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Four-year Clinical Outcomes and Its Risk Factors of Patients with Peri-Stent Contrast Staining after Sirolimus-Eluting Stent Implantation

Aim: Peri-Stent Contrast Staining (PSS), a severe form of incomplete stent apposition, is considered as a risk factor for late coronary events. The aim of this study is to evaluate the risk factor and late cardiovascular effect of PSS developed after Sirolimus-Eluting Stent (SES).Methods: From April 2005 to August 2009, 561 consecutive patients with 898 lesions treated with SES and were evaluated by follow up angiography at 10 months. PSS was defined as contrast staining outside the stent contour extending to more than 20% of stent diameter measured by quantitative coronary angiography. We evaluated Major adverse cardiac events (MACE) such as cardiac death, myocardial infarction (MI), target lesion revascularization (TLR), ischemic driven target artery revascularization (TVR) at 4 years after PSS was found.Results: PSS was observed in 37 lesions (4.7%) in 23 patients (4.1%). The rate of stent thrombosis was not different between PSS and non-PSS patients (P=0.951). Total MACE were higher in PSS than non-PSS patients (43.5% vs 15.8%, P=0.0001). The rates of ISR (43.5% vs 15.2%, P=0.0001) and TLR were increased in PSS patients (34.8% vs 9.1%, P=0.0001). The only independent risk factor for PSS was total stent length of 26mm or more (P=0.024). Stent fracture was more frequently observed in patients with PSS than without PSS (30.4% vs 3.0%, P=0.0001).Conclusion: The PSS at angiographic follow-up after 1st generation SES implantation was infrequent and was associated with late cardiovascular events, especially restenosis and repeat revascularization.