ARE STENT RELATED AND NON-STENT RELATED DEATHS DIFFERENT BETWEEN DRUG-ELUTING STENTS AND BARE METAL STENTS? A PATHOLOGIC STUDY

i2 Oral Contributions
Ernest N. Morial Convention Center, Room 353
Monday, April 04, 2011, 9:10 a.m.-9:24 a.m.

Session Title: DES II
Abstract Category: 16. PCI - DES (clinical/outcomes)
Presentation Number: 2905-10

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Background: Drug-eluting stents (DES) have been implanted in millions of patients worldwide and have radically reduced restenosis, whereas large clinical trials have not shown benefits of DES in reducing mortality as compared to bare metal stents (BMS). Little is known however, about cause of death from a pathologic insight between BMS and DES in human coronary implants.

Methods: All available material from the CVPath stent registry obtained between 2002 and 2010 to include a total of 299 autopsy cases (142 BMS, 157 DES, 81 sirolimus-eluting stents, and 76 paclitaxel-eluting stents) with stents implanted in native coronary arteries, durations exceeding 30 days were examined.

Results: Age, sex, and coronary risk factors were similar for patients receiving BMS, or DES. Patients receiving BMS had a higher prevalence of prior history of myocardial infarction (BMS; 66% vs. DES; 50%, p=0.009) and coronary artery bypass grafts (BMS; 23% vs. DES; 12%, p=0.008) than those receiving DES. The median stent implant duration was shorter in DES as compared to BMS (DES; 361 [172, 540] vs. BMS; 721 [271, 1801] days, p<0.001). In-stent restenosis related death was more frequently observed in BMS than DES (BMS; 28% and DES; 7%, p<0.001). On the other hand, deaths from stent thrombosis were significantly more frequent in DES than BMS (DES; 20% vs. BMS; 4%, p<0.001). However, stent related deaths were similar between BMS and DES (BMS; 31% vs. DES; 26%, p=0.351). In addition, the incidence of non-stent related cardiac death (BMS; 32% vs. DES; 38%, p=0.293) and non-cardiac death (BMS; 33% vs. DES; 29%, p=0.563) were similar between the groups. There were no differences between SES and PES in regard to the cause of death.

Conclusions: The incidence of stent related deaths are similar between 1st generation DES and BMS, with higher incidence of stent thrombosis in DES and restenosis in BMS. However, duration of stent implantation is significantly longer in BMS than DES. Therefore, long-term follow-up is necessary to determine the benefit of DES.