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Impact of residual stenosis on the angiographic edge restenosis of second-generation DES (a quantitative coronary angiography from the post-marketing surveillance studies of cobalt-chromium everolimus-eluting stent in Japan)

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THEME: Coronary Interventions

TOPIC(S): Stents and scaffolds

AIMS

Edge restenosis has gathered focus as a main cause for restenosis after 1st generation drug-eluting stents (DES) implantation. The aim of this study was to assess the incidence of edge restenosis and to detect predictors for edge restenosis after 2nd generation DES implantation in routine clinical practice.

METHODS AND RESULTS

1,977 lesions (72.0%) in 1,696 patients from several post marketing surveillances (PMS) of 2nd generation DES, cobalt-chromium everolimus-eluting stent (CoCr-EES [Xience V/PROMUS, Xience Prime, Xience Prime SV, or Xience Expedition SV]) at 58 centers in Japan were analysed in this study. In CoCr-EES PMS in Japan, quantitative coronary angiography (QCA) were conducted in an independent corelab, at pre- and post-procedure and 8-month follow-up with subsegmental analysis: in-stent region, proximal and distal edges. Restenosis rate of in-stent region, proximal and distal edges at follow-up were 4.1%, 3.2% and 1.4%, respectively. Late loss of in-stent region, proximal and distal edges were 0.23 ± 0.42 mm, 0.14 ± 0.43 mm and 0.03 ± 0.38 mm, respectively. Probabilities of restenosis were compared between proximal and distal edges by multivariable adjusted logistic regression models including each lesion as a random effect. Risk of restenosis in distal edge was significantly lower than that in proximal edge (odds ratio [OR] 0.15 95% confidence interval [CI] 0.07 to 0.32 $p=45^\circ$, stent overlap, hypertension, previous CABG, insulin treated diabetes, previous PCI, hemodialysis, moderate/severe calcification, age and male. Univariate and multivariable analysis of the 13 variables described above were performed in each subsegment. Multivariable analysis showed that post %DS (OR 1.05 95%CI 1.02 to 1.08 $p=$

CONCLUSIONS

Multivariable analysis of 8-month angiographic outcomes from the CoCr-EES PMS demonstrated higher restenosis risk in proximal edges than distal edges. Post %DS would be a main predictor for edge restenosis in the real-world setting. Edge restenosis might be attributed to angiographic results post-procedure rather than patient backgrounds.