



Chronic CAD/Stable Ischemic Heart Disease

INSTANTANEOUS WAVE-FREE RATIO (iFR) HAS A SIMILAR DIAGNOSTIC EFFICIENCY TO FRACTIONAL FLOW RESERVE (FFR) IN SINGLE AND MULTI-VESSEL DISEASE: SECONDARY ANALYSIS OF ADVISE (ADENOSINE VASODILATOR INDEPENDENT STENOSIS EVALUATION) STUDY

ACC Oral Contributions

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Background: ADVISE recently reported the use of a new automated algorithm to identify a wave-free period in diastole, where a pressure-derived measure of stenosis severity (iFR) can be made without the use of vasoactive agents such as adenosine. In this analysis we expand the primary analysis to report the relationship between iFR and FFR in single and multi-vessel disease.

Methods: Simultaneous aortic and intra-coronary pressure was measured across 151 stenoses, at rest and then during adenosine hyperaemia.

Results: 108(68.8%) stenoses were isolated to a single vessel, and 49(31.2%) were in 2 or more vessels: 70(44.7%) left anterior descending, 43(27.3%) circumflex and 44(28%) right coronary artery. iFR was found to closely agree with FFR in single ($r=0.89$, $p<0.01$) and multi-vessel disease ($r=0.92$, $p<0.01$). This was independent of the route of adenosine administration (multi-vessel, $r=0.92$ i.v., 0.87 i.c.; single-vessel, $r=0.94$ i.v., 0.86 i.c., $p<0.01$ for all). The diagnostic efficiency (receiver operator curve) was similar for single (AUC=0.93) and multi-vessel disease (AUC= 0.92).

Conclusions: iFR produces a close measure of FFR without the requirement for administration of adenosine, in single or multi-vessel assessment. This was not influenced by the coronary artery studied or the modality of hyperaemic stimuli used. These results suggest in the context of multi-vessel disease, iFR could simplify assessment, reduce costs and thereby facilitate adoption of physiologically guided PCI.

