**CLINICAL DECISION-MAKING USING FRACTIONAL FLOW RESERVE IN ACUTE CORONARY SYNDROMES**

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*Background:* Deferring percutaneous coronary intervention (PCI) in non-ischemic lesions by fractional flow reserve (FFR) is associated with excellent long-term prognosis in patients with stable ischemic heart disease (SIHD). While FFR is increasingly being used for clinical decision-making in acute coronary syndrome (ACS) patients with intermediate lesions, its effect on long-term prognosis has not been well established.

*Methods:* 206 consecutive ACS patients with 262 intermediate lesions and 370 patients with SIHD (528 lesions) in whom revascularization was deferred based on a non-ischemic FFR (>0.75) were studied. Primary outcome measure was a composite of myocardial infarction (MI) and target vessel failure (TVF) (MACE).

*Results:*In the entire cohort, long-term (3.4+1.6 years) MACE rate was higher in the ACS compared with the SIHD group (23% vs. 11%, p < 0.0001). After propensity score matching, (200 patients/group), MACE remained significantly higher (ACS, 25 % vs. SIHD, 12%; p<0.0001). On Cox proportional hazards analysis for MACE, ACS had HR 2.8 (95% CI 1.9-4.0; p<0.0001). In both the matched and unmatched cohorts, across all FFR categories, ACS patients had a significantly higher annualized MI/TVR rate compared with SIHD (P<0.05). ROC analysis identified an FFR cutoff (best predictive accuracy for MACE) of <0.84 for ACS (MACE 21% vs. 36%; p=0.007) and <0.81 for SIHD (MACE 17% vs. 9%; p=0.01).

*Conclusion:* Deferring PCI based on non-ischemic FFR in patients with initial presentation of ACS is associated with significantly worse outcomes compared with SIHD using thresholds developed for SIHD. Caution is warranted in using FFR for clinical decision-making in ACS patients using values derived from patients with SIHD and suggests the possibility of using a higher threshold (FFR >0.84) for deferral of intervention in ACS patients.