SMOKING IS A STRONG INDEPENDENT PREDICTOR FOR FUNCTIONAL SIGNIFICANCE OF INTERMEDIATE CORONARY LESIONS

i2 Poster Contributions
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Authors: Chad Joseph Zack, Vladimir Lakhter, Ricardo Escarcega Alarcon, Riyaz Bashir, Brian O’Murchu, Michael Brown, Alfred Bove, Section of Cardiovascular Medicine, Temple University School of Medicine, Philadelphia, PA, USA

Background: Fractional flow reserve (FFR) is a validated method used for physiologic assessment of functional significance of intermediate coronary artery lesions (40 - 69% stenosis). We sought to determine if the traditional Framingham risk factors known to increase atherosclerotic burden influenced physiologic assessment of intermediate coronary lesions.

Methods: We retrospectively studied all patients in our FFR database from initiation in April 2004 until November 2010. This included 379 vessels in 316 consecutive patients who underwent coronary angiography and FFR determinations. FFR measurements were performed on lesions that were determined to be intermediate by the individual operator. Statistical significance of finding an abnormal FFR value was determined between the groups with and without traditional risk factors for coronary artery disease. Abnormal FFR were defined as having a value of <0.8.

Results: Of the traditional risk factors only active smoking and women < 55 years of age were found to have an increased likelihood of having an abnormal FFR. In 49.5% of the patients that were current smokers had an abnormal FFR value compared to only 29.6% of non-smokers (P <0.001) (OR 2.2, 1.4 - 3.6, 95% CI). Women < 55 years of age were also more likely to have an abnormal FFR (48.5% vs. 30.3%, P = 0.05: OR 2.2, 0.99 - 4.7, 95% CI). However, multivariate regression analysis found that only current smoking was an independent predictor of abnormal FFR in these angiographically intermediate lesions. The gender effect was lost after adjusting for smoking as there was a significantly higher prevalence of current smokers in women < 55 years of age. (60.5% vs. 18.8 % P = .000002).

Conclusions: Our results suggest that active smoking was strongly associated with an abnormal FFR in patients undergoing functional evaluation of intermediate coronary lesions. Women younger than 55 years of age also had higher incidence of abnormal FFR, but this was most likely due to higher prevalence of current smokers in this group.