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Stent Thrombosis After Implantation of Drug Eluting and Bare Metal Coronary Stents in Western Denmark

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Background: The use of drug eluting stents (DES) has recently been associated with increased risk of stent thrombosis (ST). Based on the Academic Research Consortium definition, we report the incidence of ST in patients treated with DES (Cypher™ or Taxus™) and bare metal stents (BMS) in Western Denmark.

Methods: From January 2002 to June 2005 data from all percutaneous coronary interventions in Western Denmark were prospectively recorded in the Western Denmark Heart Registry. A total of 13,040 patients (17,331 lesions) were treated with stent implantation and followed for 15 months. A specialist committee adjudicated end points. In the period of DES use, the recommended duration of clopidogrel treatment was 12 months. Mortality data and data on myocardial infarction (MI) were obtained from the Danish Civil Registration System and the Danish National Patient Registry. Rates of end points were assessed according to type of stent. Cox's proportional hazards regression analysis was used to compute hazard ratios (HRs) as estimates of relative risk controlling for differences in prognostic covariates.

Results: A total of 5,422 lesions were treated with DES and 11,730 lesions were treated with BMS. There were 106 definite STs (0.62%), (DES (n=35) 0.65%, BMS (n=71) 0.61%)(ns). Acute ST was seen in 20 lesions; DES (n=8) 0.15%, BMS (n=12) 0.10% [adjusted HR 1.4; 95% CI 0.6-3.4], subacute ST in 61 lesions; DES (n=15) 0.28%, BMS (n=46) 0.39% [adjusted HR 0.7; 95% CI 0.4-1.2], late ST in 19 lesions; DES (n=7) 0.13%, BMS (n=12) 0.10% [adjusted HR 1.2; 95% CI 0.5-3.1] and very late ST in 6 lesions; DES (n=5) 0.09%, BMS (n=1) 0.01% [adjusted HR 10.3; 95% CI 1.2-88.7].

Overall, definite, probable or possible ST was found in 195 (2.2%) patients in the BMS group and in 67 (1.9%) patients in the DES group.

Data on mortality, MI, lesion and treatment complexity, and on patient characteristics in DES and BMS treated groups will be available at the presentation.

Conclusions: With recommended clopidogrel treatment duration of 12 months, overall rates of stent thrombosis were low and similar during 15 months after DES and BMS implantation. After 12 months, however, the definite stent thrombosis rate appeared to be increased in DES patients.