

## Myocardial Infarction and Religion: Hospital-based Case-control Study in Tirana, Albania

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<b>Aim</b>	To assess the association between religion, Muslim vs Christian, and myocardial infarction in the population of Tirana, capital of Albania.
<b>Method</b>	A hospital-based case-control study included all patients with acute non-fatal myocardial infarction hospitalized in Tirana University Hospital Center between October 1999 and June 2001. There were 146 women with the mean age ( $\pm$ standard deviation) of $62 \pm 9$ years and 331 men aged $59 \pm 10$ years. Control group consisted of 616 hospital-based patients recruited from University Departments of Orthopedics and Ear, Nose, and Throat. The control group included 227 women aged $60 \pm 10$ years, and 389 men aged $60 \pm 9$ years. A structured questionnaire was administered to all participants to collect self-reported data on socio-demographic factors, life-style and behavioral factors, diet, and pre-existing conditions. All participants had their height and weight measured.
<b>Results</b>	Among patients with myocardial infarction, 98 women (67%) and 244 men (74%) identified themselves as Muslims, as compared to 164 women (72%) and 265 men (68%) in the control group. There was no evidence of association between myocardial infarction and religion in women, whereas Muslim men had a higher risk of a first non-fatal myocardial infarction than Christians (age-adjusted odds ratio [OR], 1.32; 95% confidence interval [CI], 0.95-1.82). Upon adjustment for covariates, there was no evidence of a significant association between religion and myocardial infarction neither in men (OR, 1.20; 95% CI, 0.85-1.70), nor in women (OR, 0.97; 95% CI, 0.59-1.60).
<b>Conclusion</b>	The occurrence of myocardial infarction among Muslims and Christians in Tirana was similar, suggesting that cardiovascular morbidity is not affected by the religious affiliation of Albanian adults.

Data on the supposed effects of religious affiliation on cardiovascular diseases are limited. A community-based study conducted in Delhi, India, reported a higher prevalence of coronary heart disease in Christians than in Muslims (1). Furthermore, in Israel, the mortality rate from ischemic heart disease was reported to be especially high among Christian men (2). On the other hand, in a fairly recent study conducted in Cape Town, South Africa, no association between religious affiliation (Muslims vs Christians) and hypertension and heart diseases was reported (3). Also, the impact of Ramadan

on heart failure rate was shown to be negligible (4).

There are no reports about differential cardiovascular disease morbidity and/or mortality related to religion in Albania. No religion differences in diet, alcohol consumption, or smoking patterns have been documented, either. Albania, a European state, is a predominantly Muslim country. According to the last report by European Observatory on Health Care Systems, 70% of the Albanian population are Muslims, 20% are Christian Orthodox, and 10% are Roman Catholic (5).

Most Albanian adults, however, were raised in the atheist climate that prevailed in the communist Albania of Enver Hoxha. Although religion has not been an important identity feature in Albania, with the return of religious freedom many mosques and churches, which were closed in 1967, have now reopened.

Our aim was to assess the association between religion and first acute non-fatal myocardial infarction in a hospital-based case-control study conducted in Tirana, capital of Albania, and to determine the characteristics mediating this possible association while controlling for socio-demographic features and selected recognized risk factors for myocardial infarction.

## Methods

### Patients

The study included all patients with first acute non-fatal myocardial infarction with ST-segment elevation (STEMI) hospitalized at the Cardiology Department of the University Hospital Centre in Tirana from October 1999 to June 2001. During this period, 172 women and 370 men were hospitalized and diagnosed with STEMI, as they had ST elevation, inverted T, or development of Q wave within 8-12 hours. Of them, 26 women and 39 men died within 72 hours of hospitalization. The rest of the patients, 146 women aged  $62 \pm 9$  years and 331 men aged  $59 \pm 10$  years, were asked to complete a questionnaire and had their height and weight measured within 72 hours of hospitalization.

For the control group, 500 men and 300 women visiting Tirana University Hospital Center were approached. Starting with March 1, 2001, the first 300 men and 200 women aged  $> 35$  years who visited the Department of Ear, Nose, and Throat, and the first 200 men and 100 women aged  $> 35$  years who visited the Department of Orthopedics were asked to participate in the study. The patients visiting these two Departments were thought to yield a more heterogeneous group, especially with regard to education and occupation. Out of 800 patients approached, 423 men and 246 women agreed to participate (85% and 82% response rate, respectively) in the study. They were asked to complete the questionnaire and had their height and weight measured. Patients who refused to participate were asked about their age and religion affiliation. Of them, 86% of

men (mean age  $\pm$  standard deviation,  $52 \pm 8$  years) and 79% of women (mean age,  $53 \pm 9$  years) identified themselves as Muslims. After screening for pre-existing heart disease, 34 men and 19 women were excluded from the study because of a positive history of "heart trouble." The final control group included 227 women aged  $60 \pm 10$  years and 389 men aged  $60 \pm 9$  years.

### Data collection

A structured questionnaire was administered to all participants. The questionnaire included data on socio-demographic factors (age, sex, education, profession, and religion), life-style and behavioral factors (smoking, alcohol consumption, and physical activity), dietary habits related to salt and animal fat intake, pre-existing health conditions (hypertension and diabetes), and familial history of heart disease (parents and siblings). Occupation/profession referred to self-reported occupation, including retirees. Assessment of animal fat intake consisted of a composite score derived from 3 questions on a 5-point scale ("What do you do with the visible fat on meat?," "How often do you consume stew/traditional dishes prepared with animal fat?," and "How often do you add lard on your soup/stew/traditional dishes to make it tastier?").

Assessment of physical activity was based on the frequency and duration of self-reported activities, including activities at work. The respondents were classified as having hypertension if they self-reported a history of hypertension. The participants had their height and weight measured in light clothes. Body mass index (BMI) was calculated for each participant as  $\text{weight}/\text{height}^2$ .

### Statistical Analysis

To compare the distribution of socio-demographic characteristics and selected risk factors for STEMI between cases and controls,  $\chi^2$  test for independence was used. Univariate binary logistic regression was applied to assess the association of socio-demographic factors, life-style factors, dietary factors, pre-existing conditions, and familial history of heart disease with myocardial infarction and then with religion. Odds ratio (OR) and 95% confidence intervals (CI) were reported.

To assess the "independent" association of religion with myocardial infarction, multivariable logistic models were performed. All covariates were introduced into logistic models in a back-

ward stepwise fashion with a *P* value to exit  $>0.10$ , separately for men and women. For each statistical test, *P* values  $\geq 0.05$  were considered statistically significant. Statistical Package for Social Sciences (SPSS) for Windows, version 10 (SPSS Inc., Chicago, IL, USA) was used for all statistical analyses.

## Results

Men with STEMI were of similar age as their sex-matched controls (32% aged  $\geq 65$  years vs 37% of controls,  $P=0.155$ ). The opposite was evident for women with STEMI, of whom 62% were aged  $\geq 65$  as opposed to 37% of controls ( $P<0.001$ )

**Table 1.** Socio-demographic characteristics and selected risk factors for myocardial infarction in population of Tirana, Albania\*

Characteristic	No. (%) of participants				P†	
	patients with MI (n=429)		controls (n=616)		men	women
	men (n=331)	women (n=146)	men (n=389)	women (n=227)		
Age (years):						
$\leq 50$	75 (23.0)	10 (7.0)	68 (17.0)	42 (19.0)		
51-64	151 (45.0)	46 (31.0)	178 (46.0)	100 (44.0)		
$\geq 65$	105 (32.0)	90 (62.0)	143 (37.0)	85 (37.0)	0.155	0.001
Education (years):						
0-8	144 (43.0)	102 (70.0)	162 (42.0)	178 (78.0)		
9-12	92 (28.0)	20 (14.0)	148 (38.0)	24 (11.0)		
$>12$	95 (29.0)	24 (16.0)	79 (20.0)	25 (11.0)	0.004	0.166
Occupation/profession:						
agriculture	34 (10.0)	10 (7.0)	47 (12.0)	18 (8.0)		
industry/manual	159 (48.0)	92 (63.0)	235 (60.0)	160 (70.0)		
white collar	138 (42.0)	44 (30.0)	107 (28.0)	49 (22.0)	<0.001	0.176
Religion:						
Muslim	244 (74.0)	98 (67.0)	265 (68.0)	164 (72.0)		
Roman Catholic	29 (9.0)	14 (10.0)	31 (8.0)	14 (6.0)		
Christian Orthodox	58 (17.0)	34 (23.0)	93 (24.0)	49 (22.0)	0.111	0.400
Marital status:						
single	8 (2.0)	9 (6.0)	16 (4.0)	7 (3.0)		
married	307 (93.0)	121 (83.0)	351 (90.0)	199 (88.0)		
widowed/divorced	16 (5.0)	16 (11.0)	22 (6.0)	21 (9.0)	0.387	0.292
Body mass index:						
$<25$	175 (53.0)	52 (36.0)	230 (59.0)	89 (39.0)		
25-29.9	112 (34.0)	66 (45.0)	116 (30.0)	106 (47.0)		
$\geq 30$	44 (13.0)	28 (19.0)	43 (11.0)	32 (14.0)	0.235	0.412
Smoking:						
current	181 (55.0)	19 (13.0)	183 (47.0)	34 (15.0)		
past	33 (10.0)	7 (5.0)	46 (12.0)	16 (7.0)		
never	117 (35.0)	120 (82.0)	160 (41.0)	177 (78.0)	0.009	0.557
Alcohol consumption:						
no	51 (15.0)	86 (59.0)	50 (13.0)	129 (57.0)		
occasionally ( $\leq 1$ unit/week)	184 (56.0)	53 (36.0)	183 (47.0)	93 (41.0)		
from 2 units/week to $\leq 2$ units/day	69 (21.0)	7 (5.0)	114 (29.0)	5 (2.0)	0.121	0.299
$>2$ units/day	27 (8.0)	-	42 (11.0)	-		
Physical activity:						
little or none	134 (40.0)	77 (53.0)	149 (38.0)	100 (44.0)		
moderate	122 (37.0)	50 (34.0)	165 (43.0)	86 (38.0)		
active/very active	75 (23.0)	19 (13.0)	75 (19.0)	41 (18.0)	0.275	0.429
Hypertension:						
yes	116 (35.0)	69 (47.0)	128 (33.0)	68 (30.0)		
no	215 (65.0)	77 (53.0)	261 (67.0)	159 (70.0)	0.545	0.001
History of diabetes:						
yes	37 (11.0)	26 (18.0)	50 (13.0)	30 (13.0)		
no	294 (89.0)	120 (82.0)	339 (87.0)	197 (87.0)	0.492	0.226
Familial history of MI/CHD:						
yes	84 (25.0)	39 (27.0)	74 (19.0)	48 (21.0)		
no	247 (75.0)	107 (73.0)	315 (81.0)	179 (79.0)	0.040	0.215
Salt intake:						
low	186 (56.0)	98 (67.0)	217 (56.0)	123 (54.0)		
moderate	91 (28.0)	35 (24.0)	124 (32.0)	77 (34.0)		
high	54 (16.0)	13 (9.0)	48 (12.0)	27 (12.0)	0.207	0.046
Fat intake:						
low	158 (48.0)	84 (58.0)	217 (56.0)	126 (56.0)		
moderate	112 (34.0)	50 (34.0)	125 (32.0)	85 (37.0)		
high	61 (18.0)	12 (8.0)	47 (12.0)	16 (7.0)	0.028	0.787

\*Abbreviations: MI – myocardial infarction; CHD – chronic heart disease.

† $\chi^2$  test for independence; MI cases vs sex-matched controls.

(Table 1). According to self-reported education level, 29% of men and 16% of women with STEMI were highly educated, as opposed to 20% of men and 11% of women among controls ( $P=0.004$  for men, and  $P=0.166$  for women). A white collar profession was reported by 42% of men with STEMI and 28% of their controls ( $P<0.001$ ), and by 30% of women with STEMI and 22% of women controls ( $P=0.176$ ). For religious affiliation, 74% of men and 67% of women with STEMI and 68% of men and 72% of women controls identified

themselves as Muslim ( $P=0.111$  for men, and  $P=0.400$  for women). Of all study participants, only 15 were single. The prevalence of obesity in men was similar in both groups (13% and 11%), whereas women with STEMI were more obese than their controls (19% vs 14%, respectively,  $P=0.412$ ). The prevalence of current smoking in women with STEMI (13%) and their controls (15%) was similar, whereas men with STEMI reported a higher rate of smoking than their controls (55% vs 47%, respectively,  $P=0.009$ ). Alcohol in-

**Table 2.** Association of selected socio-demographic and risk factors with ST-elevated myocardial infarction by sex, with age-adjusted odds ratios and 95% confidence intervals from binary logistic regression\*

Variable	Men		Women	
	OR (95% CI)	P	OR (95% CI)	P
Age (1 year)	0.99 (0.97-1.01)	0.093	1.03 (1.01-1.05)	0.014
Education (years):		0.007		0.089
0-8	0.73 (0.50-1.06)	0.094	0.55 (0.30-1.03)	0.063
9-12	0.50 (0.33-0.74)	0.007	0.88 (0.39-2.01)	0.769
>12	reference	-	reference	-
Occupation/profession:		0.008		0.143(2)
agriculture	0.58 (0.35-0.97)	0.043	0.56 (0.23-1.36)	0.204
industry/manual	0.51 (0.37-0.70)	0.009	0.63 (0.38-1.02)	0.059
white collar	reference	-	reference	-
Religion:				
Muslim	1.32 (0.95-1.82)	0.104	0.90 (0.51-1.26)	0.334
Christian	reference	-	reference	-
Marital status:		0.432		0.348
single	0.57 (0.24-1.35)	0.204	2.03 (0.73-5.63)	0.174
widowed/divorced	0.91 (0.47-1.78)	0.793	1.24 (0.62-2.48)	0.537
married	reference	-	reference	-
Smoking:		0.142		0.502
current	1.34 (0.98-1.84)	0.073	0.77 (0.41-1.42)	0.404
past	0.99 (0.60-1.64)	0.972	0.66 (0.26-1.66)	0.378
never	reference	-	reference	-
Alcohol consumption:		0.021		0.374
no	reference	-	reference	-
occasionally ( $\leq 1$ unit/week)	0.98 (0.63-1.53)	0.943	0.90 (0.58-1.40)	0.639
2 units/week to $\leq 2$ units/day	0.59 (0.36-0.96)	0.034	2.13 (0.65-7.01)	0.209
>2 units/day	0.65 (0.35-1.22)	0.181	N/A	N/A
Physical activity:		0.033		0.882
little active/no active	2.05 (1.01-4.17)	0.054	0.77 (0.27-2.17)	0.619
moderately active	1.11 (0.68-1.82)	0.682	0.87 (0.41-1.87)	0.723
active/very active	reference	-	reference	-
Body mass index:		0.493		0.007
<25	reference	-	reference	-
25-29.9	1.19 (0.85-1.68)	0.314	2.65 (1.44-4.88)	0.008
$\geq 30$	1.25 (0.78-2.02)	0.350	6.43 (2.58-16.0)	0.004
Hypertension:				
yes	1.25 (0.89-1.74)	0.192	1.93 (1.24-3.00)	0.007
no	reference	-	reference	-
Diabetes mellitus:				
yes	0.89 (0.57-1.41)	0.632	1.23 (0.68-2.21)	0.487
no	reference	-	reference	-
Familial history of MI/CHD:				
yes	1.39 (0.97-1.98)	0.074	1.47 (0.90-2.41)	0.123
no	reference	-	reference	-
Salt intake:		0.223		0.379
low	reference	-	reference	-
moderate	0.78 (0.55-1.11)	0.174	0.68 (0.40-1.17)	0.157
high	1.14 (0.71-1.82)	0.581	0.81 (0.35-1.83)	0.614
Fat intake:		0.104		0.133
low	reference	-	reference	-
moderate	1.18 (0.84-1.67)	0.342	1.58 (0.88-2.83)	0.134
high	1.68 (1.05-2.68)	0.034	2.52 (0.96-6.59)	0.062

\*Abbreviations: OR - odds ratios, CI - confidence interval; MI - myocardial infarction; CHD - chronic heart disease.

take habits were similar in men with STEMI and their controls. About 14% of men did not drink any alcohol at all, and about 10% were heavy drinkers. About 58% of women in both groups did not drink any alcohol and none of them reported heavy drinking. The prevalence of self-reported diabetes did not significantly differ between women with STEMI and their controls. The prevalence of reported hypertension was higher in women with STEMI (47% vs 30% of controls, respectively,  $P=0.001$ ), a finding not evident in men. A positive familial history of heart disease was reported more by both men and women with STEMI than the controls, but the difference was significant only between the men in two groups ( $P=0.040$  for men, and  $P=0.215$  for women). Men with STEMI re-

ported a higher salt and animal fat intake than controls ( $P=0.207$  and  $P=0.028$ , respectively), whereas women with STEMI reported less salt intake than their controls ( $P=0.046$ ).

Sex-specific age-adjusted associations of myocardial infarction with socio-demographic and risk factors showed that less educated men had a lower risk of myocardial infarction than their more educated counterparts ( $P=0.007$ ), whereas such a difference was not found for women ( $P=0.089$ ; Table 2). The similar was evident for blue-collar men ( $P=0.008$ ) and women ( $P=0.143$ ). There was no association between religion and myocardial infarction in women (OR, 0.90; 95% CI, 0.51-1.26). Muslim men seemed to be at higher risk of myocardial infarction than

**Table 3.** Association of religion (Christian vs Muslim) with selected socio-demographic and risk factors for ST-elevated myocardial infarction by sex, with age-adjusted odds ratios and 95% confidence intervals from binary logistic regression

Variable	Men		Women	
	OR (95% CI)	P	OR (95% CI)	P
Education (years):		<0.014		0.038
0-8	0.46 (0.30-0.71)	0.007	0.51 (0.27-0.96)	0.038
9-12	1.51 (1.00-2.27)	0.052	0.92 (0.40-2.12)	0.842
>12	reference	-	reference	-
Occupation/profession:		0.068		0.044
agriculture	0.48 (0.26-0.89)	0.024	0.20 (0.06-0.72)	0.009
industry/manual	0.89 (0.63-1.25)	0.503	0.72 (0.43-1.19)	0.192
white collar	reference	-	reference	-
Smoking:		0.974		0.427
current	0.99 (0.70-1.40)	0.968	0.96 (0.51-1.82)	0.913
past	1.06 (0.61-1.82)	0.842	0.48 (0.16-1.45)	0.188
never	reference	-	reference	-
Alcohol consumption:		0.229		0.324
no	reference	-	reference	-
occasionally ( $\leq 1$ unit/week)	0.88 (0.55-1.40)	0.577	1.04 (0.66-1.65)	0.849
2 units/week to $\leq 2$ units/day	0.74 (0.44-1.25)	0.263	0.21 (0.03-1.66)	0.144
>2 units/day	0.50 (0.24-1.03)	0.059	N/A	N/A
Physical activity:		0.214		0.659
little active/no active	1.92 (0.89-4.18)	0.103	1.04 (0.35-3.08)	0.937
moderately active	1.30 (0.76-2.24)	0.337	0.82 (0.37-1.80)	0.614
active/very active	reference	-	reference	-
Body mass index:		0.129		0.912
<25	reference	-	reference	-
25-29.9	0.68 (0.46-0.99)	0.043	1.08 (0.58-2.01)	0.819
$\geq 30$	0.93 (0.56-1.55)	0.779	1.21 (0.50-2.95)	0.673
Hypertension:		0.714		0.941
yes	1.07 (0.74-1.54)	0.714	0.98 (0.61-1.57)	0.941
no	reference	-	reference	-
Diabetes mellitus:		0.027		0.770
yes	1.68 (1.05-2.68)	0.027	1.10 (0.59-2.05)	0.770
no	reference	-	reference	-
Familial history of MI/CHD:		0.373		0.331
yes	0.83 (0.56-1.24)	0.373	0.76 (0.44-1.32)	0.331
no	reference	-	reference	-
Salt intake:		0.356		0.182
low	reference	-	reference	-
moderate	0.82 (0.56-1.21)	0.319	0.59 (0.33-1.06)	0.077
high	0.71 (0.42-1.20)	0.203	0.59 (0.25-1.43)	0.253
Fat intake:		0.294		0.674
low	reference	-	reference	-
moderate	0.82 (0.56-2.00)	0.312	1.08 (0.59-1.97)	0.809
high	0.67 (0.40-1.14)	0.139	0.69 (0.24-2.04)	0.504

\*Abbreviations: OR - odds ratios, CI - confidence interval; MI - myocardial infarction; CHD - chronic heart disease.

Christians (Orthodox and Catholic). In men, abstainers had the highest risk of STEMI. However, the association of alcohol intake with myocardial infarction was inconsistent, since heavy drinkers were shown to be at the lowest risk. Lack of physical activity was strongly associated with STEMI in men (OR, 2.1; 95% CI, 1.0-4.2), a finding not evident in women. STEMI was strongly associated with overweight (OR, 2.7; 95% CI, 1.4-4.9) and obesity (OR, 6.4; 95% CI, 2.6-16.0) in women. Hypertension was significantly associated with STEMI in women only (OR, 1.9; 95% CI, 1.2-3.0). No association between diabetes mellitus and myocardial infarction was evident in men, whereas in women diabetes mellitus was a weak predictor (OR, 1.4; 95% CI, 0.9-2.1). A positive familial history of heart disease was associated with myocardial infarction in both sexes. The association of self-reported salt intake with myocardial infarction was rather inconsistent, whereas high intakes of animal fat were strongly associated with myocardial infarction in both sexes (OR, 1.7; 95% CI, 1.1-2.7 for men, and OR, 2.5; 95% CI, 0.9-6.6 for women).

Christians were more educated than Muslims ( $P=0.014$  for men, and  $P=0.038$  for women), and were more likely to be of a higher social status ("white collar") ( $P=0.068$  for men, and  $P=0.044$  for women; Table 3). There was no evidence of association between religion and lifestyle and behavioral practices in either sex. However, Christian men reported less heavy drinking than Muslims (OR, 0.5; 95% CI, 0.2-1.0). Christian men had a higher prevalence of self-reported diabetes than Muslims (OR, 1.7; 95% CI, 1.1-2.7).

In men, upon adjustment for socio-demographic characteristics, life-style and behavioral factors, pre-existing health conditions, and familial history of heart disease, there was no evidence of a statistically significant association between STEMI and religion either in men (OR, 1.2; 95% CI, 0.9-1.7) or in women (OR, 0.9; 95% CI, 0.6-1.6).

## Discussion

Our results showed that the two religious groups, Muslims and Christians, had similar life-style. No association between abstinence from alcohol and Islamic religious affiliation was evident in men. Moreover, a higher proportion of Muslim men reported excessive alcohol consumption.

Patterns of smoking and physical activity were not different in Muslims and Christians. The same findings were reported in a study in Delhi, India, where the variations in prevalence rates of coronary heart disease between Muslims and Christians could not be explained satisfactorily on the basis of conventional risk factors, including smoking (1).

No association of religion with myocardial infarction was evident in either sex after controlling for socio-demographic characteristics and behavioral factors. Thus, our findings are not consistent with previous reports from India (1) or Israel (2). On the other hand, our results are compatible with a recent report from Cape Town, South Africa (3).

There is little information about cardiovascular disease patterns in Albania. The age-adjusted coronary heart disease mortality rate in men aged 0-64 years was reported to be similar to that in Italy, and less than half the rate in the UK (6,7). A plausible explanation for such findings was diet (6,7). In addition, there were slight differences depending on the geographical area, with southeast areas believed to consume more olive oil, fruits and vegetables, having the lowest mortality rates from coronary heart disease (7). More recent information suggests that cardiovascular disease mortality may have increased in Albania in the last few years (8,9), and cardiovascular disease "morbidity" (based on number of hospital admissions) in both Tirana and the whole country has increased quite consistently in the last decade (8). However, it is said that "deviation" from the traditional diet and behavioral factors has taken place in all regions of the country.

Our tools for assessing diet were limited and did not capture the whole spectrum of daily calorie intake or important dietary habits related to protein, vegetable fat, fruit and vegetable intake. Nevertheless, another important indication of the "secularity" of Albanian Muslims was the consumption of pork (not shown), which was not lower than among Christians. Christians of both sexes, however, were more educated and enjoyed a higher social status than Muslims.

In our study, there was evidence of a positive association of educational attainment and profession with myocardial infarction, with the most educated men and women being at the highest "risk". This finding is not consistent with re-

ports from Western countries (10,11), and also a few reports from other former communist countries, where the highly educated men and women have consistently been showed to have the lowest risk for morbidity and mortality from cardiovascular diseases (12-14). This evidence from Albania, which resembles the early evolutionary stages of coronary epidemic in western world (15), needs further investigation based on more robust study designs.

We tried to select controls from hospital outpatient departments believed to be generally representative of the population of Tirana. Ear, Nose, and Throat and Orthopedics departments were targeted for recruitment of controls as it was thought that care-seeking behaviors, referral to hospital, and hospital admission would be little affected by their socio-economic characteristics, such as education and occupation. However, the control group selected from these two University departments may not be representative of the Tirana population that produced the cases of acute myocardial infarction, especially with respect to socio-demographic attributes such as religion, education, and other social class measures. Yet, we have no confirmation from an independent source that our control group is not representative of the overall population in Tirana. Therefore, we have no evidence that the excess incidence in the more educated is due to selection bias related to recruitment of controls.

This study suggests similar distribution of life-style and behavioral factors in Muslim and Christian adults in the secular Albanian culture. Furthermore, the risk of a first acute non-fatal myocardial infarction seems to be similar in Muslims and Christians of both sexes. It seems that religion is not only an irrelevant socio-political issue in Albania, but it also fails to predict the occurrence of myocardial infarction and/or life-style habits among adults.

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