Focuses on the Prevalence and Impact of Metabolic Syndrome on the Outcome of Patients With Acute Coronary Syndrome in Iraq and Hungary

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OBJECTIVES

The aim is to ascertain the prevalence of metabolic syndrome (MetS) in patients from Hungary and Iraq, suffering from acut coronary syndrome (ACS) and investigate the effects of MetS on hospital outcomes, in particular mortality and differences in patients' baseline characteristics.

METHODS

A prospective cohort study was conducted in two cardiac centers between 2018. 05-2019. 05. it included 164 consecutive ACS patients; 64 patients from the Heart Institute, Medical School, University of Pécs and 100 patients from Al Nassiryah Heart Center Iraq. Baseline characteristics, clinical management and in-hospital and 30 days post discharge outcomes were recorded.

RESULTS

Prevalence of metabolic syndrome among ACS patients was not significantly higher to Hungary (25.0 % vs 34.1 %; P=0.306). There were no significant differences in age between those with and without MetS (64.2 vs 63.3 years; P=0.394). MetS was associated with a higher median BMI (28.0 vs 23.7 kg/m2; P<0.001), hyperlipidemia (37.8% vs 12.8%; P<0.001), hypertension (48.8% vs 27.4%; P=0.024), high cholesterol (5.4 vs 4.1 mmol/L; P < 0.001), high LDL-C (3.5 vs 2.6 mmol/L; P<0.001), and high triglycerides (1.4 vs 1.1 mmol/L; P < 0.001). The MetS was associated with higher risk of out hospital re-infarction (12.8% vs 3.7%; P=0.031) and MACE (17.7% and 6.1%; P=0.027).

CONCLUSIONS

Current study did not show any significant difference in the incidence of MetS between ACS patients in the two countries. But patients with MetS were significantly more likely to be associated with MACE (P=0.027).

Variables		All patients (n=164, 100%)	Metabolic syndrome (n= 97, 59.1%)	Without metabolic syndrome (n= 67, 40.9%)	P value
Nationality, n (%)					
Hungary		64 (39.0%)	41 (25.0%)	23 (14.0)	0.306
Iraq		100 (61.0%)	56 (34.1%)	44 (26.8%)	
Age, mean + SD, years		63.8+11.9	64.2 +11.5	63.3+ 12.6	0.394
Male gender, n (%)		111 (67.7%)	60 (36.6%)	51 (31.1%)	0.055
Family history of CAD, n (%)		30 (18.3%)	22 (13.4%)	8 (4.9%)	0.080
BMI, median (IQR), kg/m^2		26.8 (23.0-31.9)	28.0 (25.8-32.3)	23.7 (22.0-29.0)	0.000
Current smoking,n(%)		48 (29.3%)	21 (12.8%)	27 (16.5%)	0.010
Hypertension,n(%)		125 (76.2%)	80 (48.8%)	45 (27.4%)	0.024
Diabetes mellitus,n(%)		71 (43.3%)	48 (29.3%)	23 (14.0%)	0.054
Hyperlipidemia, n (%)		83 (50.6%)	62 (37.8%)	21 (12.8%)	0.000
Prior MI, n (%)		87 (53.0%)	56 (34.1%)	31 (18.9%)	0.148
Prior PCI, n (%)		82 (50.0%)	54 (32.9%)	28 (17.1%)	0.081
Prior CABG, n (%)		15 (9.1%)	10 (6.1%)	5 (3.0%)	0.534
Renal failure, n (%)		12 (7.3%)	7 (4.3%)	5 (3.0%)	0.953
Ejection Fraction ≤ 30%, n (%)		7 (4.3%)	5 (3.0%)	2 (1.2%)	0.499

Table 1.
Demographic and clinical characteristics of the acute coronary syndrome cohort stratified by metabolic syndrome

In Hospital outcomes	Metabolic syndrome (n=97)	Without metabolic syndrome (n= 67)	P value
Death	5 (3.0%)	2 (1.2%)	0.499
Re-infraction	8 (4.9%)	5 (3.0%)	0.855
Cardiogenic shock	7 (4.3%)	3 (1.8%)	0.471
Stroke	2 (1.2%)	0 (0.0%)	0.237
MACE (death, re-infraction and stroke)	13 (7.9%)	5 (3.0%)	0.232
30 Days post-discharge outcomes	**Metabolic syndrome**	**Without metabolic syndrome**	**P value**
Death	7 (4.3%)	4 (2.4%)	0.754
Re-infraction	21 (12.8%)	6 (3.7%)	0.031
Cardiogenic shock	8 (4.9%)	4 (2.4%)	0.582
Stroke	5 (3.1%)	1 (0.6%)	0.215
MACE (death, re-infraction and stroke)	29 (17.7%)	10 (6.1%)	0.027
Note: Data are expressed as n (%) percentages and frequencies.			
Abbreviations: MACE= major adverse cardiovascular events			

Table 2.
In-hospital and 30 days post-discharge outcomes of the acute coronary syndrome cohort stratified by metabolic syndrome

Type of Metabolic Syndrome Abnormalities, F (%)					
Parameter	Abdominal obesity	Hypertriglyceridemia	Low HDL-C	High Blood Pressure	High Fasting Glucose
Total	61 (62.9%)	30 (30.9%)	57 (58.8%)	81 (83.5%)	73 (75.3%)
Nationality					
Hungary	34 (35.1%)	12 (12.4%)	27 (27.8%)	38 (39.2%)	29 (29.9%)
Iraq	27 (27.8%)	18 (18.6%)	30 (30.0%)	43 (44.3%)	44 (45.4%)
Gender					
Male	38 (39.2%)	23 (23.7%)	25 (25.8%)	50 (51.5%)	28 (28.9%)
Female	23 (23.7%)	7 (7.2%)	32 (33.0%)	31 (32.0%)	45 (46.4%)
Note: The 5 Metabolic Syndrome abnormalities include increased BMI (higher 25 kg/m^2), high triglyceride levels (of >150 mg/dL [1.7 mmol/L] or drug treatment), low HDL-cholesterol levels (of <40 mg/dL (1.0 mmol/L) for men and <50 mg/dL (1.3 mmol/L) in women or drug treatment), blood pressure (of >130 mm Hg for systolic and/or >85 mm Hg for diastolic or drug treatment), and blood sugar (of >100 mg/dL [> 5.6 mmol/L] or drug treatment)..					

Table 3.
Prevalence of the Different Types of Metabolic Syndrome Abnormalities of the Study Cohort Stratified by Nationality and Gender

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