

## 혈관 조영술을 이용한 관동맥, 말초혈관, 경동맥의 동맥경화성 협착병변의 빈도

최동훈 · 편옥범 · 윤영섭 · 장양수 · 심원흠

### Frequency of Combined Atherosclerotic Disease of the Coronary, Periphery, and Carotid Arteries Found by Angiography

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#### ABSTRACT

**Background :** The real incidence of atherosclerotic lesions in carotid and peripheral arteries in coronary artery disease patients is not well known in Korea. The aim of this study was to prospectively evaluate the prevalence of atherosclerotic involvement of the coronary, carotid, and peripheral arteries in each arterial disease patients. This study was also designed to evaluate the risk factors, the clinical characteristics of associated carotid artery stenosis in patients with coronary artery disease, and associated peripheral vascular disease in patients with coronary artery disease. **Methods :** Between June 1996 and March 1998, 475 patients (369 males, 106 females, mean age  $60 \pm 10$  years) were studied. Three hundred and seventy-three patients who presented with ischemic symptoms were enrolled in the coronary artery disease group, 81 patients were enrolled in the peripheral vascular disease group due to presenting claudications, and 21 patients were enrolled in the carotid stenosis group due to presenting cerebrovascular symptoms. Coronary angiography was done by the routine method. Carotid angiography was performed at the aortic arch by the digital subtraction angiography method. Peripheral vascular angiography was taken from the suprarenal abdominal aorta to both femoral arteries. **Results :** 1) Risk factors for coronary stenosis, peripheral vascular disease, and carotid stenosis : The risk factors were not different between coronary stenosis, peripheral vascular disease, and carotid stenosis groups, but smoking was more frequent among patients with peripheral vascular disease than in patients with coronary stenosis ( $p$ -value = 0.001). 2) Coronary artery stenosis and carotid artery stenosis : The mean age of coronary artery patients with carotid stenosis was significantly older ( $p$ -value = 0.006) than for patients without carotid stenosis. The prevalence of peripheral vascular disease was more common in patients with carotid stenosis than in patients without carotid stenosis. 3) Coronary artery stenosis and peripheral vascular disease : Carotid stenosis was more common in patients with peripheral vascular disease than in patients without peripheral vascular disease in the coronary stenosis group. 4) Prevalence of coronary, carotid, and peripheral artery disease : In patients with coronary stenosis, the prevalence of carotid stenosis was 13.9% and that of peripheral vascular disease was 29.2%. In patients with peripheral artery stenosis, the prevalence of coronary stenosis was 45.7% and that of carotid artery disease was 33.3%. In patients with carotid stenosis, the prevalence of coronary stenosis was 81.0% and that of peripheral

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vascular disease was 52.4%. **Conclusion** : Carotid artery disease and peripheral vascular disease developed concurrently with coronary artery disease in a significant proportion of patients. Therefore, routine angiography of peripheral and carotid arteries in patients with coronary artery disease is considered, especially in old age. (Korean Circulation J 1999;29(2):883-890)

**KEY WORDS** : Coronary artery disease · Peripheral vascular disease · Carotid artery disease.

서론

1)2) 50% 가 373 , 50% 가 81 , 50% 21 6% 40% 가 3-6) 20% 68% 가 7-9)

방 법

1995 Seldinger 6 Fre - nch sheath . Sheath 3000 U 50% 5 French pigtail catheter 60

재료 및 방법

연구대상 1996 6 1998 3 QCA 50% 가 3 가

통계분석 windows SAS 204 ± 51 mg/dl, 39 ± 11  
(ver. 6.12) mg/dl 27%,  
t - test 49%, 83%  
chi - square test (p - value =  
ANOVA 0.001)  
21  
± p - value가 0. 190 ± 37 mg/dl, 190 ± 110  
05 mg/dl, 40 ± 8 mg/dl  
19%, 57%,  
결 과 67% (Table 1).

관동맥, 말초혈관, 경동맥 협착의 위험인자 관동맥, 말초혈관, 경동맥 협착의 빈도  
475 196  
± 42 mg/dl, 174 ± 110 mg/dl, 373 13.  
39 ± 15 mg/dl 9%(52/373), 29.2%(109/  
27%, 51%, 373) 81 37 (45.7%),  
64% 195 ± 40 mg/dl, 27 (33.3%).  
174 ± 113 mg/dl, 39  
± 16 mg/dl 27%, 21  
52%, 59% 17 81.  
81 0%

**Table 1.** Clinical and laboratory profiles

	Total patients (N=457)	Patients with coronary artery disease(N=373)	Patients with peripheral artery disease(N=81)	Patients with carotid artery disease(N=21)
Age (years)	60 ± 10	60 ± 10	61 ± 10	57 ± 14
Tot. Cholesterol (mg/dl)	196 ± 42	195 ± 40	204 ± 51	190 ± 37
Triglyceride (mg/dl)	174 ± 110	174 ± 113	169 ± 93	190 ± 110
HDL-cholesterol (mg/dl)	39 ± 15	39 ± 16	39 ± 11	40 ± 8
Diabetes mellitus (%)	27	27	27	19
Hypertension (%)	51	52	49	57
Smoking (%)*	64	59	83	67

P-value=0.001 (between patients with coronary artery disease group and patients with peripheral artery disease)

**Table 2.** Extent of vascular involvement according to clinical presentation

Diseased artery	IHD (N=373)	PVD (N=81)	Neurologic disease (N=21)
Coronary a.		37/81 (45.7%)	17/21 (81.0%)
Carotid a.	52/373 (13.9%)	27/81 (33.3%)	
Peripheral a.	109/373 (29.2%)		11/21 (52.4%)

IHD : Ischemic heart disease

PVD : Peripheral vascular disease

**Table 3.** Clinical and laboratory profiles in coronary artery disease patients associated with carotid artery disease

	Patients with significant carotid arterial stenosis N=52	Patients with insignificant carotid arterial stenosis N=321	P-value
Age (years)*	63 ± 7	59 ± 10	0.0056
Sex (M/F)	35/17 (2.1 : 1)	244/77 (3.2 : 1)	NS
Tot. Cholesterol (mg/dl)	196 ± 43	194 ± 39	NS
Triglyceride (mg/dl)	200 ± 123	170 ± 111	NS
HDL-cholesterol (mg/dl)	38 ± 13	39 ± 16	NS
Diabetes mellitus (%)	35	26	NS
Hypertension (%)	50	52	NS
Smoking (%)	58	60	NS
Peripheral vascular disease	21 (40.4%)	88 (27.4%)	0.056

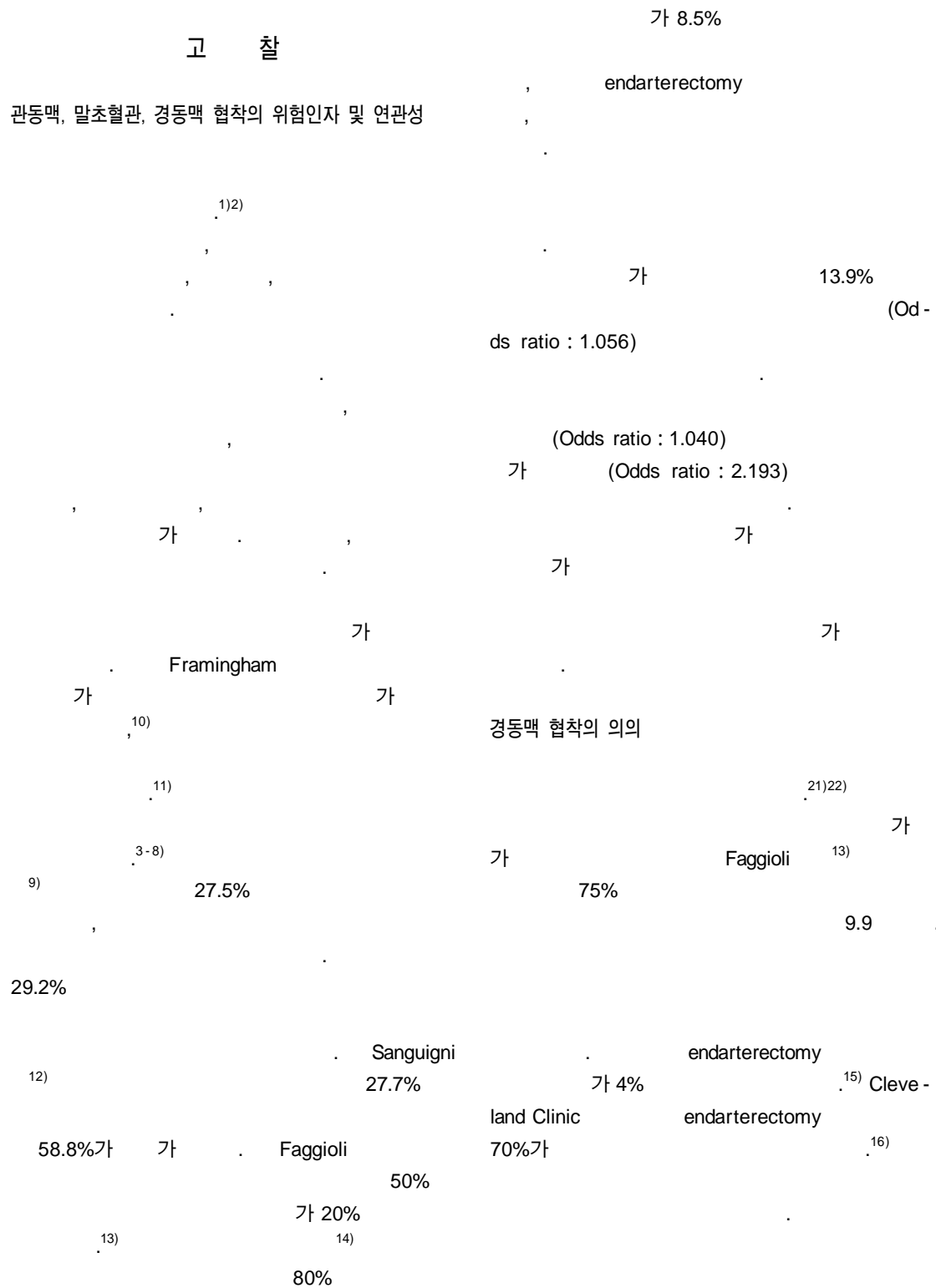
Age : Odds ratio=1.056

**Table 4.** Clinical and laboratory profiles in coronary artery disease patients associated with peripheral vascular disease

	Patients with significant peripheral artery disease N=109	Patients with insignificant peripheral artery disease N=264	p-value
Age (years)*	62 ± 9	59 ± 10	0.0051
Sex (M/F)	83/26 (3.2 : 1)	196/68 (2.9 : 1)	NS
Tot. Cholesterol (mg/dl)	193 ± 38	196 ± 40	NS
Triglyceride (mg/dl)	183 ± 124	170 ± 108	NS
HDL-cholesterol (mg/dl)	37 ± 10	40 ± 18	NS
Diabetes mellitus (%)	28	27	NS
Hypertension (%)	54	50	NS
Smoking (%)	64	57	NS
Carotid artery disease**	21 (19.3%)	31 (11.7%)	0.056

Age : Odds ratio=1.040

21 11 52.4% 관동맥 협착과 말초혈관 협착  
(Table 2).  
52 27 (52%)  
가 25 가 .  
(62 : 59 , p - value = 0.0051,  
Odds ratio = 1.040).  
관동맥 협착과 경동맥 협착  
373 가 19%  
(12%)  
가 63 , (p - value = 0.056, Table 4).  
59 (p - value = (1 : 1 - vd or 2 - vd, 2 : 3 - vd  
0.0056, Odds ratio = 1.056). or left main)  
가  
가 40% (p - value = 0.  
27% 0035, Odds ratio = 2.193).  
056, Table 3).





± 42 mg/dl, 174 ± 110 mg/dl,  
39 ± 15 mg/dl  
27%, 51%,  
64%

중심 단어 :

감사문

(p - value

= 0.001).

2)

373

(p -

value = 0.0056, Odds ratio = 1.056)

(p - value = 0.056).

3)

(p - value = 0.0051, Odds

ratio = 1.040),

가

(Odds ratio

= 2.193, p - value = 0.0035).

가 19.3%

11.7%

(p - value = 0.056).

4)

13.9%,

29.2%

45.7%

33.3%

81.0%

, 52.4%

결 론 :

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