EuroIntervention, 2007; 2 (4): 474-480

Percutaneous treatment of multivessel coronary disease in the drug eluting stent era : comparison of bare-metal stents, drug-eluting stents and a mixed approach in a large multicentre registry

VARANI Elisabetta; SAIA Francesco ; BALDUCELLI Marco ; GUASTAROBA Paolo; MARROZZINI Cinzia; TARANTINO Fabio; PASSERINI Francesco; SANGIORGIO Pietro ; PERCOCO Gianfranco; GRILLI Roberto; MARZOCCHI Antonio; MARESTA Aleardo ;

Background: Restenosis and a high incidence of new revascularisations reduce the long-term efficacy of percutaneous coronary intervention (PCI) in patients with multivessel coronary artery disease.
Aims: To determine the modality of utilisation and the clinical efficacy of drug eluting stents (DES) in a real world multivessel PCI scenario.
Methods: From July 2002 to December 2004, 1726 consecutive patients enrolled in the REAL Registry (Registro REgionale AngiopLastiche Emilia-Romagna) underwent elective multivessel PCI with multiple stents in at least two different vessels; among them, 939 (54%) received only bare-metal stents (BMS group), 288 (17%) only DES (DES group) and 499 (29%) were treated with BMS and DES in different vessels (MIX group). The incidence of major adverse cardiac events (MACE=death, myocardial infarction and target vessel revascularisation) during follow-up was assessed.
Results: Patients in the BMS group were older, diabetes was more frequent in the DES and MIX groups, while more lesions and more often a three vessel treatment was performed in the MIX group. In the DES group, lesions were longer, in smaller vessels and more often in the left main compared with BMS and MIX groups. In the MIX group too, lesions treated with DES were at higher risk for restenosis than those treated with BMS. Procedural success was similar in the three groups (98.9%). Notwithstanding the different risk profile, 12-month follow up did not show differences in clinical end points among the three groups. Multivariate analysis indicated that age, a modified Charlson's comorbidity index and diabetes were independent predictors of death or AMI; total lesion length, use of only DES or MIX approach and treatment of left main were predictors of TVR, while left main treatment along with only DES use, modified Charlson's index and reference vessel diameter independently affected the incidence of MACE. Use of at least one DES reduced the risk of TVR by 37% and MACE by 29%, while DES in every lesion treated reduced TVR risk by 37% and MACE by 39%.
Conclusions: In this large multicentre registry, DES were utilised in only half of the multivessel PCI procedures, mainly to treat high-risk patients and lesions. However, this selective use of DES was independently associated with a lower incidence of 1-year TVR and MACE. Whether increasing the rate of DES utilisation would further improve the clinical outcome remains to be investigated.