



E1647
JACC March 12, 2013
Volume 61, Issue 10

TCT@ACC-i2: Invasive and Interventional Cardiology

COMPARISON OF OPTICAL COHERENCE TOMOGRAPHY FINDINGS OF VERY LATE STENT THROMBOSIS BETWEEN DRUG-ELUTING STENT AND BARE-METAL STENT

Poster Contributions

Poster Sessions, Expo North

Saturday, March 09, 2013, 10:00 a.m.-10:45 a.m.

Session Title: Coronary Stents

Abstract Category: 47. TCT@ACC-i2: Coronary Intervention, Devices

Presentation Number: 2101-225

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Background: Very late stent thrombosis (VLST) after drug-eluting stent (DES) implantation is one of unresolved and serious adverse cardiac events in DES era. However, VLST was reported to occur even in patients with bare metal stent (BMS) implantation. Mechanism of VLST after DES and BMS implantation remains unclear.

Methods: From March 2009 to August 2012, OCT was performed in 23 patients with VLST (13 DES-treated patients and 10 BMS-treated patients) during emergent coronary angioplasty in Tsuchiya General Hospital and Hiroshima Asa City Hospital. OCT qualitative tissue analysis (thrombus, intra-luminal material, thin-cap fibroatheroma (TCFA), and intimal hyperplasia tissue characteristics) was compared between DES-treated and BMS-treated lesions. The proportion of uncovered and malapposed struts in each stented segment developed VLST was evaluated and the % plaque area was calculated.

Results: Thrombus was observed in all 23 lesions. The proportion of uncovered and malapposed struts in DES-treated lesions were $8.1 \pm 8.3\%$ and $12.5 \pm 17.4\%$, respectively. However in VLST lesions after BMS implantation, most stent struts were completely covered and malapposed struts were rarely observed. Intimal disruption was observed in 4 lesions (30.0%) in DES-treated lesions and in 4 lesions (40.0%) in BMS-treated lesions, and severe intimal hyperplasia (% plaque area $>60\%$) was observed in 7 lesions (53.8%) in DES-treated lesions and in 8 lesions (80.0%) in BMS-treated lesions.

Conclusions: The main mechanism of VLST in BMS-treated lesions may be severe intimal hyperplasia or intimal disruption. However, in DES-treated lesions various mechanisms (uncovered strut and malapposed struts, severe intimal hyperplasia and intimal disruption) may participate in VLST.