

## 고지혈증이 없는 안정형 협심증 환자에서 염증의 역할

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## Role of Inflammation in Stable Angina Patients without Hypercholesterolemia

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## ABSTRACT

**Background and Objectives** : Hypercholesterolemia is a major risk factor for coronary artery disease. However, other risk factors play a more important role in the pathogenesis of atherosclerosis in patients with a low cholesterol level. We performed this study to evaluate the relative role of inflammation in stable angina patients without hypercholesterolemia. **Materials and Method** : Sixty seven stable angina patients without peripheral vascular disease were divided into two groups according to their LDL cholesterol level, group 1 with LDL cholesterol <130 mg/dl and group 2 with LDL cholesterol ≥ 130 mg/dl. Patients with conditions that might change C-reactive protein (CRP) level, previous PTCA or CABG, history of acute coronary syndrome, on lipid lowering treatment and whose troponin T level was above the normal were excluded. Angiographic severity was evaluated by the Gensini and Jenkins scores. **Results** : There were no differences in age, gender, BMI, angiographic severity and the incidence of major risk factors with the exception of hypertension. The CRP (log CRP) was significantly higher in group 1 (0.65 mg/dl vs. 0.28 mg/dl,  $p = 0.002$ ). **Conclusion** : In stable angina patients without hypercholesterolemia, inflammation plays a more important role in the pathogenesis of coronary atherosclerosis than in patients with high cholesterol level. (**Korean Circulation J 2001;31(7): 620-624**)

**KEY WORDS** : Inflammation · Cholesterol · Coronary artery disease.

## 서 론

<sup>1)</sup>  
C - reactive protein( CRP)

<sup>2-4)</sup> CRP

가

: 2001 3 21

: 2001 5 14

: , 120 - 752

134

CRP 가

<sup>5-7)</sup>

CRP

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가

가 . Gensini Jenkins 가

가 가

가 가

가 8)

가

CRP

가

LDL - cholesterol 130 mg/dl

2

가

±

CRP

CRP

(geometric mean, geometric standard deviation)

1999 1 2000 5

t

gen

p 0.05

CRP fibrino - Pearson

(535 )

가

결 과

61 가 67%

가 22.4%, 29.9%,

41.8% (LDL cholesterol >130 mg/dl)

41.8% CRP 0.46 mg/dl (geometric mean, : 0.1 15.6 mg/dl) fibrinogen

383.7 mg/dl CRP가

가( 0.8 mg/dl) 16

(24%) 14 LDL

가 . Gensini Jenkins

35.5, 6.4 (Table 1). CRP

fibrinogen

가 (r =

0.612, p<0.001, Fig. 1). LDL

2 (1 : LDL

<130 mg/dl, 2 130 mg/dl)

Gensini<sup>9)</sup> Jenkins<sup>10)</sup>

**Table 1.** Baseline characteristics of the patients

Age (years)	61 ± 8
Male/Female	45/22 (67/33%)
Risk factors	
DM	15 (22.4%)
Smoking	20 (29.9%)
Hypertension	28 (41.8%)
Hypercholesterolemia*	28 (41.8%)
CRP (mg/dl)	0.46 ± 1.07 <sup>†</sup> (range : 0.1 - 15.6 mg/dl)
Fibrinogen (mg/dl)	383.7 ± 101.6
Gensini score	35.5 ± 26.2
Jenkins score	6.4 ± 3.6

\* : LDL cholesterol 130 mg/dl, † : geometric value

**Table 2.** Comparisons of clinical parameters

	Group 1 (n = 39)	Group 2 (n = 28)	p
Age (years)	62 ± 8	59 ± 7	NS
Male (%)	69.2	64.3	NS
BMI (kg/m <sup>2</sup> )	25.3 ± 3.0	25.7 ± 2.3	NS
Risk factors (%)			
DM	25.6	19.9	NS
Smoking	23.1	39.3	NS
Hypertension	28.2	60.7	0.008

Group 1 : LDL cholesterol <130 mg/dl

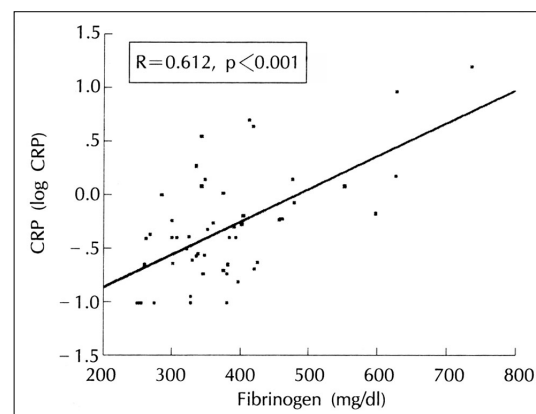
Group 2 : 130 mg/dl

NS : not significant      BMI : body mass index

**Table 3.** Comparisons of angiographic severity and inflammatory markers

	Group 1	Group 2	p
Gensini score	35.8 ± 26.5	35.0 ± 26.2	NS
Jenkins score	6.5 ± 3.7	6.4 ± 3.4	NS
CRP (mg/dl)*	0.65 ± 1.91	0.28 ± 0.09	0.002
Fibrinogen (mg/dl)	392.8 ± 119.7	369.6 ± 73.4	NS

\* : geometric value, other abbreviations are the same as in Table 2



**Fig. 1.** Correlation between CRP and fibrinogen.

CRP, fibrinogen

가

가

2 60.

7% 1 28.2% (p=0.008, Table 2).

가

Gensini Jenkins

가 (Table 3). CRP 1 0.65 mg/dl 2

0.28 mg/dl (p=0.002)

fibrinogen 가 (Table 3).

고찰

CRP

<sup>11)12)</sup> Sharma <sup>13)</sup> 가

가 CRP

가  
가  
. Lee 8)  
200 mg/dl

가  
가

가

CRP

가 (60.7 vs. 가

28.2%,  $p=0.008$ )

가

5)

CRP 10 mg/dl

CRP 15.6 mg/dl

CRP

가

CRP

high sensitive - CRP가

가 0.1 mg/dl

CRP

가

( $p=0.003$ ).

CRP

CRP

535

67

가

가

5)7)

statin

CRP가

6) CRP

가

CRP

CRP

7)14)15)

CRP

요 약

연구목적 :

CRP

가

CRP

fibrinogen

가

fibrinogen

가

CRP

Fibrino -

대상 및 방법 :

1999 2000 5

가

11)14)16)

가

가

CRP

가

CRP

67

LDL

130 mg/dl

2

결 과 :

LDL 2  
(1 : LDL <130 mg/dl, 2  
130 mg/dl)  
가 . 가  
2 60.7% 1 28.2%  
(p=0.008). Gensini Jenkins  
가 . CRP 1 0.65 mg/  
dl 2 0.28 mg/dl (p=  
0.002) fibrinogen 가 .

결 론 :

중심 단어 :

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