (both p<0.05). Quantification of coronary PV provided good separation of diabetic and non-diabetic patients at higher and lower risk for adverse events (see Figure 1) using a threshold of 110.5 mm³ PV per patient (log-rank p<0.01 and 0.02, respectively). Noteworthy, diabetic and non-diabetic patients with a PV<110.5 mm³ had a comparable outcome (hazard 1.3, p=0.59), while diabetic patients with PV>110.5 mm³ had significantly worse outcome (hazard Ratio 2.3, p<0.03) compared to non-diabetic patients with PV>110.5 mm³.

Conclusion: Diabetes has a significant impact on CAD burden, which is independent of other CAD risk factors. Quantification of CAD burden provides good separation of patients at higher and lower risk for future adverse negative events.

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Association of low-attenuation Plaque Volume with cardiovascular risk factors
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Background: Presence of low-attenuation plaque volume (LAPV) has been increasingly linked to future adverse cardiovascular events.

Purpose: To investigate the association between LAPV and cardiovascular risk factors and to identify modifiable risk factors for LAPV.

Methods: In 1577 patients, LAPV was quantified using dedicated Software from coronary CT angiography (CCTA) datasets. Multivariable linear regression analysis was performed to test association of traditional cardiovascular risk factors with quantified LAPV.

Results: During follow-up (median 5.5 years), 61 patients suffered from death or myocardial infarction. Quantified LAPV provided incremental prognostic information beyond clinical risk assessed with the Morise score and obstructive coronary artery disease (c-index rose from 0.676 to 0.719, p<0.01). Multivariate analysis revealed that a higher LAPV was significantly associated with higher age (p<0.01), male sex (p<0.01), higher BMI (p<0.01), Smoking (p<0.01) and Diabetes (p=0.01). A higher high-density lipoprotein level correlated significantly with lower LAPV (p=0.04). For allow comparability of factors, standardized beta coefficients were calculated and are presented in Figure 2. Multivariate analysis was adjusted for ASS and Statin medication.

Conclusion: This analysis reveals that coronary LAPV has a huge impact on patients outcome and is directly linked to a number of modifiable cardiovascular risk factors (Smoking habits, BMI, Diabetes and lower high-density lipoprotein). These findings reinforce the importance of preventive therapy approaches and lifestyle changes.