	DCA + Stent	Stent	p value
Lesion type (B2 + C)	76 60%	69 38%	ns
Pre REF (mm)	3 26 ± 0 46	3 22 ± 0 41	ns
Pre MLD (mm)	0 34	1 10 ± 0 44	0 005
Pre %DS	72 20 ± 9 74	66 07 ± 12 17	0 005
Lesion length (mm)	11 41 ± 5 93	12 06 ± 6 12	ns
Post MLD (mm)	3 49 ± 0 59	3 14 ± 0 52	0 001
Post %DS	0 31 ± 9 46	6 11 ± 10 62	0 001
FU MLD (mm)	2 79 ± 0 73	2 08 ± 0 77	0 0001
FU %DS	16 36 ± 17 92	34 64 ± 20 28	0 0001
Acute gain (mm)	2 59 ± 0 61	2 03 ± 0 55	0 0001
Late loss (mm)	0 70 ± 0 66	1 05 ± 0 74	0 0005
Loss index	0 26 ± 0 29	0 55 ± 0 46	0 0001
Restenosis	4 00%	20 37%	0 01

Conclusion: Directional coronary atherectomy prior to stenting, when compared to stenting alone, results in larger post-procedure lumen gain and significantly lower restenosis at six month angiographic follow up.

1138-85 The Influence of Stent Implantation on the Increase of Plaque Area (Stent vs Atherectomy Randomized Trial; START)

T. Kobayashi, S. Sumitsuji, E. Tsuchikane, N. Awata, T. Kobayashi. *Osaka Medical Center for Cancer and Cardiovascular Diseases, Osaka, Japan*

It is well known that Stenting decreases restenosis ratio after PTCA. On the other hand, recent papers reported that Stent implantation caused more increase in plaque area (PA) than other devices. To clarify the influence of stent implantation on PA increase, we attempted to compare PA change after intervention between stent and DCA in randomized trial. In this randomized trial (START) 115 lesions were included (58 DCAs and 57 Palmatz-Schatz stents). Serial IVUS study was performed at pre, post-procedure and follow-up (mean 175 days after procedure). Vessel area (VA), stent area (SA) and lumen area (LA) were measured. PA was calculated as VA-LA in DCA group. In stent group, neoPA was defined as SA-LA which means an area of in-stent neointimal hyperplasia. The changes of LA, PA and neoPA during follow-up were compared.

Stent (n = 58)	Pre	Post	Fu
SA (mm^2)	7 89 ± 2 19	8 24 ± 2 29	
LA (mm^2)	1 61 ± 0 71	7 88 ± 2 17	5 48 ± 2 69
neoPA (mm^2)		0 01 ± 0 10	2 76 ± 2 16
DCA (n = 57)	**Pre**	**Post**	**Fu**
VA (mm^2)	15 94 ± 4 00	17 82 ± 3 89	17 71 ± 4 51
LA (mm^2)	1 88 ± 1 45	8 27 ± 1 63	7 13 ± 3 27
PA (mm^2)	9 55 ± 2 94	10 58 ± 2 93	
	Stent (n = 58)	DCA (n = 57)	
dPA (mm^2)	2 76 ± 2 16	1 14 ± 2 38	(p < 0 001)
dLA (mm^2)	2 41 ± 2 23	1 18 ± 2 84	(p = 0 011)

Conclusion: Stent implantation caused more increase of plaque and decrease of lumen during follow-up than DCA.

1138-86 Cutting Balloon Angioplasty vs. Plain Old Balloon Angioplasty Randomized Study in Type B/C Lesions (CAPAS)

M. Izumi, E. Tsuchikane, S. Otsuji, H. Tateyama, N. Awata. *Osaka Medical Center for Cancer and Cardiovascular Diseases, Osaka, Japan*

To evaluate the efficacy and safety of cutting balloon angioplasty (CB) for type B/C lesions, a prospective randomized trial was designed. This study started in Nov. 1995 and 203 lesions were enrolled by Feb. 1997. Inclusion criteria were as follows: type B/C lesions (ACC/AHA classification), reference diameter (RD) > 2.8 mm. Exclusion criteria were as follows: heavily calcified lesion, severely bent lesion and AMI culprit lesion. Furthermore, lesions with incomplete balloon expansion or interrupted and severe dissection requiring stenting were defined as drop-outs. 203 lesions were divided into two groups (CB:101, POBA: 102 lesions). Eligible lesions were 72% (73/101) in CB and 79% (81/102) in POBA. Quantitative Coronary angiography (QCA) was to be performed at pre, post-PTCA and 3 months follow-up (3M) using Cardiovascular Measurement System Ver. 3 (CMS). Baseline QCA data were not different in the 2 groups [RD: 2.16 ± 0.40: 2.20 ± 0.40 mm, minimal lumen diameter (MLD): 0.67 ± 0.27: 0.68 ± 0.26 mm, %diameter stenosis (%DS): 69 ± 11: 69 ± 11% (CB: POBA)]. Post-QCA data were also not different [MLD: 1.64 ± 0.39: 1.57 ± 0.50 mm, %DS: 26 ± 12: 30 ± 12%, Balloon/Artery ratio: 1.25 ± 0.22: 1.22 ± 0.22 (CB: POBA)]. There were no major in-hospital complications in the 2 groups. 3M-QCA data were not different [MLD: 1.27 ± 0.50: 1.24 ± 0.53 mm, %DS: 40 ± 20: 44 ± 19% (CB: POBA)]. Target lesion revascularization (TLR) rate was 25% (18/73) in CB and 41% (33/81) in POBA.

Conclusion: Cutting balloon angioplasty was performed safely compared to plain old balloon angioplasty for type B/C lesions. As for initial success, there were no remarkable differences between the 2 groups. But, 3M data (TLR) would suggest CB for type B/C lesions may reduce restenosis.

1138-87 Long-term Angiographic and Clinical Outcome After "Stand-Alone" Cutting Balloon Angioplasty in Patients With Non-complex Coronary Artery Disease

M. Mori, H. Kurogane, T. Kajiya, T. Hayashi, J. Shite. *Himeji Cardiovascular Center, Himeji, Japan*

We compared angiographic and clinical outcome after stand-alone cutting balloon angioplasty and conventional balloon angioplasty in patients with non-complex coronary artery disease.

Methods: According to lesion characteristics and severity, prospectively collected consecutive 80 patients (90 lesions) treated with stand-alone cutting balloon angioplasty were matched with 83 patients (90 lesions) treated with conventional balloon angioplasty. The stand-alone cutting balloon technique was different from original protocols in that multiple cutting balloon inflations were allowed in the same lesion. Quantitative analysis of coronary segments was performed immediately, before and after the procedure and was repeated at 6 months follow-up. Clinical information were obtained 1 year after successful angioplasty.

Results: Both interventions comparably increased lumen diameter. However, maximum inflation pressure was lower in the cutting balloon group (7.1 ± 1.0 vs. 8.0 ± 1.7 atm., P < 0.001). There was no significant difference in the incidence of acute complications between the groups. The frequency of restenosis was lower in the cutting balloon group (23.8 vs. 40.6%, p < 0.05). The incidence of major cardiac events at 1 year was also lower in the cutting balloon group (event-free survival at 1 year: 85.1% vs 72.2%, p < 0.05).

Conclusion: Stand-alone cutting balloon angioplasty could be performed safely and demonstrate favorable late angiographic and clinical outcome in patients with non-complex coronary artery disease.

1138-88 Acute Results of the Restenosis Reduction by Cutting Balloon Evaluation Study

H. Hosokawa, T. Yamaguchi, T. Kobayashi, T. Muramatsu, H. Nishikawa, T. Inoue, T. Matsushita, H. Hirayama, T. Kondo, K. Kanemasa, M. Kijima, T. Suzuki. *For the REDUCE Investigators, National Toyohashi Higashi Hospital, Toyohashi, Japan*

Background: The REstenosis ReDUction by Cutting Balloon Evaluation (REDUCE) is a prospective multicenter (44 Japaneses sites) registry to assess the efficacy of Cutting Balloon (CB).

Methods: Total target registry is 800 patients, who are randomly assigned to either CB or conventional balloon angioplasty (POBA). At present, preliminary acute results are available for 208 patients out of a 460 patient registration.

Results: Procedural success was 90% in both groups. CB can provide similar acute angiographic results to POBA, however the incidence of coronary dissections was significantly lower in CB than POBA (26% vs 41%, p = 0.04). Procedure data were significantly different between each group: number of inflation (2.6 vs 3.1, p = 0.005), inflation time (3.6 vs 4.9 min., p = 0.0005), maximum inflation pressure (7.2 vs 10.5 ATM, p = 0.0001).

QCA Results	CB (n = 107)	POBA (n = 101)	p-value
Ref D (mm)	3 1 ± 0 4	3 0 ± 0 5	ns
MLD pre (mm)	1 2 ± 0 4	1 1 ± 0 4	ns
MLD post (mm)	2 2 ± 0 2	2 1 ± 0 5	0 08
%DS pre	63 ± 14	65 ± 11	ns
%DS post	27 ± 11	30 ± 12	ns

Ref D = reference diameter, MLD = minimal lumen diameter, %DS = percent diameter stenosis

Conclusion: Cutting Balloon produced less dissections than POBA. A larger MLD was obtained in CB cohort than POBA, which may be associated with lower restenosis at follow-up.

TUESDAY POSTER