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Angiographic views with worst percent diameter stenosis better correlate with ischemia than the mean value of 2 orthogonal views: A fractional flow reserve study

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Reporting worst angiographic view percent diameter stenosis (% DS) vs. the mean % DS value of 2 orthogonal views to describe coronary stenosis remains debatable. Fractional flow reserve (FFR) is the gold standard for assessment of ischemia. We predict that the worst angiographic view % DS better correlates with ischemia as measured by fractional flow reserve (FFR). 646 consecutive patients who underwent coronary angiography with FFR assessment between 2007 and 2012 at Tampa General Hospital were identified. 527 patients met exclusion criteria: Coronary artery bypass surgery, myocardial infarction, EF<55%, chronic total occlusion anywhere in the coronary artery and lack of true orthogonal angiographic views displaying the target lesion. The study cohort consisted of 119 patients (65% male, mean age 62±11 years) and 124 total lesions. Utilizing computerized automated edge detection (Q Angio XA[®]; Leiden, NL) we measured the % DS of each lesion in its worst (worst % DS) and orthogonal views and computed the mean of those 2 values (mean % DS). We applied linear logistic regression analysis (Number Cruncher Statistical Software; USA) to derive the odds ratio (OR) of worst % DS vs. mean % DS in predicting an abnormal FFR (≤ 0.80). The odds ratio for worst percent diameter stenosis was 1.04 ($P < 0.06$) and was 1.02 for the mean percent diameter stenosis ($P < 0.23$). We concluded that the worst % DS better correlates with ischemia as measured by FFR than the mean % DS of 2 orthogonal views. This value should be used for cardiac catheterization laboratory reporting purposes.

Biography

John Meriwether, MD is a fellow with the Department of Cardiovascular Diseases at The University of South Florida. He completed Medical School at the University of South Alabama and residency at Georgetown University.

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