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Fundamentals in coronary physiology: Coronary pressure and flow for clinical decision making

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Wide attention for the appropriateness of coronary stenting in stable ischemic heart disease has increased interest in coronary physiology to guide decision making. For many, coronary physiology equals the measurement of coronary pressure to calculate the Fractional Flow Reserve (FFR). While accumulating evidence supports the contention that FFR-guided revascularization is superior to revascularization based on coronary angiography, it is frequently overlooked that FFR is a coronary pressure-derived estimate of coronary flow impairment. It is not the same as the direct measures of coronary flow from which it was derived, and which critical determinants of myocardial ischemia are. The presentation includes the basic principles of coronary pressure and flow measurements, why coronary flow is physiologically and clinically more important than coronary pressure as well as the limitations and clinical consequences of FFR-guided clinical decision making. Moreover, the scientific consequences of using FFR as a gold standard reference test are discussed including the potential of coronary flow to improve risk stratification and clinical decision making in patients with ischemic heart disease.

Biography

Jan Jacob Piek is a Cardiologist since 1989 and is specialized in Interventional Cardiology at Academic Medical Center (AMC) in Amsterdam. He completed his thesis in 1992. He was appointed as a Professor of Clinical Cardiology in 1999. He has been Co-chairman of Heart Center of the AMC since 2004 and Director since 2008. He has published more than 400 articles in peer reviewed journals.

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