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### **High dose statins in secondary prevention, between clinical guidelines and intravascular imaging**

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Patients diagnosed with coronary artery disease (CAD) have a high risk of subsequent cardiovascular events, including myocardial infarction (MI), stroke, and death. Modifications of risk factors can significantly reduce these recurrent events and premature death amongst these patients. This presentation aims to review the role and application of intravascular imaging in secondary prevention of CAD.

Coronary angiography has been the gold standard for detecting and guiding the treatment of coronary artery disease by providing two-dimensional projections of the contrast- filled coronary artery lumen. Despite quantitative coronary angiography (QCA) was developed to provide objective and reproducible measurements, this technique remains limited to merely reflecting the degree of lumen intrusion of atherosclerotic lesion. However, especially in the early stages of the disease, plaques can show an outward growth, known as positive remodelling (REF), without luminal compromise and cannot be detected by QCA. Optical coherence tomography (OCT) is a relatively new intravascular imaging technique that provides high-resolution, tomographic images of the coronary arteries. In addition to luminal measurements, its high resolution also enables measurement of fibrous cap thickness (FCT), an important determinant of future risk. Compositional changes with statins have also been investigated using NIRS (Near InfraRed Spectroscopy).

Benefits of statins, particularly high-intensity statin therapy have been shown in larger studies, particularly in the setting of use of high-intensity statin therapy. Aside from these findings, high resolution images provided by OCT brought other insights into the mechanisms how statins might operate in stabilizing the plaque. These findings point to possible procalcific effects of statins, which are consistent with possible plaque-stabilizing effects of statins beyond simply their effects on atheroma volume.

Assessment of atherosclerotic plaque via intravascular ultrasound, OCT, NIRS provides to cardiologists, but also to general practitioners a good proof regarding high dose statins benefit in secondary prevention.