Original Research Article

Delta of Egypt Acute Coronary Syndrome Registry

Abstract

Background: Acute coronary syndrome (ACS) is a main reason of morbidity and mortality in patients with coronary heart disease(CHD) in developed nations. ACS refers to a spectrum of clinical signs that occur as a result of the rupture of a coronary artery plaque, which is worsened by thrombosis, embolization, and variable degrees of myocardial perfusion blockage. Generally, it is one of three coronary artery diseases (CAS): ST-segment elevation myocardial infarction (STEMI), or unstable angina (UA), non-ST-segment elevation myocardial infarction (NSTEMI).The production of sensitive indicators of myocardial necrosis (for example, troponins) is considered a suggestive indication of myocardial cell necrosis and so meets the criteria of myocardial infarction. The goal of the registry is to assess patient features, practice pattern and outcome of ACS in this region using a registry design.

Methods: This prospective and observational registry was carried out on 1000 Patients with ACS (whatever its type) in the period of six months in cardiac centers in the region of middle delta of Egypt. The survey took place in (Tanta, Mahalla, Mansoura, Shebin-Elkom, Damanhor, Kafr-Elsheikh, Banha and Cairo).

Results: There was an insignificant difference in the primary etiology of ACS between both sexes. Women got less ACE inhibitors, mineralocorticoid receptor antagonists, beta-blockers, ,antiplatelets, statins, and nitrates, but received more digoxin, amiodarone, anticoagulants, and calcium channel blockers. There was an insignificant association in in-hospital and 1 year mortality between female and male, respectively.

Conclusions: Smoking and hypertension are significant risk factors among patients raising an alarming sign for primary and secondary inhibition for CAD. The delay in seeking medical help is related to unawareness of the public on what to do raising important questions about EMS role and public health education.

Keywords: Delta, Egypt, Acute, Coronary, Syndrome, Registry

Introduction:

Acute coronary syndrome (ACS) is a main reason of morbidity and death in cases with coronary heart disease(CHD) in developed countries [1]. ACS refers to a spectrum of clinical signs that occur as a result of the rupture of a coronary artery plaque, which is worsened by thrombosis, embolization, and variable degrees of myocardial perfusion blockage [2]. It is often one of three coronary artery disorders: ST- segment elevation myocardial infarction (STEMI),non- ST- segment elevation myocardial infarction (NSTEMI) and unstable angina (UA) [3].

The production of sensitive indicators of myocardial necrosis (for example, troponins) is suggestive indication of myocardial cell necrosis and so meets the criteria of myocardial infarction [4]. ACS should be distinguished from stable angina [5], It occurs after physical exertion or stress and resolves when the subject is at rest. Against with stable angina, UA occurs unexpectedly, often at rest or with minimal exertion, or at lesser degrees of exertion than the individual's previous angina ("crescendo angina"). New-onset angina is also considered UA, since it suggests the start of a new coronary artery problem [6]. ACS often indicates a degree of coronary artery damage caused by atherosclerosis [7].

The primary prevention of atherosclerosis is to manage risk factors such as healthy eating, exercise, and treatment for hypertension and diabetes, as well as to avoid smoking and maintain healthy cholesterol levels; in patients with significant risk factors, aspirin has been shown to reduce the risk of cardiovascular events. In myocardial infarction, secondary

prevention is considered [8]. Following (ACS), it is critical to maintain sufficient platelet inhibition to reduce the risk of recurrent ischemic episodes [9].

The aim of the registry was to determine patient characteristics, practice pattern and outcome of ACS in this region using a registry design.

Patients and Methods:

1000 Patients seen in cardiac centers in the region of middle delta of Egypt will be included in the study. The survey will take place in (Tanta, mahalla, Mansoura, Shebin-Elkom, Damanhor, Kafr-Elsheikh, Banha and Cairo) including all patients with ACS (whatever its type) in the period of six months and excluding patients<18 years old and patients living out delta Egypt. Patients<18 years old and patients living out delta Egypt were excluded.

ACS registry centers in the region of middle delta of Egypt are prospective and observational registry of patients with ACS with six months follow up. Data will be collected on standardized case report form. Data includes patient demographic, medical history, physical examination, type of ACS and outcome on hospital discharge. Basic data of the patient as Patient ID, Medical center, Age, sex, weight, and Height. Vital data of the patient as blood pressure, heart rate, respiratory rate, and temperature. History and trigger factors as Hypertension (HTN), Smoking, Diabetes mellitus (DM), Rheumatic heart disease (RHD), Heart Failure (HF), Cardiac surgery before, transient ischemic attack (TIA), Vascular disease, Thrombo-embolic disease, Dialysis, Chronic obstructive pulmonary disease (COPD), Thyroid, Anemia, Drug history, (CHD), Hyperlipidemia, Sleep apnea, Emphysema, Alcohol consumption, Carotid stenosis, Bleeding history and Atrial fibrillation (AF). History of ACS should be taken and its type if present which may be (UA), NTEMI or STEMI and how treated which may be medical, ffibrinolysis, CA, PCI or CABG. Primary reason for ER visit if ACS or other cardiac and non-cardiac reasons. ACS symptoms at presentation as syncope, Chest pain, sweating, Dyspnea, palpitations or other.

Investigations: ECG for detection of Rate, Rhythm, Axis, P wave, PR interval, QRS complex, T wave, QT interval and Ischemic changes. Echocardiogram (ECHO) for detection of Ejection fraction (EF), Left Ventricular End Diastolic Diameter (LVEDD), Left Ventricular End Systolic Diameter (LVESD), aortic root (AO root), Regional wall motion abnormalities (RWMA), atrioventricular (AV), left anterior descending artery (LAD), tricuspid valve (TV), minute ventilation (MV), Polycythemia vera PV and Pulmonary hypertension (PHTN). Complete blood count (CBC) for detection of Total Leucocytic Count (TLC), Human Granulocytic Ehrlichiosis (HE), PLET. Renal Function for detection of creatin and urea. Liver Function for detection of Serum glutamic oxaloacetic transaminase (SGOT) and serum glutamic-pyruvic transaminase (SGPT). Cardiac enzymes for Creatine phosphokinase (CPK), Creatine kinase-MB (CK-MB) and Troponin. And finally, Lipid profile. Management may be Medical, Fibrinolytic, Aspirin, clopidogrel, ticagrelor, statin, ACEI, ARB, BB, anticoagulant, nitrates, trimetazidine or other. Intervention as CA, PCI, and CABG.

Results:

1000 patients' characteristics, vital status, and medical history of the PTN, triggering factors and comorbidities were discussed in the following table. **[Table 1]**

Table 1: Basic data of the patients &vital status and Medical history of the patients. (N = 1000).

		No.	**(%)**
Medical center	**Tanta**	200	20%
	Damanhur	100	10%
	Banha	100	10%
	Shebin	100	10%
	Mansora	100	10%
	Zagazig	100	10%
	Kafr Elshekh	100	10%
	Cairo	200	20%
Age (years)			
Min. - Max		18 - 96	
Mean ± SD		59.39 ± 11.517	
Median		60	
		No.	**(%)**
Gender	Male	820	82.0%

	Female	180	18.0%
Weight (kg)			
Min. - Max		68 - 115	
Mean ± SD		89.49 ± 12.424	
Median		88	
Height (cm)			
Min. - Max		183 - 154	
Mean ± SD		168.31 ± 8.441	
Median		168	

SD: standard deviation

620 of our enrolled patients were hypertensive, 320 were smokers, 320 were known to be diabetic, 140 had heart failure, 20 had cardiac surgery, 340 had a vascular disease, 10 had a thromboembolic disease, 10 had a thyroid complication, 20 had an atrial fibrillation and 60 had human C-virus HCV. None had a transient ischemic attack, Dialysis, COPD, anemia, congenital heart disease, sleep apnea, emphysema, alcohol consumption, carotid stenosis or bleeding history. **[Table 2]**

Table 2: Medical history of the patients. (N = 1000).

Disease	No.	%
Hypertension	620	62.0%
Smoking	320	32.0%
Diabetes mellitus	320	32.0%
Rheumatic heart disease	10	1.0%
Heart failure	140	14.0%
History of cardiac surgery	20	2.0%
Transient ischemic attack	0	0.0%
Vascular disease	340	34.0%
Thromboembolic disease	10	1.0%
Dialysis	0	0.0%
COPD	0	0.0%
Thyroid	10	1.0%
Anemia	0	0.0%
Congenital heart disease	0	0.0%
Sleep apnea	0	0.0%
Emphysema	0	0.0%
Alcohol consumption	0	0.0%
Carotid stenosis	0	0.0%
Bleeding history	0	0.0%
Atrial fibrillation	20	2.0%
HCV	60	6.0%

SD: standard deviation, COPD: Chronic obstructive pulmonary disease, HCV: hepatitis C virus

Vital data of patients in emergency room were discussed in the following table. **[Table 3]**

Table 3: Vital data of the patients in the emergency room. (N = 1000).

Systolic Blood Pressure (mmHg)	
Min. - Max	90 - 230
Mean ± SD	131.65 ± 21.989
Median	130
Diastolic Blood Pressure (mmHg)	
Min. - Max	60 - 110
Mean ± SD	81.73 ± 10.364
Median	80
Pulse (beat/min)	
Min. - Max	50 - 120
Mean ± SD	79.67 ± 11.092
Median	79
Respiratory rate	
Min. - Max	12 - 20
Mean ± SD	15.87 ± 1.725
Median	16
Temperature (Celsius)	
Min. - Max	36.6 - 37.2
Mean ± SD	36.922 ± 0.176
Median	36.9

SD: standard deviation

620 of our enrolled patients had a history of coronary artery disease. In current type of ACS, there was 370 had an UA, 289 had NSTEMI, 341 had a STEMI. 654 had a medical treatment of ACS, 135 had a fibrinolysis, 25 coronary angiographies, 137 percutaneous intervention and 49 had CABG. 880 of our enrolled patients had a chest pain, 260 had a dyspnea, 110 had a sweating, 10 had a palpitation, 20 had a vomiting and 10 had an Edema. None of patient's had asymptomatic or syncope. **[Table 4]**

Table 4: Distribution of the coronary artery disease and symptoms in the studied patients

	No.	**%**
Past history of ACS	660	66%
Type of current ACS		
(UA)	370	37.0%
NSTEMI	289	28.90%
STEMI	341	34.10%
Treatment of ACS		
Medical	654	65.4%
Fibrinolysis	135	13.5%
Coronary angiography	25	2.5%
Percutaneus intervention	137	13.7%
CABG	49	4.9%
Primary reason for current ER visit	1000	100.0%

Symptoms of the studied patients		
	No.	**%**
Asymptomatic	0	0.0%
Chest pain	880	88.0%
Dyspnea	260	26.0%
Syncope	0	0.0%
Sweating	110	11.0%
Palpitation	10	1.0%
Vomiting	20	2.0%
Edema	10	1.0%

SD: standard deviation, NSTEMI: Non-ST-elevated myocardial infarction, STEMI: ST-elevated myocardial infarction, CABG: coronary artery bypass graft ,UA: Unstable angina

ECG findings upon admission were discussed in the following table. **[Table 5]**

Table 5: ECG findings upon admission (n=1000).

Rate		
Min. - Max	50 - 120	
Mean ± SD	79.85 ± 11.155	
Median	79.50	
Rhythm	**No.**	**%**
NSR	950	95.0%
AF	30	3.0%
Flutter	10	1.0%
Axis		
Normal	830	83.0%
Left axis deviation	130	13.0%
Right axis deviation	20	2.0%
P wave		
Normal (upright)	960	96.0%
AF	30	3.0%
PR interval		
Min. - Max	1.5 - 6.0	
Mean ± SD	3.311 ± 0.868	
Median	3.00	
QRS complex		
Normal	910	91.0%
IBBB	40	4.0%
RBBB	20	2.0%
T wave		
Normal	590	59.0%
Inverted	340	34.0%
Biphasic	50	5.0%
Site of abnormality of T wave		
Inferior	120	12.0%
Lateral	100	10.0%
Anterior	170	17.0%
QT interval		
Normal	650	65.0%
St Elevation	210	21.0%
St Depression	110	11.0%

Ischemic changes		
+ve	750	75.0%
-ve	250	25.0%

SD: standard deviation, NSR: Normal sinus rhythm, AF: Atrial fibrillation, P wave indicates atrial depolarization, QRS indicates ventricular depolarization, IBBB: Left bundle branch block, RBBB: Right bundle branch block

Transthoracic echocardiographic (TTE) parameters were discussed in the following table.

[Table 6]

Table 6: Transthoracic echocardiographic (TTE) parameters

Ejection fraction		
Mean ± SD	56.41 ± 8.918	
Median	57.50	
LVEDD & LVESD		
	No.	**%**
Normal	760	76.0%
Dilated	150	15.0%
Segmental wall motion abnormality	330	33.0%
Mitral valve		
Normal	540	33.0%
Abnormal	410	41.0%
Type of mitral valve abnormality		
Stenosis	10	1.0%
Regurge	390	39.0%
Degree of abnormality of mitral valve		
Mild	280	28.0%
Moderate	100	10.0%
Sever	20	2.0%
Aortic valve		
Normal	890	89.0%
Abnormal	60	6.0%
Type of abnormality		
Regurge	40	4.0%
Degree of abnormality of aortic valve		
Mild	890	89.0%
Moderate	60	6.0%
Tricuspid valve		
Normal	820	82.0%
Abnormal	130	13.0%
Type of abnormality		
Regurge	130	13.0%
Degree of abnormality		
Mild	90	9.0%
Moderate	20	2.0%
Sever	20	2.0%
Pulmonary valve		
Normal	920	92.0%

Abnormal	10	1.0%
Type of abnormality	0	0.0%
Degree of abnormality		
Regurge	10	1.0%

SD: standard deviation, LVEDD: left ventricular end-diastolic dimension, LVESD: Left Ventricular End-Systolic Diameters

Laboratory investigations were discussed in the following table. **[Table 7]**

Table 7: laboratory investigations

Total leucocytes count	
Min. - Max	1000 - 25000
Mean ± SD	± 3536.799032.86
Median	8600.00
Hemoglobin	
Min. - Max	9.80 - 18.00
Mean ± SD	13.508 ± 1.625
Median	13.45
Platelets	
Min. - Max	0.9 - 526000
Mean ± SD	215876.197 ± 88371.459
Median	215500
Creatinine (mg/dL)	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD
Median	Median
Urea (mmol/L)	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD
Median	Median
SGOT	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD
Median	Median
SGPT	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD
Median	Median
CPK	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD
Median	Median
CKMB	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD
Median	Median
Troponin	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD
Median	Median
Serum cholesterol	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD

Median	Median
Serum triglycerides	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD
I.N.R.	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD
Median	Median
P.T.T.	
Min. - Max	Min. - Max
Mean ± SD	Mean ± SD
Median	Median

SD: standard deviation, SGOT: serum glutamic-oxaloacetic transaminase, SGPT: serum glutamic-pyruvic transaminase, CPK: Creatine phosphokinase, CKMB: Creatine kinase-MB, I.N.R.: international normalized ratio, P.T.T.: partial thromboplastin time

140 of our enrolled patients were given fibrinolytic on admission and none were prescribed on discharge. 990 patients were given aspirin on admission, and all patients were prescribed on discharge. 990 patients were given clopidogrel or ticagrelol on admission and all patients were prescribed on discharge. 990 patients were given statin on admission, and all patients were prescribed on discharge. 980 were given ACEI or ARB and 990 were prescribed on discharge. 990 were given B blocker and 990 were prescribed on discharge. 950 were given Anticoagulants and 50 were prescribed on discharge. 970 were given nitrates and 970 were prescribed on discharge. 630 were given nitrates and 640 were prescribed on discharge.220 of our enrolled patients had a CA, 370 had a PCI and none had a CABG. **[Table 8]**

Table 8: Drugs given on admission and prescribed on discharge

		No.	**%**
Fibrinolytic	**On admission**	140	14.0%
	On discharge	0	0.0%
Aspirin	**On admission**	990	99.0%
	On discharge	1000	100.0%
Clopidogrel or ticagrelol	**On admission**	990	99.0%
	On discharge	1000	100.0%
Statin	**On admission**	990	99.0%
	On discharge	1000	100.0%
ACEI or ARB	**On admission**	980	98.0%
	On discharge	990	99.0%
B blocker	**On admission**	990	99.0%
	On discharge	990	99.0%
Anticoagulants	**On admission**	950	99.0%
	On discharge	50	5.0%
Nitrates	**On admission**	970	97.0%

	On discharge	970	97.0%
Trimetazidine	**On admission**	630	63.0%
	On discharge	640	64.0%
CA		220	22.0%
PCI		370	37.0%
CABG		0	0.0%

SD: standard deviation, ACEI: Angiotensin converting enzyme inhibitors, ARB: Angiotensin receptor blockers, PCI: Percutaneous coronary intervention, CABG: coronary artery bypass graft

Discussion

Egypt is the Middle East and North Africa's most populated nation and has one of the region's highest rates of cardiovascular (CV) mortality. However, governmental primary preventive effectivities, very small information is documented about the incidence and features of premature (CAD) among Egyptian patients with (ACS) [10].

In Reda et al [11], Women made about 25% of patients. Premature ACS was widespread, affecting 43% of males younger than 55 and 67% of females younger than 65. Men were more likely to have (STEMI) (49 %), but women were more likely to have UA and (NSTEMI) (32 %each; p 0.001). 80 % of males and 89 %of females had central obesity, with 32 % of men and women having atherogenic dyslipidemia. Current smoking was reported by 62% of males and 72% of males under the age of 55. Women showed a higher prevalence of type 2 DM(53 vs 34% of males), hypertension (69 vs 49%), dyslipidemia (71 vs 41%), and obesity (71 vs 41%) (all p 0.001). There were no gender differences in most diagnostic and therapeutic treatments, however males had primary percutaneous coronary intervention (PCI) at a rate of 51% than 46% of women with STEMI (p = 0.064).

In **Elsawaf et al** [12], 79.1% of the study population were men and only 20.9% were women. The sex as a risk factor was more pronounced in the younger age group (presenting 96.1% of patients <40 years) and decreased as age advances (to reach only 69.8% of patients >60 years of age). Although males have a much greater risk of getting CAD than women until they reach roughly 60 years of age, this connection reverses after menopause, when women's risk quickly increase to match that of men. This may be because Estrogen may protect the heart

by regulating glucose metabolism and the hemostatic system, and it may also have a direct influence on the function of endothelial cells. This study population revealed that their incidence increased with age.

Rosengren et al [13], in the Euroheart ACS survey found that the number of women elevated from 17% among patients with age less than 55 years to 56% among patients aged 85 years. Positive family history was an important one among the younger age group as we had 55% of patients below 40 years of age with positive family history, and this percent decreased with age.

Systolic blood pressure ranged between (90 and 230) mmHg, with the mean of (131.65 ± 21.989) and the median was (130), while diastolic blood pressure ranged between (60 and 110) mmHg, with the mean of (81.73 ± 10.364) and median was (80). Pulse rate ranged from 50 to 120 beat/min with the Mean of (15.87 ± 1.725) and the median was (16). Respiratory rate ranged between (12 and 20) cycle/minute, with the mean of (15.87 ± 1.725) and the median was (16). Body temperature ranged between (36.6 and 37.2) degree Celsius, with the mean of (36.922 ± 0.176) and the median was (36.9). 620 of our enrolled patients (62.0%) were hypertensive, 320 (32.0%) were smokers, 320 (32.0%) were known to be diabetic, 140 (14.0%) had heart failure, 20 (2.0%) had cardiac surgery, 340 (34.0%) had a vascular disease, 10 (1.0%) had a thromboembolic disease, 10 (1.0%) had a thyroid complication, 20 (2.0%) had an atrial fibrillation and 60 (6.0%) had human C-virus HCV. **Reda et al,** [14] stated that the incidences of premature CAD was 51%. They were significantly increased in females (35% versus 16%, P<0.001) with substantially higher education level. Risk factors' (RFs) distribution stated a significantly increased incidence of Type-1 DM (6% versus 4%, P=0.005), obesity (42% versus 33%, P<0.001) and smoking (50% versus 47%, P<0.001) in patients with premature CAD than others. Remarkably, rates of reported dyslipidemia were comparable between groups (49% versus 47%, P=0.45) with an insignificant difference in

low density lipoprotein-cholesterol levels (131.7±48.5 versus 130.2±45.2 mg/dl, P=0.4). Patients with premature CAD tended to show more regularly with (STEMI) (50% versus 46%, P=0.035), with higher rates of therapy using primary PCI than others (48% versus 44%, P=0.04). Additionally, they were significantly less likely to undergo Coronary Artery Bypass Graft (4% versus 6.5%, P=0.003).

None had a transient ischemic attack, dialysis, COPD, anemia, congenital heart disease, sleep apnea, emphysema, alcohol consumption, carotid stenosis, or bleeding history. 620 of our enrolled patients (62.0%) had a history of coronary artery disease (CAD). In current type of ACS, there was 370 (37.0%) had an UA, 289 (28.90%) had NSTEMI, 341 (34.10%) had a STEMI. 654 (65.4%%) had a medical treatment of ACS, 135 (13.5%) had a fibrinolysis, 25 (2.5%) coronary angiographies, 137 (13.7%) percutaneous intervention and 49 (4.9%) had CABG. **Elsafar et al** [12], had 38 individuals existed with STEMI and 18 with non-STEMI; however, reperfusion therapies were administered to only 32 patients, somewhat more than half of all STEMI patients with (ACS).

140 of our enrolled patients (14.0%) were given fibrinolytic on admission and none were prescribed on discharge. 990 patients (99.0%) were given aspirin on admission, and all patients were prescribed on discharge. 990 patients (99.0%) were given clopidogrel or ticagrelol on admission and all patients were prescribed on discharge. 990 patients (99.0%) were given statin on admission, and all patients were prescribed on discharge. 980 (98.0%) were given ACEI or ARB and 990 (99.0%) were prescribed on discharge. 990 (99.0%) were given B blocker and 990 (99.0%) were prescribed on discharge. 950 (95.0%) were given Anticoagulants and 50 (5.0%) were prescribed on discharge. 970 (97.0%) were given nitrates and 970 (97.0%) were prescribed on discharge. 630 (63.0%) were given nitrates and 640 (64.0%) were prescribed on discharge. 220 of our enrolled patients (22.0%) had a CA, 370 (37.0%) had a PCI and none had a CABG.

The Euroheart ACS study included patients (n=10 253) from 103 hospitals in 25 countries. There was a significant inverse association between the age and the likelihood of presenting with ST-elevation. For every decade of life, the odds of presenting with ST-elevation reduced by 0.82 [95% confidence interval (CI) 0.79–0.84]; P<0.0001. Elderly individuals were much less often managed by cardiologists, had fewer comprehensive investigations, and were less likely to get reperfusion therapy when existing with ST-elevation ACS. Hospital mortality odds ratios were 1.87 (1.21–2.88) for patients aged 55–64, 3.70 (2.51–5.44) for patients aged 65–74, 6.23 (4.25–9.14) for patients aged 75–84, and 14.5 (9.47–22.1) for patients aged 85 years, with no significant variations through various kinds of admission or release diagnoses [13]. In **Hassanien et al** [15], Twenty hospitals throughout Egypt recruited 1634 patients hospitalized with AHF. Males accounted for 1112 (68%) of these patients, while females accounted for 522 (32%). Women had higher systolic blood pressures and resting heart rates at admission. Females had a higher body mass index (32.5 ± 9.0 vs. 29.3 ± 4.9, P< 0.001), a higher prevalence of atrial fibrillation (34.7 %vs. 22.4 percent, P< 0.001), and anaemia defined by hemoglobin 12 g/dL (83.1 vs. 58.4 percent, P 0.001). Females were more likely to present with heart failure with preserved EF (29.7% vs. 10.6%, P < 0.001). Females had more frequent prevelance DM (48.1% vs. 41.6%, P < 0.05) and hypertension (48.7% vs. 39.3%, P < 0.001) than had men, while smoking was rare among them (8.8% vs. 82.9%, P < 0.005). Between the sexes, there was no substantial difference in the underlying aetiology of heart failure. Women got less beta-blockers, ACE inhibitors, mineralocorticoid receptor antagonists, antiplatelets, statins, and nitrates, but received more digoxin, amiodarone, anticoagulants, and calcium channel blockers. Between female and male, there was an insignificant difference in in-hospital mortality (5.7 percent vs. 4.6 percent, P = 0.39) or one-year mortality (27.9 percent vs. 25.9 %, P = 0.48).

Conclusions:

In this prospective and observational registry of people with ACS, we screened 1000 patients in one year and overviewed patient characteristics, practice pattern and outcome of ACS in this region using a registry design.

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