

diabetes ( $p = 0.010$ ). CCS and SIS were not independently associated with DD.

**Conclusions:** Our analysis suggests that CCS as well as CAD by CCTA are not independently associated with measures of DD on echocardiography.

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### 39. Speckle tracking echocardiography in patients with severe aortic stenosis and preserved ejection fraction undergoing aortic valve replacement

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**Aim:** To evaluate myocardial strain by 2-dimensional speckle-tracking Echocardiography (2D-STE) in patients with severe aortic stenosis (AS) and preserved left ventricular (LV) ejection fraction (EF), before and after aortic valve replacement (AVR).

**Introduction:** Severe AS is characterized by chronic increase in the LV pressure and LV hypertrophy which lead to changes in the LV geometry. Impairment of the LV function in severe AS occurs despite of normal LV volumes and EF. Strain analysis by (2D-STE) can detect early and subtle changes of the LV function and can help in referring patients for earlier AVR to obtain better outcome.

**Methods:** 15 selected patients with severe AS (aortic valve area  $<1 \text{ cm}^2$ ) and normal EF referred for surgical AVR (SAVR) or transcatheter aortic valve implantation (TAVI).

All patients had 2D transthoracic echocardiography and 2D-STE to assess both longitudinal and circumferential strain before and after AVR.

**Results:** the entire study cohort showed significant improvement in myocardial strain values. Global longitudinal strain (GLS  $-15.3$  vs.  $-18.5$ ) mean change of 2.1% and  $p$  value = 0.02 and global circumferential strain (GCS  $-28.9$  vs.  $-31.9$ ), mean change of 2.9% and  $p$  value = 0.036.

**Conclusions:** following AVR a significant improvement in LV myocardial strain both longitudinal and circumferential occurred. Strain analysis by 2D-STE can detect early and subtle changes in LV systolic function and might play a role in early intervention for severe AS with preserved ejection fraction.

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### 40. Optical coherence tomography correlates of complex lesions evaluated by coronary angiography in patients with acute coronary syndromes

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**Background:** Plaque rupture (PR) and superimposed thrombosis have been shown as the most frequent underlying substrate in acute coronary syndromes (ACS). Coronary angiography is a luminogram that is not able to define in-vivo features of the culprit plaques. The aim of the study was to use optical coherence tomography (OCT) to investigate the pathology underlying complex (CL) and non-complex angiographic lesions (NCL).

**Methods:** We retrospectively enrolled 107 ACS patients admitted to our institution; 83 with Non-ST elevation ACS (NSTEMI-ACS) and 24 with ST-elevation myocardial infarction (STEMI). Coronary angiography was performed and culprit lesions were classified according to Ambrose criteria into NCL ( $n = 47$ ) and CL ( $n = 60$ ). In STEMI patients, angiographic and OCT analysis were performed after mechanical thrombus aspiration. OCT analysis of these culprit lesion was performed to identify plaque morphology; either PR or intact fibrous cap (IFC), as well as the presence of superimposed thrombosis, lipid rich plaque, thin cap fibroatheroma (TCFA), and minimal lumen area (MLA).

**Results:** OCT analysis showed that 58 lesions (54.2%) were classified as PR and 48 lesions (44.9%) were associated with thrombi. Lipid rich plaques were identified in 62 culprit plaques (57.9%). PR, intracoronary thrombi, lipid rich plaques and thin cap fibroatheroma (TCFA) were more frequent in CL compared with NCL (71.7% vs 31.9%, 63.3% vs 21.3%, 71.7% vs 40.4% and 46.7% vs 21.3% respectively). PR (31.9%) with superimposed thrombus (21.3%) may be also detected in NCL. In STEMI patients, there was no significant difference regarding OCT plaque features between NCL and CL.

**Conclusion:** In conclusion, OCT demonstrates PR and thrombosis in the majority of ACS patients presenting with CL. Of note, one third of NCL has PR and thrombosis by OCT. In STEMI, coronary angiography is of limited utility in identifying PR by means of CL and should be implemented with OCT to tailor future therapies.

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### 41. Echocardiographic interpretation of cardiac function with puberty in girls

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Puberty is accompanied by significant changes in hemodynamics that can influence interpretation of clinical states. However the extent to which this is influenced by the nutritional status of children is poorly understood.

**Aim:** To study the changes in cardiac dimensions with onset of early puberty and their relation to growth and nutritional status in females.

**Methods:** Survey was conducted for 200 schools girls aged 9–12 years including full cardiac exam, blood