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Comparison of effectiveness of sirolimus-eluting stents versus bare metal stents for percutaneous coronary intervention in patients at high risk for coronary restenosis or clinical adverse events.

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We evaluated the clinical effect of selective use of sirolimus-eluting stents (SESs) in real-world, high-risk patients. A total of 4,237 consecutive patients who underwent percutaneous coronary intervention (SES, n = 872, bare metal stents[BMSs], n = 3,365) was enrolled in a prospective regional survey. A prespecified high-risk subset of patients was selected on the basis of clinical and angiographic characteristics. A propensity score analysis was performed to compare patients who received SESs with those who received BMSs. Patients in the SES group more often had diabetes and more frequently had previous myocardial infarction or coronary revascularization, type C lesions, and multivessel procedures. Patients who presented with acute myocardial infarction were treated more often with BMSs. At 9 months, the use of SESs was associated with fewer major adverse cardiac events (death, myocardial infarction, or target lesion revascularization; hazard ratio 0.56, 95% confidence interval 0.37 to 0.85) and target lesion revascularizations (hazard ratio 0.43, 95% confidence interval 0.20 to 0.91). This decrease was more evident in a prespecified high-risk subgroup of patients (major adverse cardiac events, 8.0% SES vs 15.6% BMS, hazard ratio 0.45, 95% confidence interval 0.29 to 0.72). We conclude that selective SES use in real-world patients who have high-risk clinical and angiographic characteristics is associated with significant decreases in major adverse cardiac events and repeat revascularizations compared with BMS use.