

PATHOLOGY OF DRUG ELUTING STENTS AND BARE METAL STENTS IN THE LEFT MAIN CORONARY ARTERY

i2 Oral Contributions

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Background: SCoronary artery bypass grafting has been the standard of care for obstructive left main coronary disease (LMCA). However, stenting of the LMCA is now in widespread clinical practice. The aim of this study was to evaluate pathological characteristics between DES and BMS stented LMCA at autopsy.

Methods: Baseline characteristics (gender, age and duration of survival) of all LMCA stent cases (DES: n=12, BMS: n=15; total n=27) were retrieved. Stented cross sections (n=3) of the LMCA were assessed for healing (% strut coverage, neointimal thickness) and thrombus formation (>30% of lumen occupying by thrombus). Cause of death was characterized as stent related (SRD), non-stent related cardiac death (NSRCD) and non-cardiac death (NCD). Acute cases <30 days (BMS n=4 and DES n=4) were excluded for the assessment of % strut coverage and measurement of neointimal thickness.

Results: Baseline characteristics were: gender, DES: 3 female, 9 male; BMS: 4 female, 11 male, p=0.53; duration of survival after implantation, DES: 212±324, BMS: 189± 206, p=0.98; age, DES: 73.2± 8.8, BMS: 56.0± 12.8, p=0.001) and stent length, DES: 29.6±18.0, BMS: 16.2± 5.5, p= 0.02). Pathological findings presented no differences in cause of death (DES: 7 SRD, 4 NSRCD, 1 NCD; BMS: 6 SRD, 4 NSRCD and 5 NCD, p=0.26) and incidence of thrombus formation was not different (DES: 6, BMS 6, p=0.79) between DES and BMS. However, neointimal thickness was significantly greater in BMS (0.34±0.05 mm, p=0.019) as compared to DES (0.12±0.06mm) and uncovered struts were more frequent in DES (34±32%) than in BMS (7±14%, p=0.05).

Conclusions: Stent related death occurred in 8/27 (about 30%) and was not different between BMS and DES and another 8/27 (about 30%) died of NSRCD; despite the introduction of DES cause of death has not changed for LMCA disease. DES have greater numbers of uncovered struts than BMS and this remains a nidus for future events.