

특발성 확장성 심근병증에서 좌심실 수축기 기능 향상에 영향을 주는 인자에 대한 연구

김진구 · 박정의 · 남궁준 · 이상철 · 권현철 · 박승우
김준수 · 전은석 · 김덕경 · 이상훈 · 홍경표 · 서정돈

Factors Influencing the Improvement of Left Ventricular Systolic Function in Patients with Idiopathic Dilated Cardiomyopathy

Jin Ku Kim, MD, Jeong Euy Park, MD, June Namgung, MD, Sang-Chol Lee, MD,
Hyeon-Cheol Gwon, MD, Seung Woo Park, MD, June Soo Kim, MD, Eun-Seok Jeon, MD,
Duk-Kyung Kim, MD, Sang Hoon Lee, MD, Kyung Pyo Hong, MD and Jung Don Seo, MD

Department of Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine,
Cardiac & Vascular Center, Seoul, Korea

ABSTRACT

Background and Objectives : Idiopathic dilated cardiomyopathy (IDC) is a disease entity with no known specific curative measures. However, significant improvement in the left ventricular (LV) systolic function, during the management course for IDC, is frequently observed. In this study we tried to ascertain associated factors for the improvement of the LV function in patients with IDC. **Subjects and Methods** : Thirty-three patients, newly diagnosed as IDC between Jan. 1999 and Jan. 2001, on whom a 6-month follow-up echocar-diography was performed, were included in the study. Improvement in the LV systolic function was defined as an increase in the LV ejection fraction greater than 10% from the baseline. The subjects were divided into two groups; the improved group (IG) and the unimproved group (UG). The clinical characteristics and management methods were evaluated, and compared between the two groups. **Results** : Seventeen patients (M/F : 15/2) were included in the IG, and 16 (M/F : 7/9) were included in the UG. There were no significant differences in the baseline LV systolic function (IG : $23.4 \pm 1.5\%$ vs. UG : $28.9 \pm 2.3\%$), age, NYHA functional class or resting heart rate on admission between the two groups. b-blocker therapy ($p = 0.002$), the absence of diabetes mellitus ($p = 0.046$) and male sex ($p = 0.007$), were all significantly associated with an improvement in the LV systolic function from the univariate analyses. With the multivariate analyses, only b-blocker therapy was significantly associated with an improvement in the LV systolic function. The 6-month event-free survival rate was significantly better in the IG compared with UG ($94 \pm 5\%$ vs. $63 \pm 13\%$, $p = 0.031$). **Conclusion** : b-blocker therapy exerts a considerable effects on the improvement in the LV systolic function of patients with IDC. (**Korean Circulation J 2002;32(12):1064-1071**)

KEY WORDS : Cardiomyopathy, congestive ; Adrenergic beta-antagonists ; Therapeutics ; Heart failure, congestive.

: 2002 7 10
: 2002 10 18
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: , 135 - 710 50
: (02) 3410 - 3416 · : (02) 3410 - 3417 · E - mail : jepark@smc.samsung.co.kr

서 론

가 가 , 0.04% 가 , 8 oz 6

가 가 , 3)4) 가 , 3)5)6) , 1980 3 6 10% (Improved group ; IG), (Unimproved group ; UG)

3)7)8) (Modified Simpson's method) 2

대상 및 방법

환자군 1999 1 2001 1 2001 7 6 가

58 mm (ejection fraction) 40% 가 Thallium - 201 200 mmHg , 5

자료 분석 방법

(mean SEM) SPSS for windows(ver. 9.0) student t - test (chi - square test) p<0.05 가

event - free survival rate Kaplan - Meier test log - rank test

결 과

임상적 특징 33

17 (15), 16 (7) (deceleration time) 가 (Table 2).
 가
 (p=0.007), 가
 (p=0.046),
 가
 New York Heart Association(NYHA) functional class,
 가
 19.7 ± 1.0 , 17.4 ±
 1.5 (Table 1).

진단시 심초음파 지표

, 23.4 ± 1.5%,
 28.9 ± 2.3% 가

Table 1. Baseline characteristics of patients with idiopathic dilated cardiomyopathy in improved and unimproved group

	Improved group (n=17)	Unimproved group (n=16)	p
Sex (n, M/F)	15/2	7/9	0.007
Age (years)	51.0 ± 2.8	59.9 ± 4.0	NS
Hypertension (n)	5	8	NS
DM (n)	1	6	0.046
Hyperlipidemia (n)	1	3	NS
Smoking (n)	6	4	NS
Azotemia (n)	1	4	NS
PAOD (n)	2	0	NS
HR on admission (bpm)	95.6 ± 7.5	85.9 ± 4.1	NS
NYHA FC on admission (n)			NS
I	0	0	
II	6	4	
III	7	7	
IV	4	5	
Duration to therapy (month)	12.1 ± 3.1	13.6 ± 4.4	NS
Follow-up duration (month)	19.7 ± 1.0	17.4 ± 1.5	NS

All data including continuous variables are expressed as mean ± SEM. DM : diabetes mellitus, PAOD : peripheral arterial occlusive disease, HR : heart rate, NYHA FC : New York Heart Association functional class

치료 약물

(p=0.002)(Table 3).
 Carvedilol
 가
 21.6 ± 2.3 mg(; 6.25 ± 37.5 mg/day),
 20.8 ± 4.2 mg(; 12.5 ± 37.5 mg/day)

Table 2. Comparison of echocardiographic parameters between improved and unimproved group on admission and follow-up over 6-month

	Improved group (n=17)	Unimproved group (n=16)	p
EF-pre (%)	23.4 ± 1.5	28.9 ± 2.3	NS
EF-post (%)	42.3 ± 2.6	27.8 ± 6.8	<0.001
LVIDd-pre (mm)	70.8 ± 1.4	66.4 ± 1.5	0.043
LVIDd-post (mm)	63.2 ± 1.6	67.0 ± 1.2	NS
LVIDs-pre (mm)	61.4 ± 1.7	55.8 ± 1.9	0.036
LVIDs-post (mm)	47.9 ± 2.1	55.4 ± 1.6	0.009
DT-pre	187.0 ± 24.2	240.0 ± 20.4	NS
DT-post	233.1 ± 17.0	267.8 ± 21.1	NS
LA-pre (mm)	50.1 ± 2.5	43.0 ± 2.0	0.034
LA-post (mm)	45.9 ± 2.0	41.1 ± 1.6	NS

All data expressed as mean ± SEM. "pre" implies data on admission and "post" on follow-up over 6-month. EF : ejection fraction, LVIDd : left ventricular end-diastolic dimension, LVIDs : left ventricular end-systolic dimension, LA : left atrium, DT : deceleration time

Table 3. Comparison of used drugs between improved and unimproved group

	Improved group (n=17)	Unimproved group (n=16)	p
ACEI	16	14	NS
-blocker	15	6	0.002
ACEI + -blocker	14	6	0.008
Digoxin	7	8	NS
Diuretics	17	16	NS
Spironolactone	6	5	NS

ACEI : angiotensin converting enzyme inhibitor

가 2 Metoprolol
 50 mg 100 mg
 NYHA functional class IV 1
 (peripheral arterial occlusive disease) 1
 NYHA functional class IV
 가 5 , 가 3 ,
 가 1
 가 1

임상 사건

1 가
 4 6 가
 1 가
 6 event-free survival rate
 94 ± 5%, 63 ± 13%
 (Fig. 1)
 p = 0.031).

주적 관찰시 변화

6

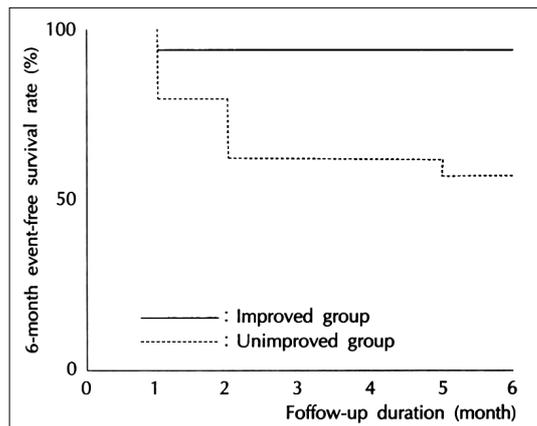


Fig. 1. Six-month event-free survival rate between improved group and unimproved group showed significant differences on Kaplan-Meier with log-rank test. Clinical events were defined as all cause mortality and hospitalization by aggravation of heart failure.

42.3 ± 2.6% (p < 0.001),
 27.8 ± 6.8% 가,
 9.6 ± 1.5

(Table 2)(Fig. 2). NYHA functional class
 class III, IV 가
 65% 0% , 75%
 44%
 (Fig. 3)(p < 0.001).

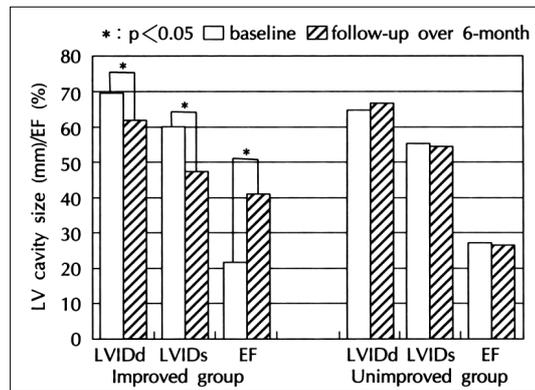


Fig. 2. In improved group, changes of echocardiographic parameters during follow-up showed significant improvement, but in unimproved group, there was no definite change.

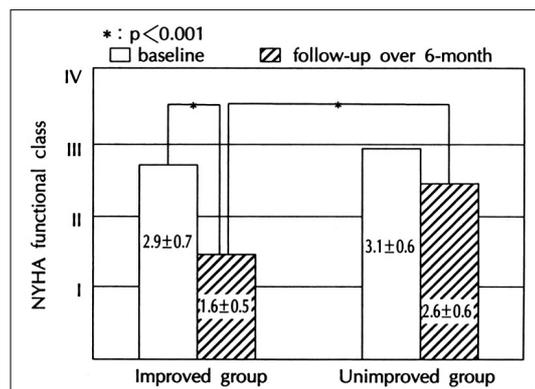


Fig. 3. NYHA functional class was improved during follow-up in both groups. However, there was more significant improvement in improved group. NYHA : New York Heart association.

Table 4. Multivariate logistic regression analysis

	p	OR	95% Confidence interval
Sex	0.218	8.919	0.273 - 291.589
DM	0.271	53.352	0.045 - 6339.907
NYHA FC	0.170	10.4.5	0.366 - 295.745
HR	0.389	0.953	0.853 - 1.063
EF	0.662	0.921	0.638 - 1.331
LVIDd	0.188	2.187	0.683 - 7.004
LVIDs	0.184	0.463	0.149 - 1.44
-blocker	0.026	0.014	0.001 - 0.547

DM : diabetes mellitus, NYHA : New York Heart association functional classification, HR : heart rate, EF : ejection fraction, LVIDd : left ventricular end-diastolic dimension, LVIDs : left ventricular end-systolic dimension

좌심실 수축기 구혈을 향상에 영향을 미치는 인자

(univariate analysis)

(p=0.007), (p=0.046),
(p=0.002) (p=
0.043), (p=0.036)

NYHA functional class,

(p=
0.026 ; OR = 0.014 ; 95% CI : 0.001~0.547)가
가 (Table 4).

고 찰

가 ,
1-4) 1990

가 , 7)8)

가 가
8-14)

가 , 가
8)15-17)
가

가 , (p = 0.026, OR = 0.014)가 가

방 법 :
 1999 1 2001 1
 2001 7 6
 가 , 58 mm ,
 40% ,
 가 .

6
 (Modified Simpson's method) , 10%
 (Improved group) ,
 (Unimproved group)

결 과 :
 33 가 , 17
 (15) , 16 (7) ,
 가 (p = 0.007),
 가 (p = 0.046),
 가 .
 23.4 ±
 1.5% , 28.9 ± 2.3% 가
 ,
 (p = 0.002), 가
 6 Event - free survival rate 94 ±
 5% 63 ± 13% (p =
 0.031). 6 ,
 42.3 ± 2.6%
 가 (p < 0.001),
 . NYHA functional class

결 론 :

중심 단어 : ; - ; ; .

2001

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