

Altered cut off value of iFR for detecting myocardial ischemia defined by FFR in hemodialysis patients compared with non-hemodialysis patients

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Introduction; Instantaneous wave-free ratio (iFR) shows close correlation with fractional flow reserve (FFR). whereas, iFR shows better agreement with coronary flow reserve than FFR. These findings might suggest iFR is affected by microvascular dysfunction, which leads to the discordance between iFR and FFR in patients with microvascular dysfunction. Furthermore, previous studies revealed a high prevalence of microvascular dysfunction in patients with hemodialysis (HD). **Hypothesis;** We hypothesized cutoff value of iFR equivalent to that of FFR for detecting myocardial ischemia can be different among patients with and without HD. **(Methods)** Consecutive 313 lesions in 313 patients (44 HD and 269 non-HD patients) with coronary artery disease were enrolled. iFR and FFR were measured using pressure wire. Cut off value of FFR for myocardial ischemia was defined as <0.8 . Discordance of iFR and FFR was defined " $iFR \leq 0.86$ and $FFR \geq 0.80$ " and " $iFR \geq 0.93$ and $FFR \leq 0.75$ ". **Results;** Strong correlations were observed between iFR and FFR in this entire study patients ($r = 0.75$, $P < 0.001$), even though 20 patients (6.3%) demonstrated the discordance of iFR and FFR. HD was an only independent predictor for discordance between iFR and FFR by logistic regression analysis (Odds ratio 11.3, 95%CI 3.8 to 34.0, $P < 0.001$). However, strong correlations were observed between iFR and FFR in patients with and without HD ($r = 0.76$, and $r = 0.76$, $p < 0.001$, respectively), iFR cut off value for $FFR < 0.80$ by ROC analysis was different between patients with and without HD. (0.84 v.s. 0.91, $P < 0.05$) **Conclusions;** Careful evaluation of iFR might be required for detecting myocardial ischemia in HD patients.