

요골동맥을 이용한 관상동맥 중재술 후 선택된 환자에서 조기퇴원의 안전성

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Safety of Transradial Coronary Intervention with Early Discharge in Selected Patients

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ABSTRACT

Background and Objectives : Transradial percutaneous coronary intervention enables early ambulation and causes less complications at the puncture site. This study was performed in order to evaluate the safety of transradial coronary intervention with early discharge in selected patients. **Materials and Method :** Thirty patients were studied retrospectively. Twenty-five patients experienced transradial percutaneous coronary intervention with next morning discharge and 5 patients underwent transradial percutaneous coronary intervention on an outpatient basis. Each patient was checked for cardiovascular complications and other problems at the puncture site immediately following, 2 weeks after and 1 month after the procedure. **Results :** The study group consisted of 30 patients with a mean age of 60 years. The indications for intervention were unstable angina (63.3%), stable angina (20.0%), and restenosis at the 6-month follow-up after intervention. A total of 21 stents were implanted at 40 lesions. No major cardiovascular complication nor puncture site complication was reported at the 1 month follow-up. **Conclusion :** Early discharge at least 5 hours after intervention is safe for those with optimal angiographic results and no clinical problems. **(Korean Circulation J 2001;31(10):1013-1018)**

KEY WORDS : Radial artery ; Angioplasty, transluminal, percutaneous coronary ; Safety.

서 론

1-3)

가

가

가

가

가

: 2001 4 13

: 2001 8 25

: , 158 - 710

911 - 1

4)

가

5)

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5F Judkins
Amplatz

7F

대상 및 방법

ACT가 250

가

대상환자의 선택

1999 12 2001 1

ST

. 30

95

30

퇴원 전 조치 및 외래 추적 관찰

5

가

30%

가 TIMI grade 3/3

가

4

CK, CK -

ST

(side branch)

MB, Troponin T

(dissection)가

5

ST

가

2

1

시술 전 약물치료

3

aspirin 100 mg

ticlopidine 500 mg

clopido -

통계분석

grel 75 mg

SPSS 7.5

±

결 과

요골동맥의 천자 및 유도 동맥초의 삽관

Allen 가

대상환자의 임상적 특징

1999 12 2001 1

21 gauge

95

가

, 0.018 , 45 cm

30

5F

60 ± 10

(63.3%),

nitroglycerine 200 µg, verapamil 2.5

(20.0%),

mg heparin 5,000 unit

(13.3%),

6

ST

(3.3%)

(Ta -

ble 1).

20 aspirin 100 mg ticlopidine 500 mg clopidogrel 75 mg , 10

type A 12 , type B1 16 , type B2 5 , type C 7 , 13 , 10 , 7 (Table 2).

Table 1 , Table 2, 3 .

퇴원 전 임상적 관찰

30 21 ± 7

5

2 CK, CK - MB, Troponin T

Table 1. Baseline characteristics of 30 patients

	Number (%)
Male gender	23 (76.7)
Age (years)	$60 \pm 10^*$
Indication	
Stable angina	6 (20.0)
Unstable angina	19 (63.3)
Restenosis	4 (13.3)
NSTEMI	1 (3.3)
Previous MI	3 (10.0)
Previous PCI	6 (20.0)
Hypertension	14 (46.7)
Diabetes mellitus	9 (30.0)
Hypercholesterolemia	8 (26.7)
Smoking history	17 (56.7)
Family history	2 (6.7)
LVEF (%)	$64 \pm 6^{*\dagger}$

NSTEMI : non ST-segment elevation myocardial infarction, MI : myocardial infarction, PCI : percutaneous coronary intervention, LVEF : left ventricular ejection fraction, * : mean \pm standard deviation, \dagger : n=21

2주 후 추적 관찰

2

Table 2. Angiographic and procedural data

	Number (%)
Dilated vessel (n = 40)	
LAD	19 (47.5)
LCX	12 (30.0)
RCA	9 (22.5)
Stented vessel (n = 21)	
LAD	9 (42.9)
LCX	6 (28.6)
RCA	6 (28.6)
Lesion Morphology (n = 40)	
Type A	12 (30.0)
Type B1	16 (40.0)
Type B2	5 (12.5)
Type C	7 (17.5)
Angiographic diagnosis (n = 30)	
1-vessel disease	13 (43.3)
2-vessel disease	10 (33.3)
3-vessel disease	7 (23.3)
Used guiding catheters	
Left coronary artery	
7F Q curve 3.5, 4	10
7F Judkins left 3.5, 4	9
7F Amplatz left 1	2
6F Judkins left 3.5	1
Right coronary artery	
7F Judkins right 4	7
7F Amplatz right 1	1
6F Judkins right 4	1
Used stent type	
Mac	14
Nir	3
Multi-Link	1
S 670	1
Bx	1
Radius	1
Punctured site	
Right radial artery	28
Left radial artery*	2

LAD : left anterior descending artery, LCX : left circumflex artery, RCA : right coronary artery, * : in case of right radial artery puncture failure

Table 3. Angiographic results in transradial intervention (n=40)

	Pre-PCI	Post-PCI	p
%DS	78.5 ± 15.4	4.8 ± 6.2	<0.001
MLD (mm)	0.7 ± 0.4	2.7 ± 0.6	<0.001

DS : diameter stenosis, MLD : minimal luminal diameter, PCI : percutaneous coronary intervention

1개월 후 추적관찰

1

고 찰

30

0%, 1

0%

가

관상동맥 중재술후 입원 관찰이 필요한 이유

2 4

6)

(ab -

rupt occlusion)

2 NHLBI PTCA registry

6.8% ,⁷⁾ 1992 Myler⁸⁾

4.9%

1%⁹⁻¹²⁾

외래에서의 관상동맥 중재술은 안전한가?

5

외래에서 시행되는 관상동맥 중재술 환자의 선별 기준

24

30%

가 TIMI grade 3/3

방 법 :

ST (side branch)
(dissection)가

1999 12 2001 1

ST 가

25

24

5

, 2 ,

1

(latent pro -

결 과 :

ximal and distal tear)

30

60 ± 10

(63.

가

3%),

(20.0%),

¹⁴⁾

(13.3%)

21 ± 7

40

가

21

1

가

3

결 론 :

(rule out)

5

(critical stenosis)

가

ticlopidine

clopidogrel

7

가

ADP

가

중심 단어 :

;

;

REFERENCES

- 1) Lee SG, Cheong SS, Shin JK, Cheong JP, Lee IS, Han DH, Kim JW, Park JH. *Trans-radial coronary stenting in two hospital: comparison with trans-femoral approach. Korean Circulation J* 2000;30:827-32.
- 2) Mann T, Cubeddu G, Bowen J, Schneider JE, Arrowood M, Newman WN, Zellinger MJ, Rose GC. *Stenting in acute coronary syndrome: a comparison of radial versus femoral access sites. J Am Coll Cardiol* 1998;32:572-6.
- 3) Kiemeneij F, Laarman GJ, Odekerken D, Slagboom T, van der Wieken R. *A randomized comparison of percutaneous transluminal coronary angioplasty by the radial, brachial and femoral approaches: The ACCESS study. J Am Coll Cardiol* 1997;29:1269-75.
- 4) Kiemeneij F, Laarman GJ, Slagboom T, van der Wieken LR. *Outpatient coronary stent implantation. J Am Coll Cardiol* 1997;29:323-7.
- 5) Kim BK, Kim MH, Cha KS, Kim HJ, Moon HG, Park TH, Kim SH, Kim YD, Kim JS. *Outpatient coronary in-*

요 약

배경 및 목적 :

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- terventions: Initial experience with transradial approach (Abstr). *Korean Circulation J* 2000;30(Suppl):II-204.
- 6) Wolfe MW, Roubin GS, Schweiger M, Isner JM, Ferguson JJ, Cannon AD, Cleman M, Cabin H, Leya F, Bonan R. Length of hospital stay and complications after percutaneous transluminal coronary angioplasty. Clinical and procedural predictors. Heparin Registry Investigators. *Circulation* 1995;92:311-9.
 - 7) Detre KM, Holmes DR Jr, Holubkov R, Cowley MJ, Bourassa MG, Faxon DP, Dorros GR, Bentivoglio LG, Kent KM, Myler RK. Incidence and consequences of periprocedural occlusion. The 1985-1986 National Heart, Lung and Blood Institute's Percutaneous Transluminal Coronary Angioplasty Registry. *Circulation* 1990;82:739-50.
 - 8) Myler RK, Shaw RE, Stertzer SH, Hecht HS, Ryan C, Rosenblum J, Cumberland DC, Murphy MC, Hansell HN, Hidalgo B. Lesion morphology and coronary angioplasty: current experience and analysis. *J Am Coll Cardiol* 1992;19:1641-52.
 - 9) Kienmeneij F, Laarman GJ. Transradial artery Palmaz-Schatz coronary stent implantation: results of a single center feasibility study. *Am Heart J* 1995;130:14-21.
 - 10) Karrison GJ, Morice MC, Benveniste E, Bunouf P, Aubry P, Cattani S, Chevalier B, Commeau P, Cribier A, Eiferman C, Grollier G, Guerin Y, Henry M, Lefevre T, Livarek B, Louvard Y, Marco J, Makowski S, Monassier JP, Pernes JM, Rioux P, Spaulding C, Zemour G. Intracoronary stent implantation without ultrasound guidance and with replacement of conventional anticoagulation by antiplatelet therapy. 30-day clinical outcome of the French Multicenter Registry. *Circulation* 1996;94:1519-27.
 - 11) Nakamura S, Hall P, Gaglione A, Tiecco F, Di Maggio M, Maiello L, Martini G, Colombo. High pressure assisted coronary stent implantation accomplished without intravascular ultrasound guidance and subsequent anticoagulation. *J Am Coll Cardiol* 1997;29:21-7.
 - 12) Schühlen H, Hadamitzky M, Walter H, Ulm K, Schomig A. Major benefit from antiplatelet therapy for patients at high risk for adverse cardiac events after coronary Palmaz-Schatz stent placement: analysis of a prospective risk stratification protocol in the Intracoronary Stenting and Antithrombotic Regimen (ISAR) trial. *Circulation* 1997;95:2015-21.
 - 13) Kim MH, Cha KS, Kim JS. Transradial intervention in coronary artery disease: Comparison with transfemoral intervention. *Korean Circulation J* 1998;28:1941-52.
 - 14) Kienmeneij F, Laarman GJ, Slagboom T. Percutaneous transradial coronary Palmaz-Schatz stent implantation, guided by intravascular ultrasound. *Cathet Cardiovasc Diagn* 1995;34:133-6.