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**Quantitative Intravascular Ultrasound Elasticity Imaging as an**  
**Imaging Biomarker in Clinical Trials**

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The composition and morphology of an atherosclerotic lesion are currently considered more important determinants of acute coronary ischemic syndromes than the degree of stenosis. When a lesion is unstable, it can rupture and cause an acute thrombotic reaction. An unstable plaque can be characterized by a lipid core that is covered by a thin fibrous cap, which has been locally weakened by inflammatory cells. Intravascular Ultrasound Palpography is an intravascular ultrasound based technique that is capable to measure the local strain in coronaries and atherosclerotic plaque. This strain is induced by varying intraluminal pressure. This lecture will show principles of the technology and how this technology is used in clinical trials. Results from a trial with traditional lipid lowering treatment (IBIS 1) and from a trial on the efficacy of a new medication (IBIS2) will be presented. Furthermore the potential of Intravascular Ultrasound Modulography will be discussed.

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