Impact of revascularization on non-flow limiting lesions

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Background: Physiology-guided decision-making markedly improves outcomes in patients with coronary artery disease (CAD). The fractional flow reserve (FFR) and the coronary flow reserve (CFR) can be used to estimate the reduction in myocardial blood flow by a stenosis and both were validated against non-invasive modalities to identify ischemia. Nevertheless, discordance between FFR and CFR in stenosis classification occurs in 30-40%. Recent studies showed that patients with non-flow limiting lesions (abnormal FFR, normal CFR) deferred from revascularization had similar outcomes to those vessels that underwent revascularization. However, the direct impact of revascularization in these vessels remains unclear.

Purpose: We aimed to identify the impact of revascularization in vessels with non-flow limiting lesions (abnormal FFR and normal CFR).

Methods: We selected those patients with non-flow limiting lesions from the global ILIAS Registry, a comprehensive pooled data set of patients whom underwent clinically indicated coronary angiography and complete physiological assessment. The primary outcomes consist of the composite endpoints of MACE and TVF at 5-year follow-up.

Results: A total of N=526 patients were included in the current analysis. Mean age was 64±10 and 74% were men. The mean FFR was 0.79±0.09 and the mean CFR 2.38±1.12. Of these, 53% (N=276) underwent revascularization and (47%) had no revascularization of the target vessel during the index procedure. Both groups had a similarly increased risk for MACE and TVF at 5-years (HR 2.4 [95% CI 1.6 – 3.5] and HR 2.2 [95% CI 1.5 – 3.4] respectively, p<0.005 for both, and p=0.787 for the difference between both).

Conclusions: We found that revascularization did not impact the association between non-flow limiting lesions and MACE or TVF at 5-year follow-up. Although these results should be interpreted with caution, it indicates the need for a more inclusive assessment of coronary hemodynamic when considering revascularization therapy.