

급성 심근 경색 후 풍선 확장술과 그 결과가 만족스럽지 못한 환자군에서의 지지적 스텐트 시술

최재웅 · 문찬일 · 정경태 · 박순창 · 송창섭 · 임진우

Balloon Angioplasty and Stent-Supported Angioplasty for Acute Myocardial Infarction

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ABSTRACT

Background : Although the superior reperfusion and improved clinical outcome following angioplasty for acute myocardial infarction (AMI) have been well known, 10 to 15% of reinfarction and recurrent ischemia in hospital are main limitation of primary percutaneous transluminal coronary angioplasty (PTCA). This study was undertaken to examine the safety and feasibility of stent-supported primary angioplasty in acute myocardial infarction. **Methods :** Between July 1995 and Jun. 1997, 32 patients underwent direct or rescue PTCA, including patients with cardiogenic shock. After PTCA, stenting was attempted in patient with dissection or having more than 30% of residual stenosis. **Result :** In patient with direct PTCA, angiographic success rate was obtained in 91% (30/32). Stenting was attempted in 15 of 30 patients. These patients had suboptimal results (8 patients), non-occlusive dissection (3 patients) and acute occlusion (2 patient). Thrombolysis in myocardial infarction (TIMI) grade 3 flow was restored in 28 patients (93%). In one patient no-reflow phenomena was observed following stent insertion. Despite intra-aortic balloon pumping, there was one death during the hospitalization due to cardiogenic shock following PTCA. Subacute stent thrombosis developed in two patients. 27 patients (90%) were event-free and clinically improved through out the follow up period (11.5 ± 5.2 month). Quantitative angiography showed excellent angiographic result after stenting compared with balloon PTCA (2.4 ± 0.6 mm vs. 3.4 ± 0.3 mm p < 0.01). **Conclusion :** After failure of initial angioplasty, coronary stenting can be a supportive therapeutic strategy. Coronary stenting results in a high degree of angiographic success, a low incidence of subacute thrombosis. (*Korean Circulation J* 1998;28(7):1185-1191)

KEY WORDS : Acute myocardial infarction · Stent-supported angioplasty.

서 론

가

, 가

: 1998 4 8

: 1998 6 25

: , 139 - 231

280 - 1

1 - 5)

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5%

, 37 49%

5 10%

, 3

(primary PTCA) 20% , Balloon PTCA ,
가 6 , TIMI flow 2 ,
1)4)6)7) (dissection) 30% 15
가 30% 15
가 8)19)20) TIMI flow 2
30%
reference diameter 1.1 : 1
10
가⁹⁻¹⁶⁾ 3.0 mm
가
가 aPTT가 80
(dissection)가 Sheath , Sheath
kg 200 unit 12
5 . Ticlopidine
, 500 mg ,
2 .

대상 및 방법

환자군 대동맥 대위 박동(IABP)
1995 7 1 1997 6 30 2 90
72 IABP 90 mmHg
32 . 30 6 IABP
Primary PTCA , 2 rescue , 가 24
PT - CA (dissection)
, 30%
Thrombolysis in myocardial infarction(TIMI) 2
15
(balloon PTCA) , balloon PTCA 72
dissection (suboptimal
result) 15
. Wire 가 2
. 30 15
, 가 5 , 가
2 , 가 8
. , ,
관상 동맥 성형술
300 mg Killip class 3 or 4
가 2
900 mg
10,000 unit ACT 250 4 , 5 (Table 1).
(IRA) Balloon PTCA 15 suboptimal

result(post - PTCA 30% TIMI 가 0 no - reflow
) 9 , 가 5 urokinase 20 unit
15 17
3.4
±0.3 mm 16 mm 2.4 ± 0.6 mm 26.9 ± 14.2%
Magic wall 48 mm 1 , Nir 32 mm 1
, 2 Nir 32 mm 16 mm ,
Nir 16 mm 16 mm .
Micro II 8 , Nir 6 , ACS
multilink 1 , Wictor 1 , Magic wall 1 .
12.3 ± 1.9 3.4 ± 0.3 mm ,
2.4 ± 0.6 mm 가
(p<0.01). (Table 3).
Fig. 1 .

추적 관찰

20% wire 가 2 1
2 1

혈관 조영 소견

Table 2 30 27 가
primary PTCA , 3 rescue PTCA

(LAD), (RCA), (Lcx)
TIMI 0,1 12 , 11
TIMI 2,3
1

Table 1. Patient characteristics

	PTCA only (N = 15)	Stent (N = 15)	p Value
Age	60.8 ± 10.3	54.7 ± 10.0	0.11
Sex (male)	10	10	NS
Smoker	7	9	NS
Hypertension	6	5	NS
DM	4	3	NS
Total cholesterol > 230 mg/dl	1	2	NS
Killip class			NS
I or II	10	11	
III	3	1	
IV	2	3	
Previous MI history	1	2	NS

PTCA : percutaneous transluminal coronary angioplasty ; DM : diabetic mellitus ; NS : non-significant ; MI : myocardial infarction

Table 2. angiographic characteristics

	PTCA only (N = 15)	Stent (N = 15)	p Value
PTCA			0.5
Primary	14	13	
Rescue	1	2	
No of diseased epicardial vessel			0.7
One	7	5	
Two	7	8	
Three	1	2	
Infarct-related artery			0.3
LAD	8	9	
LCx	2		
RCA	5	6	
TIMI flow			0.5
0,1	11	13	
2	3	2	
3	1	0	
MLD (mm)	0.5 ± 0.7	0.6 ± 0.6	0.75
DS(%)	90.1 ± 13.3	88.1 ± 13.2	0.68
IABP	5	4	

PTCA : percutaneous transluminal coronary angioplasty ; TIMI : thrombolysis in myocardial infarction ; LAD : left anterior descending ; LCx : left circumflex ; RCA : right coronary artery ; DS : diameter stenosis ; MLD : minimal luminal diameter ; IABP : intra-aortic balloon counter pulsation

Table 3. Angiographic outcome

	PTCA only	Pre-stenting	Post-stenting	P Value
MLD (mm)	2.4 ± 0.6	1.2 ± 0.8	3.4 ± 0.3	0.025
DS (%)	26.9 ± 14.4	67.4 ± 24.8	2.2 ± 6.7	0.02
TIMI				0.25
0,1	0	2	0	
2	1	2	1	
3	14	11	14	

MLD : minimal luminal diameter ; DM : diameter stenosis ; TIMI : thrombolysis in myocardial infarction

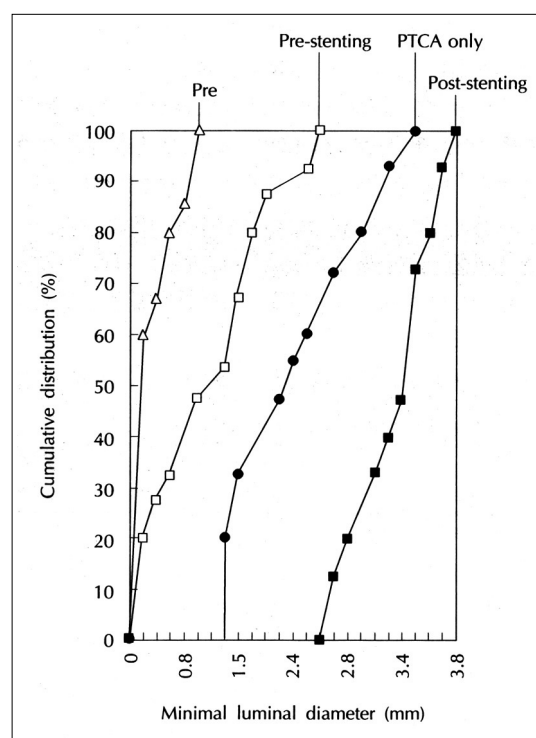


Fig. 1. Cumulative distribution curves for minimal lumen diameter before (Pre), immediately after ballooning and stenting in both balloon and stent group.

고찰

65% 90% 50% 40% 30% 0.4 32 72 32 2 30 result 8 2 15 17 11 mm 2.4 ± 0.6 mm(p<0.05) 1.2 ± 0.8 2 TIMI grade 3

26.9±14.2% 가 30% .

48 mm 1 , 32 mm 1 , 32+
가 16 mm 1 , 16+16 mm 1 2

, 6 , 4 2

1 14

가

18 no - reflow 1 가 1 . No - reflow urokinase

20 unit TIMI 2 .

가

요 약

6 - 13) 가

연구배경 :

가가

가

10 15%

가

21)22) 가 4

3

방 법 :
1995 7 1997 6

10 30

가

30%

15

결 과 :

가 23)24) 32

wire 가 2 30

가 93.8%

30 15 , 15

5 17

(100%). 2.4 ± 0.8 mm,
 $29.6 \pm 14.4\%$,
 1.2 ± 0.8 mm, $67.4 \pm$
 24.8% ($p < 0.01$).
 3.4 ± 0.3 mm, $2.2 \pm 6.7\%$
가 ($p < 0.01$).

1 no - reflow 2
. 27 (90%)
11

결 론 :

가

가

가

중심 단어 :

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