**VALIDATION AND COMPARISON OF RESTING GRADIENT TO FRACTIONAL FLOW RESERVE FOR ASSESSMENT OF CORONARY ARTERY STENOSIS**

**J. Aoun**, S. Lahsaei, C. Zahm, T. Bhat, J.P. Carrozza

Saint Elizabeth's Medical Center, Brighton, MA, USA

**Background:** The visual interpretation of an angiographic stenosis may not always reflect the physiological significance of a lesion. Fractional Flow Reserve (FFR) is a reliable index to assess the significance of a lesion during hyperemia. However, there are pitfalls that can lead to significant misinterpretation and adverse events. This study sought to evaluate the accuracy and predictability of the resting Pd/Pa (distal coronary artery pressure to aortic pressure ratio) without hyperemic stimuli, compared to hyperemic FFR.

**Method:** We conducted a retrospective, multicenter study of 700 patients who underwent a pressure recording during coronary angiography using Pd/Pa and FFR measurements. Receiver operator characteristic (ROC) curve was constructed. Pd/Pa sensitivity, specificity, positive predictive value, negative predictive value and accuracy test were calculated. The most accurate Pd/Pa cutoff was determined.

**Results:** Of the 700 procedures, 449 cases were included. By ROC analysis, the optimal cut-point for Pd/Pa was 0.93 to predict an FFR of ≤0.80 with an overall diagnostic accuracy of 78.84%. The sensitivity of this Pd/Pa cutoff was 85.06 %, specificity of 75.59 %, positive predictive value of 64.53% and a negative predictive value of 90.65%.

**Conclusion:**There was an overall accuracy of about 80% for predicting non-hyperemic index (FFR <0.80) using a cutoff of Pd/Pa ≤0.93. The use of Pd/Pa can be considered in certain clinical scenarios where adenosine is contraindicated or there are other challenges; with the knowledge that hyperemia might be necessary if there is any high clinical suspicion as it still remains the reference standard for diagnostic certainty.