3285

Impact of intravascular ultrasound-guided percutaneous coronary intervention in patients with diabetes mellitus and chronic kidney disease

R. Sato[1], K. Sakamoto[1], T. Yamashita[1], S. Nagamatsu[1], K. Motozato[1], D. Sueta[1], S. Oshima[2], K. Nakako[3], K. Fujimoto[4], H. Shimomura[5], R. Tsunoda[6], S. Hokimoto[1], K. Kaikita[1], K. Tsujita[1]

[1]Kumamoto University, Kumamoto, Japan; [2]Kumamoto Central Hospital, Department of Cardiology, Kumamoto, Japan; [3]Saiseikai Kumamoto Hospital, Department of Cardiology, Kumamoto, Japan; [4]National Hospital Organization Kumamaoto Medical Center, Department of Cardiology, Kumamoto, Japan; [5]Tokusyukai Hospital, Department of Cardiology, Fukuoka, Japan; [6]Kumamoto Red Cross Hospital, Department of cardiology, Kumamoto, Japan

On behalf of Kumamto Intervention Conference Study

Funding Acknowledgement: None

Background: Several studies have shown favorable results using IVUS-guided PCI. Nevertheless, patient background in which use of IVUS is effective is not well elucidated. Patients with diabetes mellitus (DM) or chronic kidney disease (CKD) tend to have complex coronary artery lesions. We sought to assess the impact of IVUS guidance on clinical outcomes in these patients.

Methods: Kumamoto Intervention Conference Study is a multicenter registry which has enrolled consecutive patients who underwent PCI in 16 centers in Japan. Between August 2008 and March 2014, 11,195 consecutive patients were enrolled in this registry. To elucidate the efficacy of IVUS usage in DM and CKD patients, 10,822 consecutive subjects with 1-year follow-up data were analyzed. In this patient population, 69.2% (n=7,493) of patients were treated with IVUS-guided PCI. Patients were divided into 4 groups: the No Risk Group, the DM only Group, the CKD only Group, and the DM+CKD Group.

Results: Maximum stent diameter, post dilatation rate, usage of distal protection device, and rotational atherectomy rate were significantly higher in the IVUS-guided PCI patients in all 4 groups. 1-year MACE (cardiovascular death, non-fatal myocardial infarction, and MI with stent thrombosis) was significantly lower in the IVUS-guided PCI patients than angiography-guided PCI patients in each subset, except for the No Risk Group. In contrast to angiography-guided PCI patients, there were no significant differences among the 4 groups as regards 1-year MACE in the IVUS-guided PCI patients except for the DM+CKD Group. In multiple regression analysis, IVUS usage was an independent negative predictor for 1-year MACE in the DM only Group (HR=0.374, 95% CI 0.194–0.719, p=0.003) and in the CKD only Group (HR=0.604, 95% CI 0.379–0.962, p=0.010). When the No Risk Group was used as a reference, the HR has increased according to increased risk factors in the angiography-guided PCI patients, but such tendency was not necessarily observed in the IVUS-guided PCI patients (Table).

Conclusion: The efficacy of IVUS usage as regards 1-year MACE was confirmed in DM and CKD patients, but not observed in patients without them or in the combination of DM and CKD patients.

Risk Stratification of DM and CKD

Variable	IVUS-Guided PCI			Angiography-Guided PCI		
	HR	95% CI	P	HR	95% CI	P
The No Risk Group	Reference	–	–	Reference	–	–
vs. the DM only Group	0.627	0.321–1.227	0.173	2.036	1.090–3.804	0.026
vs. the CKD only Group	1.334	0.795–2.237	0.275	2.730	1.541–4.836	0.001
vs. the DM+CKD Group	2.114	1.287–3.474	0.014	2.225	1.160–4.266	0.016