

**Relationship between Instantaneous wave-free ratio and fractional flow reserve in patients with prior myocardial infarction**

(Background) Fractional flow reserve (FFR) is useful for functional evaluation of coronary artery stenosis, regardless of the presence or absence of prior myocardial infarction (MI). In addition, recent study demonstrated close correlation between instantaneous wave-free ratio (iFR) and FFR. On the other hand, iFR shows stronger correlation and better agreement with coronary flow reserve compared with FFR. (Purpose) The purpose of this study is to investigate the correlation between iFR and FFR, and diagnostic accuracy of iFR for patients with prior MI. (Methods and results) Consecutive 102 coronary artery disease patients including 71 patients without prior MI ( $73 \pm 8$  years old, male gender 76%) and 31 patients with prior MI ( $71 \pm 7$  years old, male gender 78%) were enrolled in this analysis. IFR and FFR were measured in stenosis lesion using cut off value of FFR 0.80. Assessment of the stenotic coronary artery lesion in patients with prior MI was the lesion in prior MI territories. The iFR was closely correlated with the FFR in patients without and with prior MI. ( $r = 0.78$ ,  $p < 0.001$  and  $r = 0.88$ ,  $P < 0.001$ , respectively) However, ROC curve analysis provided high diagnostic accuracy of iFR as a diagnostic test for detecting the  $FFR < 0.8$  (87% and 88% respectively), iFR cut off point for the  $FFR < 0.8$  was different between patients without prior MI and with prior MI (0.90 and 0.82, respectively). (Conclusion) Cut off value of iFR for detecting myocardial ischemia might be lower in patients with prior OMI compared to without prior MI in the clinical setting.