

Progressive coronary artery disease

John R. Kramer, M.D.
Yasuo Matsuda, M.D.
John C. Mulligan, D.O.
Martin Aronow, D.O.
William L. Proudfit, M.D.

Cleveland, Ohio

Two hundred sixty-two patients with at least one coronary artery obstruction equal to or greater than 50% lumen diameter reduction on the initial study and who underwent repeat cardiac catheterization 2 to 182 months later were studied for progressive arterial changes. Of the 262 patients, 116 men (49%) and 12 women (50%) met the criteria for progression. Risk factors obtained at the time of the initial catheterization in patients who met the criteria for progression were compared to risk factors in those patients who did not. No significant difference could be found between the groups in relation to family history, blood pressure, diabetes, smoking habits, weight, cholesterol, triglycerides, initial electrocardiogram, and initial catheterization findings.

The frequency of detecting progressive arterial changes tended to increase as the interval between studies increased. The frequency of multiple-vessel progression increased as the interval between studies increased.

Commonly recognized risk factors do not significantly differentiate those patients who will experience progression from those who will not (*Tables 1-3*).

Table 1. Patient selection

Patients studied			
1. "Pure" coronary artery disease			
2. Two cardiac catheterizations more than one month apart	335		
3. No cardiac surgery			
Patients excluded			
1. LMT on first study	15		
2. Progression to LMT	2		
3. No coronary lesion >49%	36		
4. "Regression"	20	73	
Patients included			
1. ≥50% lumen diameter reduction in at least one coronary artery	262		

LMT = left main trunk.

Table 2. Criteria for progression

Nonprogression	Progression
No change from initial study	Change in same or other artery
	1. 20% or more increase in <i>same</i> vessel
	2. ≤30% increasing to ≥50% in <i>another</i> vessel
	3. ≤70% increasing to ≥90% in <i>any</i> vessel
	4. <100% to 100% in <i>any</i> vessel

Table 3. Relation of risk factors to progression

	Nonprogression		Progression		Total
	No.	%	No.	%	
Total group	134	51	128	49	262
Men	122	51	116	49	238
Women	12	50	12	50	24
Mean age (yr)	50.0	...	47.9	...	49
Mean interval between studies (mo)	29.6	...	43.8	...	36.5
Risk factors					
Positive family history	81	52	76	48	157
Negative family history	41	51	39	49	80
Diastolic BP ≤90 mm Hg	100	52	92	48	192
Diastolic BP >90 mm Hg	34	49	36	51	70
Systolic BP ≤140 mm Hg	81	53	71	47	152
Systolic BP >140 mm Hg	53	48	57	52	110
Not diabetic	106	50	104	50	210
Diabetic	26	54	22	46	48
Nonsmoker	51	50.5	50	49.5	101
Smoker	70	51	68	49	138
Not obese	100	50	101	50	201
Obese	34	56	27	44	61
Cholesterol ≤250 mg/dl	87	53	78	47	165
Cholesterol >250 mg/dl	47	48	50	52	97
Triglycerides ≤135 mg/dl	54	46.5	62	53.5	116
Triglycerides >135 mg/dl	80	55	66	45	146