Short Communication

The prevalence of risk factors for coronary artery disease in patients who had had CABG

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Summary

The conclusion of Ranjith and his co-workers from their study 'Demographic data and the outcome of acute coronary syndrome in the South African Asian Indian population' drew our attention.[1] Young South African Indians frequently have premature atherosclerosis with diffuse and aggressive disease. This should be taken into account for risk intervention. We would like to add to this.

Cardiovasc J South Afr 2005; **16**: 227–228. www.cvjsa.co.za

The association between risk factors and the development of coronary artery disease is well known. These risk factors include a family history of coronary artery disease (CAD), raised total cholesterol, hypertension, diabetes mellitus, obesity (BMI ≥ 30 kg/m^2) and cigarette smoking. With so much publicity in the lay media and the wide exposure to these facts, we hypothesised that younger patients who had had coronary artery bypass graft surgery (CABG), especially patients with a family history of CAD, should have fewer risk factors than an older generation who had CABG.

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Methods

As part of a compulsory undergraduate study, we did a retrospective cross-sectional study to establish the prevalence of risk factors for CAD in patients who had had CABG. The target population was all patients who had had a CABG done by one surgeon (M.J.S.) in the Bloemfontein Medi-Clinic Hospital between December 2000 and November 2003. Patients were divided into different age groups (≤ 49, 50–59, 60–69, and ≥ 70 years) and according to gender.

Risk factors were defined according to existing standard definitions. For the prevalence of risk factors (Table II), smoking in the past or present was used, but for determining risk factors in the different age/gender groups, only smoking at present was used. This was done to give credit to those who did alter their lifestyle. Age, gender and family history were considered to be risk factors that were out of the patient's control. Raised cholesterol, hypertension and diabetes mellitus were also seen as less manageable. However, a patient could be in charge of obesity and cigarette smoking.

The statistical analysis was done by the Department of Biostatics at the University of the Free State. The protocol was approved by the Ethics Committee of the Faculty of Health Sciences at the University of the Free State. A limitation was the small number of patients in the breakdown of the female group.

Results

Records of 501 patients were available (Table I); 380 (76%) were males and 121 (24%) were females. The young patients (≤ 49 years) formed 21% of the group. This was

TABLE I. GENDER AND AGE DISTRIBUTION OF PATIENTS

	≤ 49 years	*50–59 years*	*60–69 years*	*≥ 70 years*	*Total*
Male	85 (22%)	121 (32%)	113 (30%)	61 (16%)	380 (76%)
Female	20 (16%)	33 (27%)	43 (36%)	25 (21%)	121 (24%)
	105	154	156	86	501

TABLE II. PREVALENCE OF RISK FACTORS

	%	*Gender*	n	%
Family history	57	m	203	53
		f	82	67
Cholesterol	55	m	202	53
		f	74	61
Hypertension	60	m	218	57
		f	85	70
Diabetes mellitus	21	m	83	22
		f	24	20
Obesity	35	m	136	36
		f	38	31
Smoke	66	m	285	75
		f	46	38

the group we thought would have had access to health information. Half of all male patients and two-thirds of female patients gave a positive family history of coronary artery disease (Table II).

In the males, a statistically significant higher number of risk factors was seen in the younger patients compared to the older patients. The median number of risk factors in the age group ≤ 49 years was three; in the age group 50 to 59 it was three; in the age group 60 to 69 it was 2.5; and in age group ≥ 70 it was two risk factors ($p = 0.005$) This was not true for the female group.

For single risk factors, the following significant differences were found between patients who had a positive family history and those who had no CAD in the family. Cholesterol was more prominent among males ≤ 49 years with a positive family history (78 vs 47%; $p = 0.04$); obesity was more common in males ≥ 70 years with a positive family history (38 vs 16%; $p = 0.04$); obesity was also more common among females ≥ 70 years with a family history (38 vs 0%; $p = 0.04$), but diabetes mellitus was less common in males 60 to 69 years with a family history (10 vs 29%; $p = 0.02$).

Other differences in risk factors in the various subgroups did not reach statistical significance. When the manageable risk factors (obesity and smoking) were combined, no difference was seen in any of the age/gender groups between patients who had a positive family history and those who did not report CAD in the family.

Discussion

A change in lifestyle, as suggested by the Lifestyle Heart trial, can achieve a regression of CAD.[2] After World War II, studies showed a drop in obesity, diabetes mellitus and CAD due to a healthier diet, but also population groups such as vegetarians and Seventh-Day Adventists have benefited from their change in lifestyle.[3]

The public is bombarded with information and younger patients should benefit from risk-management strategies. Unfortunately there is pessimism that the necessary adaptations needed to promote a fall in the incidence of CAD will take place.[4] We admit that our population group might have been the wrong group to assess the success of health education, as we were unaware of those who did adhere to lifestyle changes and escaped CAD. However the third National Health and Nutrition examination survey found that only two-thirds of patients with hypertension were aware of their condition, half of them were on treatment, and only a quarter of the number of hypertensive patients were actually controlled.[5] In other words, can we really make any progress with risk management?

We have referred to risk factors that can be controlled by patients, but obesity is considered almost a pandemic and smoking is still the leading preventable cause of death. Smoking is in fact increasing among women and teenagers.[6-7] Reviewing the literature referred to, we believe that the public is still careless about lifestyle changes and that this particular population group might, in fact, be representative of an apathetic public.

Conclusions

Younger male patients had more existing risk factors. Patients with a positive family history across all age and gender groups smoked and ate the same as patients who were unaware of CAD in the family. As with the aggressive nature of atherosclerosis in young Indian males, this should also be taken into consideration when addressing risk intervention.

References

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