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Sub-acute thrombosis after the crush-stenting technique with Cypher stents

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A 59-year-old man was admitted to our hospital to put into a coronary artery angiography. He underwent an percutaneous coronary intervention (PCI) for acute myocardial infarction of right coronary artery (RCA) in October, 2002. Exercise cardiac scintigraphy (January, 2005) showed ischemic changes of left coronary artery (LAD) region. Angiography (February, 2005) showed 90% stenosis in proximal LAD (segment 6) and diagonal branch (segment 9) bifurcation region. PCI (brachial approach) was performed for the bifurcation stenosis with crush stenting technique. Cypher stent 3.5×18mm was inserted for segment 6, and Cypher stent 2.5×23mm for segment 9. Guide wire crossed in segment 9 after stent implantation, but the balloon could not pass the bifurcation. So plain old balloon angioplasty (POBA) with kissing balloon technique after stenting could not be performed. Post operative date 5, the patient had chest pain. Emergent angiography showed total occlusion in ostium of segment 9, and emergent PCI (femoral approach) was performed. POBA with kissing balloon technique was successfully performed in segment 6 and 9. In the case of crush stenting with Cypher stent, it is important to make all possible efforts to perform the kissing balloon technique in the target region.

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Initial clinical outcomes with the Driver stent in ACS

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Background: A new cobalt-chromium alloy coronary stent Driver is reported lower target lesion revascularization ratio compared with former stainless stents. We investigated initial clinical outcome of this stent for the treatment of acute coronary syndrome (ACS). Method: 104 patients (130 lesions, ACS91.3%) underwent emergent coronary angiography and subsequent percutaneous coronary intervention (PCI) for ACS. Patient characteristics including age, sex, risk factors and cardiac function were recorded. Lesion characteristics (culprit vessel, culprit lesion) were evaluated. Lesion and clinical success ratio and 6 months MACE were also investigated. Quantitative coronary angiography (QCA) was performed before and after PCI procedure. Result: The results were shown in table below. Conclusion: Driver stent showed good clinical outcome and relatively lower 6 months MACE for ACS treatment.

Baseline Clinical Characteristics		
Patients	104	
Age (years)	67.7±10.8	
Male (%)	81	(77.1)
ACS (%)	95	(91.3)
Diabetes melitus (%)	31	(29.5)
Hypertension (%)	59	(56.2)
Hyperlipidemia (%)	38	(36.2)
Clinical outcomes		
Device success (%)	130(100)	
In-hospital MACE (%)	6 (4.6)	
in-hospital death (%)	5 (3.8)	
QMI (%)	1 (0.8)	
SAT (%)	0 (0)	
Clinical driven TLR ratio		
number of lesions	130	
in stent restenosis	22 (16.8)	
TLR	17 (13.0)	

Lesion Characteristics / QCA analysis	
Number of Lesions	130
Target vessels (%)	
LMT	6 (4.6)
LAD	50 (39.2)
LCX	15 (11.5)
RCA	58 (44.6)
Pre-procedure	
RD (mm)	3.40±1.01
MLD (mm)	0.46±0.59
% DS	86.53±15.1
LL (mm)	11.56±5.13
Post-procedure	
RD (mm)	3.69±0.82
MLD (mm)	3.36±1.14
% DS	10.59±8.29
Acute gain (mm)	2.40±1.30

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Short-term outcomes for Sirolimus-eluting stents for PCI in AMI

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BACKGROUND: Sirolimus-eluting stents (SES) have recently been proven to reduce restenosis and reintervention compared with bare metal stents. However, data on the safety and effectiveness of SES in acute myocardial infarction remains scarce. METHODS AND RESULTS: 34 consecutive patients with acute myocardial infarction were subjected to acute PCI with SES from August 2004 to April 2005. The incidence of major adverse cardiac events (death, nonfatal myocardial infarction, reintervention) was evaluated. At baseline, diabetes mellitus was present in 41.2% and multivessel disease in 61.8% of patients. Infarct location was anterior in 17 (50%) of the cases and LMT in 2 cases (5.9%). Multiple stenting was performed in 50% of the cases. Post-procedural TIMI-3 flow was achieved in 67.6% of the cases. The mean period of hospitalization was 17±9 days; 2 in-hospital death occurred due to heart failure; and in-hospital mortality was 5.9%. During follow-up (mean follow-up of 91±55 days) visits, 1 patient died due to infection, none of the patients had recurrent myocardial infarction, and there were no additional reinterventions. No stent thromboses were documented. To explore the SES's long-term effectiveness, angiographic follow-ups have been scheduled over the next 8 months. CONCLUSIONS: In this study, sirolimus-eluting stent implantation for patients with acute myocardial infarction is feasible and safe.

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Clinical results for the Cypher stent in patients with AMI

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Background and Objective

The safety of Cypher Stent, Sirolimus-Eluting stent, is still controversial in challenging situation in patients with AMI. We examined the safety and efficacy of Cypher Stent through initial clinical results.

Methods

Fifty-seven patients with AMI (63 lesions, 44 males and 13 females, average 65 years old) that underwent implantation of Cypher Stent from September 2004 to February 2005 were evaluated for initial success rate, complications and MACE at 30 days.

Results

Target vessel was LAD in 34 cases, RCA in 17 cases, LCX in 11 cases and LMT in 1 case. Stent deployment was successful in all cases, but TIMI3 flow was not achieved in 3 cases (revascularization successes rate was 95.2%). RD was 2.44±0.48mm and each MLD and %DS before and after procedure was 0.22±0.69mm, 94.5±9.3% and 2.70±0.40mm, 9.8±6.5%. Ticlopidine had been taken in 1 case before the procedure and was started after the procedure in 53 cases (93%). Four cases failed to take Ticlopidine (2 patients required emergent surgery due to the complication of VSP and 1 patient had intestinal bleeding, and 1 patient died on first hospital day). No stent thromboses were documented. MACE at 30 days was 1.8% (1 case of cardiac rupture).

Conclusion

Cypher Stent implantation for the patients with AMI was safe without documented stent thromboses. The long-term results from this study will be presented.

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Is drug-eluting stent implantation in primary PCI safe or not?

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[Purpose] Drug-eluting stent (DES) implantation in percutaneous coronary intervention (PCI) surprisingly reduced the risk of major adverse events and repeat intervention. But the safety of DES implantation for primary PCI is not well known. This study investigated the clinical outcomes between primary PCI and delayed PCI in the patients with acute myocardial infarction treated with DES.

[Methods] Since April 2003 to June 2004, 138 patients (217 lesions) with acute myocardial infarction underwent PCI with DES implantation. Patients were divided to primary and delayed PCI groups. The clinical characteristics, PCI result and clinical outcomes were evaluated.

[Results] Clinical follow-up more than 9 months was available in 87.6%. Mean follow-up duration was 14.5 months. See as a following table.

[Conclusion] DES implantation in primary PCI for the patients with more complex condition was safe and effective as use in delayed PCI for the patients of acute myocardial infarction.

Table. Clinical characteristics of patients, PCI result and follow up clinical events

Group (n=patient/lesion)	Primary PCI (n = 21/27)	Delayed PCI (n = 117/190)	p Value
Male (%)	76.2	70.1	0.794
Age, yrs	58.9±11.8	61.1±11.3	0.410
DM (%)	38.1	25.6	0.289
Ejection fraction	42.9	47.2	*0.004**
Pre-PCI RD/MLD, mm	3.21±0.41/0.16±0.21	3.09±0.33/0.44±0.27	0.153/*0.000**
Lesion length, mm	25.4±10.1	22.9±10.2	0.250
Stent length, mm	26.9±5.6	24.4±5.4	*0.027**
Stent size, mm	3.2±0.4	3.1±0.3	0.559
Post-PCI MLD, mm	3.02±0.45	3.02±0.35	0.988
Death/Nonfatal MI (%)	4.5/0	0/0	0.116/1.0
TVR/MACE (%)	0/4.5	2.4/2.4	1.0/0.463

DM: diabetes, VD: vessel disease, RD: reference diameter, MLD: minimal diameter, TVR: target vessel revascularization, MACE: major adverse cardiac event, * p value < 0.05

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Triple anti-platelet therapy with cilostazol plus ticlopidine plus aspirin for primary coronary stenting in AMI

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[Purpose] Triple anti-platelet therapy with asprin plus ticlopidine plus cilostazol was demonstrated to be safe and effective in elective coronary stenting. This anti-platelet therapy has also been administered to emergency stenting cases with acute myocardial infarctions in some institutions. However the efficacy and safety of triple anti-platelet therapy remains unknown. [Methods] We retrospectively collected consecutive acute myocardial infarction cases, which successfuly underwent primary coronary stenting from Jan 2003 to August 2004. Seventy-five cases were assigned to the following two groups; aspirin plus ticlopidine group (T group, n=18), and aspirin plus ticlopidine plus cilostazol group (C group, n=57). [Results] Clinical characteristics and angiographic parameters were comparable between the 2 groups. The rate of bleeding complications, cardiac death and non-cardiac death tended to be lower in C group (17, 11 and 17% in T group, and 9, 2 and 5% in C group, p=NS). No subacute stent thrombosis occurred but there were two cases of acute myocardial infarctions precipitated by other lesions in T group. Target lesion revascularization rate was 17% in T group and 16% in C group. [Conclusion] There was no evidence of increased risk of bleeding in patients treated with aspirin plus ticlopidine plus cilostazol.

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Pre-treatment with a high loading-dose of clopidogrel before coronary stenting improves short-term outcomes in ACS patients

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[Purpose] To compare the short-term efficiency and safety of high loading dose (600mg) clopidogreal pretreatment with that of routine dose (300mg) before coronary stenting in patients with acute coronary syndromes (ACS).

[Methods] Between February 2003 and July 2004, a total of 316 patients with ACS who received 600mg clopidogrel before coronary stenting were prospectively registered. A total of 309 comparable patients who received 300mg clopidogrel between October 2001 and January 2003 were selected as control. The primary endpoints were major adverse cardiac events (MACE) at 30 days, including death, myocardial infraction (MI) and urgent target vessel revascularization (UTVR). The second endpoints were hemorrhagic events at 30 days and subacute stent thrombosis (SAT) after stenting.

[Results] The baseline clinical and angiographic characteristics were comparable between the 2 groups except that 600mg group had more multivessel disease (74.7% vs 66%, p= 0.018). Procedure success rate was 97.5% in 600mg group and 98.7% in 300mg Group (p=NS). SAT occurred in 8(2.6%) patients in 300mg group but none (0%) in 600mg group (p= 0.003). The incidence of MACE at 30 days in 600mg group were significantly lower than that of 300mg group (1% vs 3.6 %, p= 0.027). There were no differences between the 2 groups in the incidence of major or minor bleeding events (1.3% in 600mg group vs 0.97 % in 300mg group).

[Conclusion] High loading dose of clopidogrel as pretreatment before coronary stenting in patients with ACS is safe and more efficient than 300mg in reducing short-term MACE and SAT.