ACSIS 2010 Acute Coronary Syndrome Israeli Survey

ACSIS 2010

Acute Coronary Syndrome Israeli Survey

March-April 2010

SURVEY FINDINGS AND TEMPORAL TRENDS

2000-2010

The Israel Heart Society

The Working Group on Intensive Cardiac Care of the Israel Heart Society

The Working Group on Interventional Cardiology of the Israel Heart Society

The Israel Society of Internal Medicine

The Israel Center for Disease Control (ICDC) Ministry of Health

The Israel Society for the Prevention of Heart Attacks

Publication 337

May 2011

Publication 337

ACSIS 2010
Acute Coronary Syndrome, Israel 2010

Survey Associates	**The Israel Heart Society (IHS)** The Working Group on Intensive Cardiac Care The Working Group on Interventional Cardiology **The Israel Society of Internal Medicine** **The Israel Center for Disease Control (ICDC), Ministry of Health** **e-Med, The medical news channel for health experts** **The Israel Society for the Prevention of Heart Attacks (ISPHA)**
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Survey Data Analysis	**The Israel Society for the Prevention of Heart Attacks (ISPHA)**

The survey was conducted with the support of:

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The Israel Society for the Prevention of Heart Attacks (ISPHA)

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Introduction

It gives us special pleasure to present in this brochure selected data from the 10th Biennial National Survey on Acute Coronary Syndromes (ACSIS 2010), the "Decade" Survey that has become a tradition since it was launched in 1992 by Prof. Shlomo Behar.

ACSIS provides a state-of-the-art picture on the characteristics, management (medical and cardiac interventional) and outcome of ACS patients in Israel, and is source of pride for Israeli Cardiology.

ACSIS 2010 was carried out during March-April 2010, as a joint venture of the Working Groups of Intensive Cardiac Care and Interventional Cardiology of the Israel Heart Society, and the Israel Society of Internal Medicine, with the collaboration of the Israel Society for the Prevention of Heart Attacks (ISPHA), the Israel Center for Disease Control (ICDC), and e-Med company. This fruitful collaboration has contributed to the success of ACSIS-2010. We thank you all.

During the 2-month period of March-April, 2010, detailed data was collected in all 26 ICCU and cardiology wards in all public hospitals in Israel, on patients admitted with the diagnosis of ACS. For the first time, the ACSIS-PCI survey was conducted, collecting detailed data from all 23 Cath-Labs in Israel. Also, data was collected on non-ACS patients, who comprise part of the patients hospitalized in ICCU. In addition, data from a representative sample of 37 Internal Medicine wards was collected by the Israel Society of Internal Medicine.

ACSIS 2010 was an electronic CRF that made it possible to coordinate and monitor the on-going data collection during the survey, and to carefully evaluate and present the results in a relatively short time period.

During the past decade we have observed a steady increase in the use of evidence-based medications and primary reperfusion, with a shifting from thrombolysis to primary PCI. These considerable changes in management were associated with a significant improvement in patient's outcome: a striking decline in early and late mortality and complications, and a shorter hospital stay.

We would like to thank the study coordinators and the staff members of all CCU's and Intermediate Wards, Cath Labs, Cardiac Departments and Internal Medicine wards, for their dedicated and hard work in collecting the data. We are grateful to each and every one of you. We thank the Israel Heart Society and its working groups, the ACSIS Executive Committee members, and finally the pharmaceutical and industrial companies and the ICDC for their generous support of the survey. All of you have greatly contributed to the success of ACSIS-2010 for the benefit of cardiac research and the improvement of medical care of patients with ACS in Israel.

Prof. Shmuel Gottlieb

Survey Coordinator
Chairman, WG on Intensive Cardiac Care
Israel Heart Society
Chairman, ACSIS Executive Committee

Dr. Shlomi Matetzky

Survey Coordinator
Acting Director, ISPHA
Neufeld Cardiac Research Institute
Sheba Medical Center, Tel-Hashomer

Message from the Israel Heart Society

We are proud to present this comprehensive summary of the results of ACSIS-2010, performed by ISPHA under the leadership of Dr Shlomi Matetzky and Prof. Shmuel Gottlieb from the Working Group on Intensive Cardiac Care, with the collaboration of the Working Group of Interventional Cardiology, led by Prof. Ran Kornowski, Prof. Haim Danenberg, and Dr. Amit Segev, under the auspices of the Israel Heart Society.

The ACSIS program, launched in 1992 by Prof. Shlomo Behar, has been the most significant cardiology survey in Israel since 1992. By performing surveys every 2 years we are able to detect temporal changes in the presentation and management of patients with acute coronary syndromes and use the information to improve the care of cardiac patients.

Careful analysis of the results of the ACSIS surveys demonstrates a significant improvement in patient care in cardiac intensive and intermediate care units over the years, increasing use of revascularization techniques, better adherence to guidelines and an impressive decrease in mortality from acute MI.

The Israel Heart Society is extremely proud of the excellent cooperation between the Working Groups and each and every cardiology department in Israel, which yielded this very high and complete level of information, unavailable in most developed countries.

We would like to recognize and thank all those dedicated individuals who worked so hard to make this project a reality. In 26 medical centers in Israel, physicians, nurses and coordinators worked day and night, not only to provide the best medical care for patients with acute MI and acute coronary syndromes, but also to collect the information that is summarized here. We are grateful to each and every one of them.

The survey could not have materialized without the support of the Israeli Ministry of Health, represented by the Israel CDC, and without generous support from the pharmaceutical industry, for which we are all very grateful. We are also grateful for the support provided by the Israel Medical Association, chaired by Dr. Leonid Edelman and Adv. Lea Wapner

Many thanks, indeed, to all those who contributed to this project. We trust that this booklet will provide interesting and exciting information on the management of acute coronary syndromes in Israel.

Prof. Gad Keren
President
Israel Heart Society

Prof. Doron Zahger
Secretary General
Israel Heart Society

Message from the Working Group on Interventional Cardiology

The ACSIS-PCI survey is both an integral and an important part of ACSIS 2010. It represents a reliable and up-to-date report of catheterization treatment of cardiac patients with acute coronary syndrome in Israel. The ACSIS-PCI survey was made possible thanks to the outstanding cooperation and enormous efforts of interventional cardiologists, the catheterization nursing staff, and the study coordinators in catheterization units throughout the country.

We would like to offer our sincere thanks and appreciation in this regard.

With best regards,

Professor Ran Kornowski
Chairman, Working Group on Interventional Cardiology

Professor Haim Danenberg
Secretary, Working Group on Interventional Cardiology

Dr Amit Segev
Treasurer, Working Group on Interventional Cardiology
Coordinator, ACSIS-PCI 2010 Survey

Message from the Society of Internal Medicine

An important and unique feature of the ACSIS 2010 "Decade" Survey was the inclusion in the survey of the Departments of Internal Medicine. The main reason was the fact that a large number of patients with acute coronary syndromes are hospitalized in the internal medicine wards. Following diagnosis, some of these patients are transferred to cardiology departments, however, a substantial number remain and are treated for the whole duration of their hospitalization in the internal medicine wards.

When the survey was planned we assumed that for many of these patients the clinical picture of the event at the time of diagnosis was not the "classical" one nor one that was clear-cut; that a large proportion of the patients were elderly and/or suffered from chronic diseases with their accompanying complications; and that in many cases the coronary event occurred during hospitalization for a different problem.

The aims of the survey in the internal medicine departments were: to estimate the number of patients with ACS who are treated in these departments; to examine our basic assumptions with respect to the circumstances and characteristics of the event; and to assess the extent to which the patients are treated and evaluated according to accepted guidelines. It has never been and is not our intention now, to compare the treatment in internal medicine departments with that administered in the cardiology departments.

In order to achieve an appropriate representation of all internal medicine departments in hospitals in all parts of the country, all the medical centers participated in the survey, and approximately half of the internal medicine wards in each medical center were included.

I would like to thank the investigators in each of the internal medicine departments, who included this assignment in their innumerable daily tasks. Many thanks to the Working Groups on Intensive Cardiac Care and on Interventional Cardiology for their collaboration, and to the ACSIS coordinating center of the Israel Society for the Prevention of Heart Attacks (ISPHA) for their support and organization.

Personal thanks to Prof. Shlomo Behar, to Dr Shlomi Matetzky and especially to Prof. Shmuel Gottlieb, for their vision, their support and the joint planning of the survey.

Dr. Dror Dicker
Chairman
Israel Society of Internal Medicine

Dr. Avishay Elis
Secretary
Israel Society of Internal Medicine

Participating centers

Afula - Central Hae'mek; **Ashkelon** - Barzilai; **Be'er Ya'aqov** - Assaf Harofeh; **Be'er Sheva** - Soroka; **Eilat** - Josephtal; **Hadera** - Hillel Yaffe; **Haifa** - B'nei-Zion, Rambam, Carmel; **Holon** - Wolfson; **Jerusalem** - Bikur Holim, Sha'arei Zedek, Hadassah Mount Scopus, Hadassah Ein Kerem; **Kfar Saba** - Meir; **Nahariyah** - Western Galilee; **Nazareth** - EMMS Hospital, Holy Family; **Netanya** - Laniado; **Petah Tikva** - Rabin Beilinson, Rabin Golda, **Ramat Gan** - Sheba; **Rehovot** - Kaplan; **Tel Aviv** - Sourasky; **Tiberias** - Poriah; **Zefat** - Rebecca Sieff

Foreword

This booklet is the sixth in a series of publications which describe and analyze the results of the biennial National ACS Israeli Surveys. The current survey reported on here (ACSIS 2010) was conducted by the Working Groups on Intensive Cardiac Care and on Interventional Cardiology of the Israel Heart Society and the Israel Medical Association, with the support and collaboration of the Israel Center for Disease Control, Ministry of Health. The conducting of the study, data management and analysis were carried out at the coordinating center of the Israel Society for the Prevention of Heart Attacks (ISPHA). The booklet was prepared by the Israel Center for Disease Control, in collaboration with ISPHA and the study team.

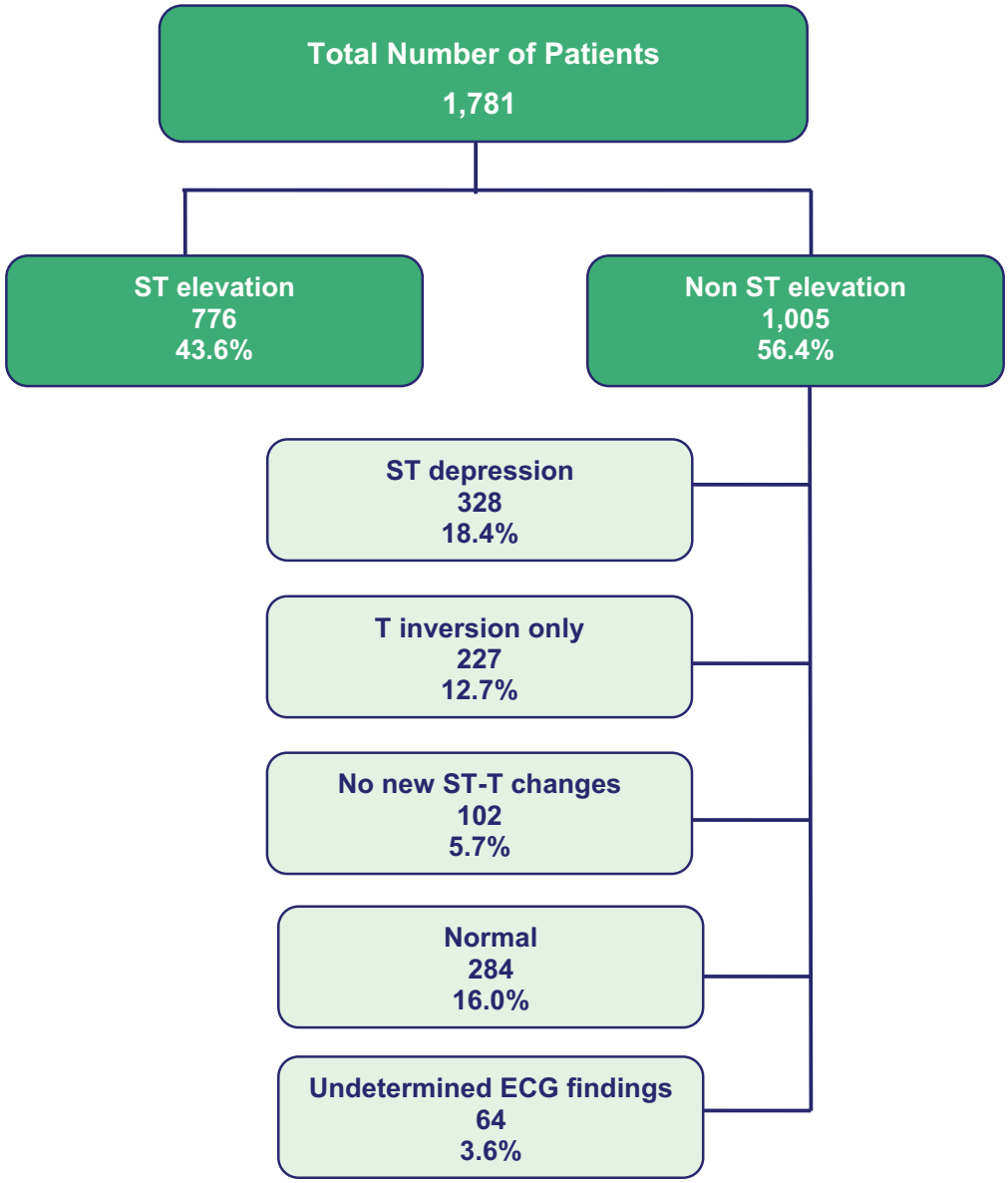
The data in this publication relate to all patients with ACS who were hospitalized in cardiology departments and intensive coronary care units in 26 medical centers operating in Israel, during a two-month period, March-April, 2010. The first chapter presents data comparing characteristics, care and outcome of patients who presented with ST elevation with patients presenting without ST elevation. The second chapter presents an analysis of trends with regard to selected findings of national ACSIS surveys conducted between 2000 and 2010. The third chapter presents specific data on coronary angiography and PCI during hospitalization. The fourth chapter presents data on non-ACS patients hospitalized in intensive coronary care units; and the final chapter presents data on ACS patients hospitalized in 37 representative internal medicine wards in hospitals throughout Israel.

Chapter 1: Acute Coronary Syndrome in Cardiology

1.1 Distribution of Patients with ACS by ECG on Admission

A slightly larger proportion of patients with ACS presented with non-ST elevation (56.4%) than with ST elevation (43.6%). 18.4% presented with ST depression, 12.7% had T-wave inversion only, 5.7% demonstrated no new ST-T changes, 16% presented with normal ECG, and 3.6% had undetermined ECG findings.

Figure 1.1: Distribution of Patients with ACS by ECG on Admission



1.2 Demographic Characteristics

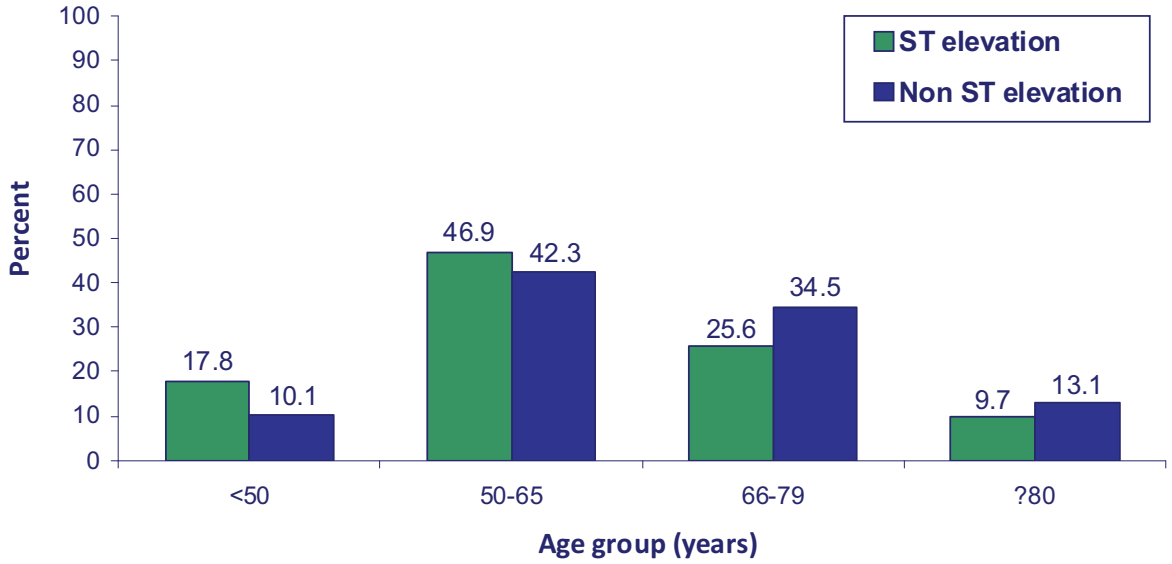
1.2.1 Age Distribution by ECG on Admission

Patients with ST elevation were younger (mean age: 61.6) than those with non-ST elevation (mean age: 65.2), and the age distribution of patients with ST elevation indicated a greater proportion of younger patients (64.7% were aged ≤65 years) than that of patients with non-ST elevation (52.4% aged ≤65 years).

Table 1.1: Age Distribution by ECG on Admission

Age group (years)	ST ↑ (N=776)		Non ST ↑ (N=1,005)		Total (N=1,781)		p
	n	%	n	%	n	%	
< 50	138	17.8	101	10.1	239	13.4	<.0001
50-65	364	46.9	425	42.3	789	44.3	
66-79	199	25.6	347	34.5	546	30.7	
≥ 80	75	9.7	132	13.1	207	11.6	
Mean age ± SD	61.6± 12.95		65.2±12.21		63.6±12.66		<.0001

Figure 1.2: Age Distribution by ECG on Admission



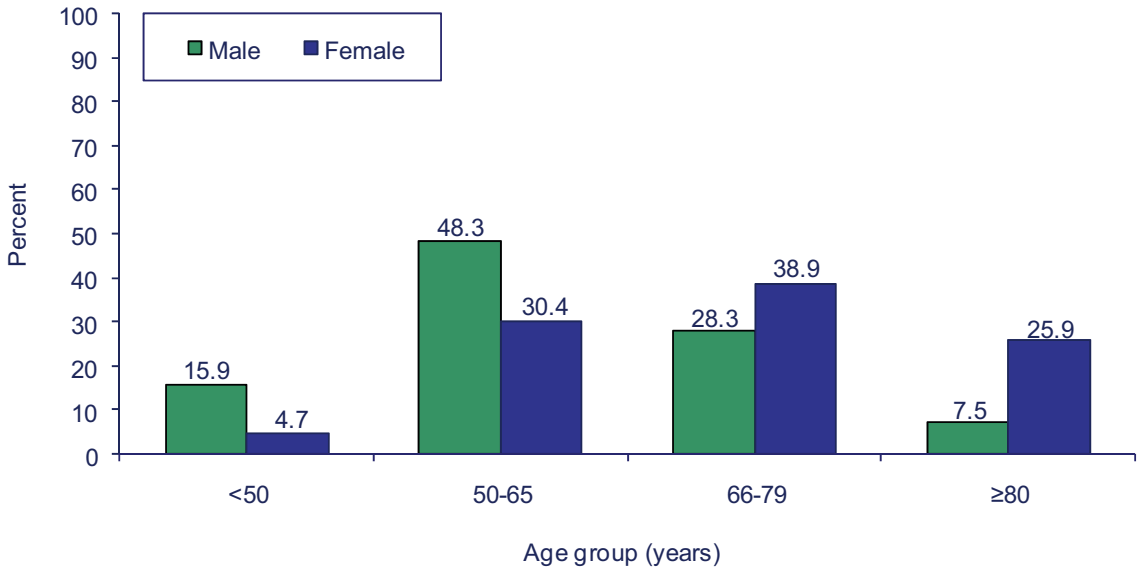
1.2.2 Age Distribution by Sex

The age distribution of male patients was significantly different from that of female patients. The majority of men (64.2%) were in the younger age groups (≤65) and only 7.5% were aged 80 or above. 16% of men were less than 50 years old. By contrast, the majority of women (64.8%) were in the older age groups ≥65), and 26% were aged 80 or above. Only 4.8% of women were under age 50.

Table 1.2: Age Distribution by Sex

Age group* (years)	Men (N=1380)		Women (N=401)		Total (N=1,781)		p
	n	%	n	%	n	%	
< 50	220	15.9	19	4.8	239	13.4	<.0001
50-65	667	48.3	122	30.4	789	44.3	
66-79	390	28.3	156	38.9	546	30.7	
≥ 80	103	7.5	104	25.9	207	11.6	
Mean age ± SD	61.6±12.08		70.5±12.21		63.6±12.66		<.0001

Figure 1.3: Age Distribution by Sex



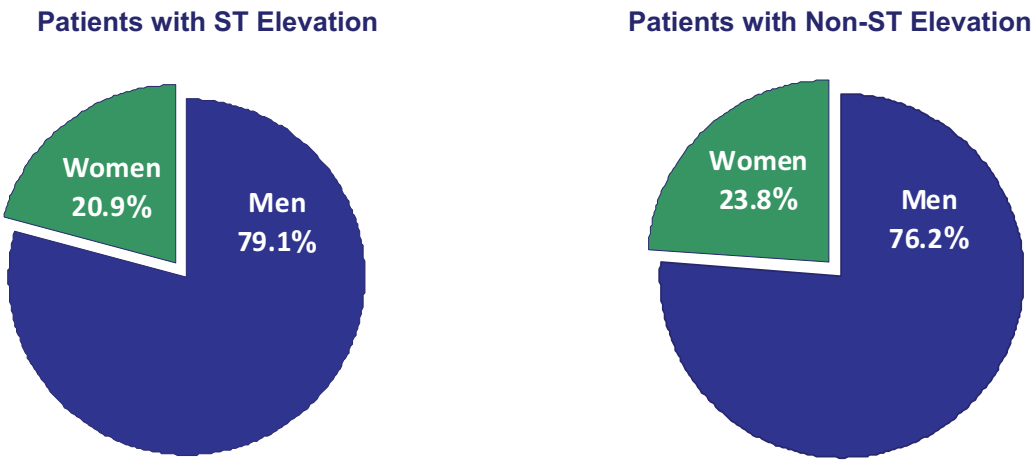
1.2.2 Sex Distribution

In both types of ACS, men predominated, however the proportion of women was slightly larger in patients with non-ST elevation (23.8%) than in those with ST elevation (20.9%).

Table 1.3: Sex Distribution

Sex	ST ↑ (N=776)		Non ST ↑ (N=1,005)		Total (N=1,781)		p
	n	%	n	%	n	%	
Men	614	79.1	766	76.2	1380	77.5	.146
Women	162	20.9	239	23.8	401	22.5	

Figure 1.4: Sex Distribution



1.3 Cardiovascular History and Risk Factors

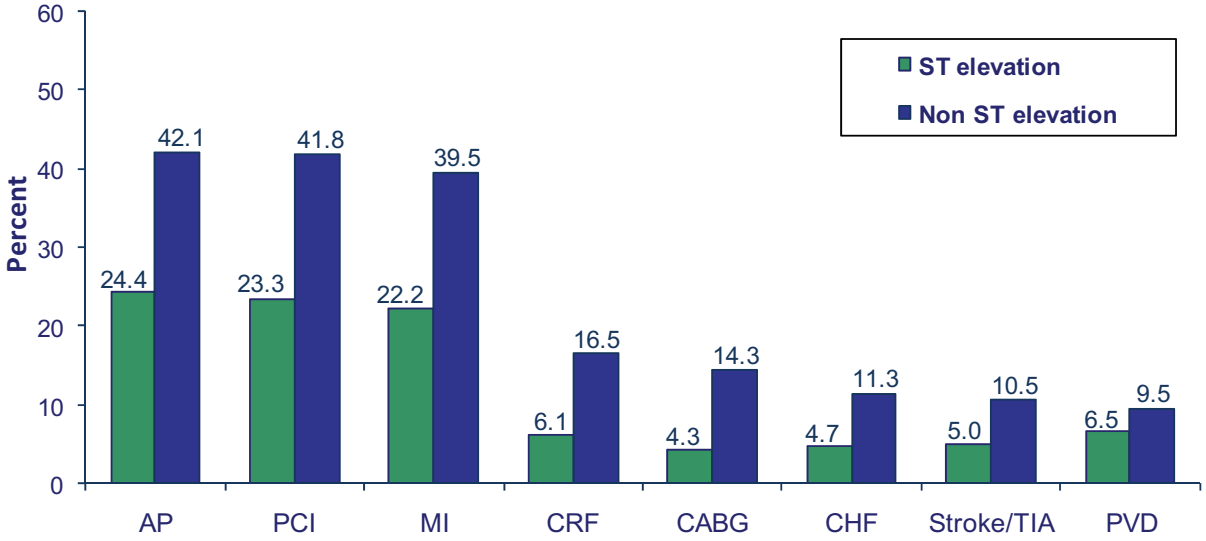
1.3.1 Cardiovascular History

A history of MI, AP, chronic heart failure, stroke, PVD and chronic renal failure was significantly more frequent among patients with non-ST elevation. Similarly, more patients with non-ST elevation had undergone PCI or CABG prior to hospitalization.

Table 1.4: Cardiovascular History

CV history	ST ↑ (N=776) %	Non ST ↑ (N=1,005) %	Total (N=1,781) %	p
MI	22.2	39.5	31.9	<.0001
AP	24.4	42.1	34.4	<.0001
PCI	23.3	41.8	33.7	<.0001
CABG	4.3	14.3	9.9	<.0001
CHF	4.7	11.3	8.4	<.0001
Stroke/TIA	5.0	10.5	8.1	<.0001
Chronic renal failure (CRF)	6.1	16.5	12.0	.021
PVD	6.5	9.5	8.2	<.0001

Figure 1.5: Cardiovascular History



1.3.2 Risk Factors

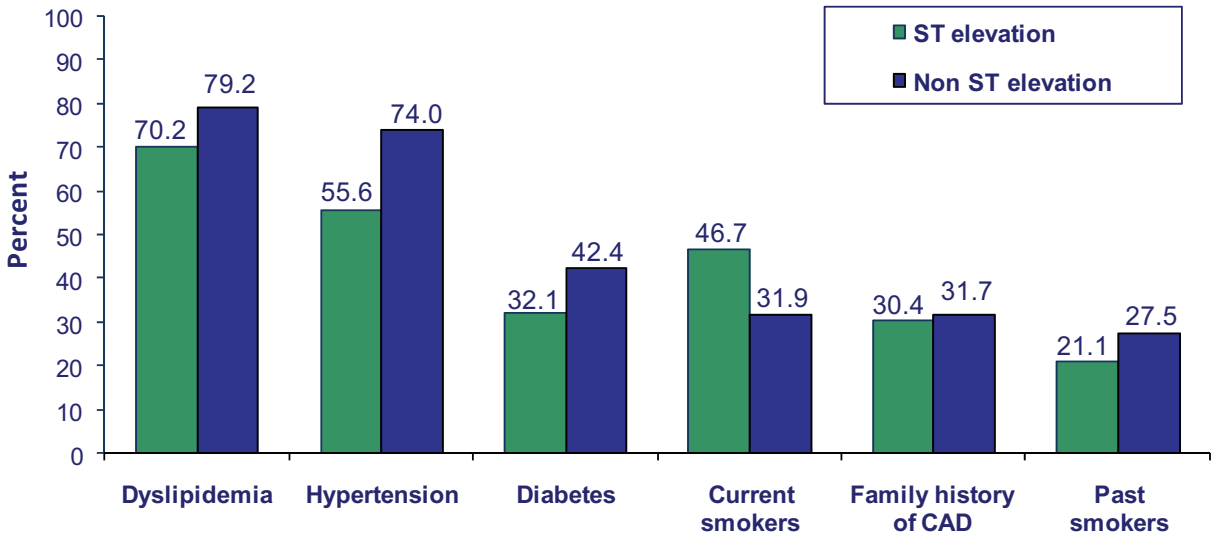
Except for current smoking, which was more prevalent among patients with ST elevation, risk factors were generally more prevalent among patients with non-ST elevation. The rates of newly diagnosed hypertension, diabetes and dyslipidemia were higher among those with ST elevation. No difference was found in the prevalence of family history of CAD.

Table 1.5: Risk Factors

Risk factors	ST ↑ (N=776) %	Non ST ↑ (N=1,005) %	Total (N=1,781) %	p
Hypertension	55.6	74.0	66.0	<.0001
% Newly diagnosed*	5.9	3.2	4.2	
Diabetes	32.1	42.4	37.9	<.0001
% Newly diagnosed*	6.1	1.7	3.3	
Dyslipidemia	70.2	79.2	75.3	<.0001
% Newly diagnosed*	11.4	3.9	7.0	
Current smokers	46.7	31.9	38.4	<.0001
Past smokers	21.1	27.5	24.7	.002
Family history of CAD	30.4	31.7	31.1	.574

* Newly diagnosed expressed as percentage of total patients with specific risk factor

Figure 1.6: Risk Factors



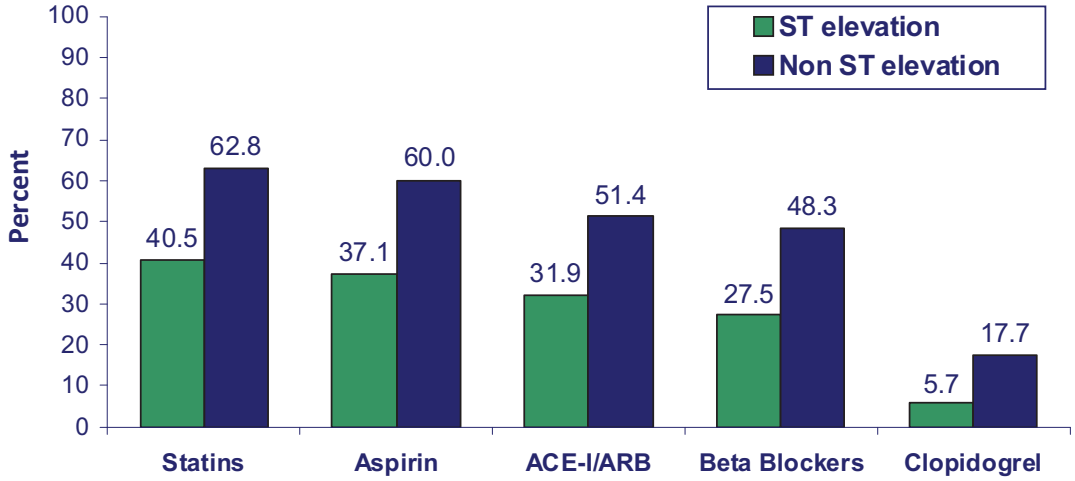
1.4 Prior Chronic Treatment

60% of patients with non-ST elevation and 37.1% of those with ST elevation were being treated with aspirin before hospitalization. Other drugs in common use were ACE Inhibitors and ARB's, beta-blockers, lipid-lowering drugs (primarily statins), hypoglycemic drugs, diuretics, calcium channel blockers and PPI, all of which were in use more frequently among patients with non-ST elevation. 17.7% of patients with non-ST elevation and 5.7% of those with ST elevation were being treated with clopidogrel.

Table 1.6: Prior Chronic Treatment

Prior chronic treatment	ST ↑ (N=776) %	Non ST ↑ (N=1,005) %	Total (N=1,781) %	p
Aspirin	37.1	60.0	50.0	<.0001
Clopidogrel	5.7	17.7	12.5	<.0001
Anticoagulants	2.2	4.2	3.3	.02
ACE inhibitor	26.7	41.0	34.8	<.0001
ARB	5.6	11.1	8.7	<.0001
ACE-I/ARB	31.9	51.4	42.9	<.0001
Aldosterone receptor blockers	2.2	3.4	2.9	.132
Beta blockers	27.5	48.3	39.3	<.0001
Digoxin	0.6	0.7	0.7	.892
Diuretics	10.3	24.8	18.5	<.0001
Insulin	5.7	10.0	8.1	.0008
Hypoglycemic drugs (Oral)	18.2	27.3	23.3	<.0001
LLD	41.0	63.9	53.9	<.0001
Statins	40.5	62.8	53.1	<.0001
Fibrate	2.6	5.6	4.3	.0018
Ezetimibe	0.9	2.0	1.5	.062
Calcium channel blockers	13.9	25.7	20.6	<.0001
Nitrates	4.8	10.2	7.9	<.0001
PPI	12.7	19.6	16.6	.0001
H2 Blockers	4.3	8.0	6.4	.0015
Other drugs	31.7	43.5	38.3	<.0001

Figure 1.7: Prior Chronic Treatment



1.5 Transportation, Pre-Admission and Admission Information

1.5.1 Mode of Transportation by ECG on Admission

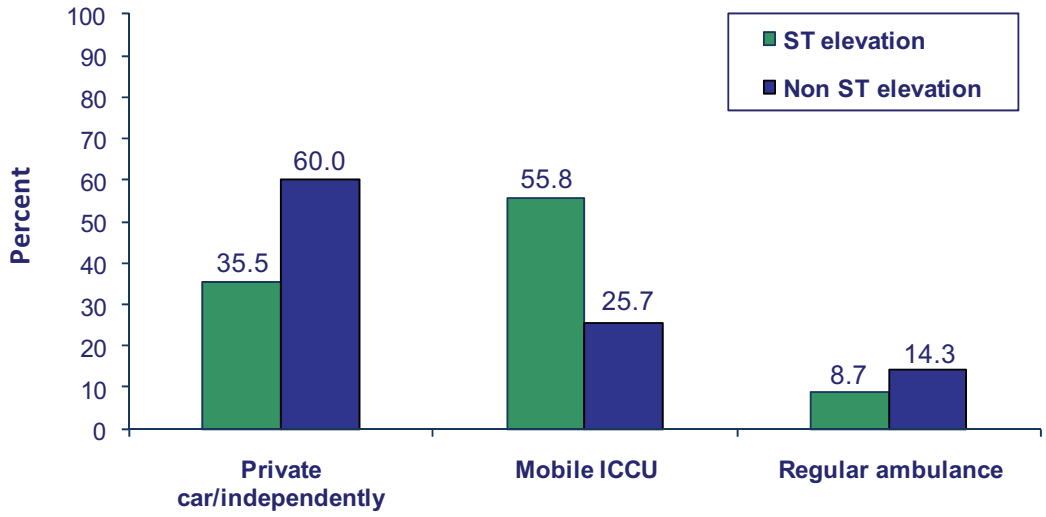
Close to 50% of all patients arrived at the hospital by means of private transportation. Patients with ST elevation were more frequently transported to hospital with mobile CCU, and patients with non-ST elevation arrived more frequently by means of private transportation.

Table 1.7: Mode of Transportation by ECG on Admission

Transport to hospital*	ST ↑ (N=711**)		Non ST ↑ (N=890**)		Total (N=1,601**)	
	N	%	N	%	N	%
Mobile ICCU	397	55.8	229	25.7	626	39.1
Regular ambulance	62	8.7	127	14.3	189	11.8
Private car/ independently	252	35.5	534	60.0	786	49.1

* p<.0001
** excludes in-patients

Figure 1.8: Mode of Transportation by ECG on Admission



1.5.2 Mode of Transportation by Sex

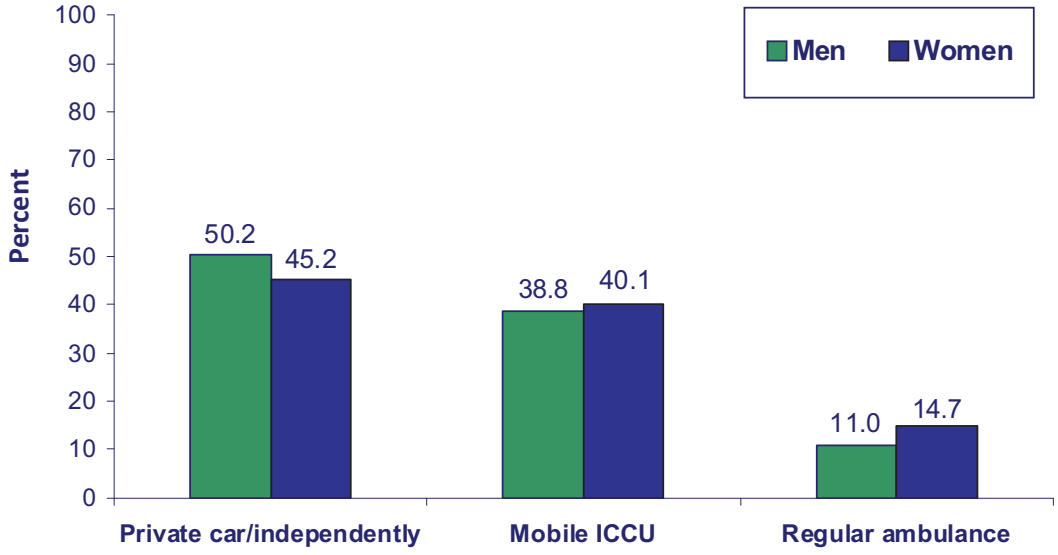
Just over half of all male patients and 45.1% of women patients reached the hospital by private transportation. Approximately 40% of patients, both men and women, arrived by means of mobile CCU units.

Table 1.8: Mode of Transportation by Sex

Transport to hospital*	Men (N=1247**)		Women (N=354**)		Total** (N=1601**)	
	N	%	N	%	N	%
Mobile ICCU	484	38.8	142	40.1	626	39.1
Regular ambulance	137	11.0	52	14.7	189	11.8
Private car/ independently	626	50.2	160	45.2	786	49.1

* p =.094
** excludes in-patients

Figure 1.9: Mode of Transportation by sex



1.5.3 Patient Location on Onset

The most frequent location at the time of ACS onset was a private residence (77.5% of all patients). Patients with non-ST elevation were somewhat more likely to experience onset of ACS at a private residence, and patients with ST elevation were slightly more likely to experience onset at work or in a public place.

Table 1.9: Location on Onset

Location*	ST ↑ (N=765**) (%)	Non ST ↑ (N=954**) (%)	Total (N=1,719**) (%)
Private residence	75.0	79.5	77.5
Public place	10.6	8.9	9.7
Medical facility	4.8	5.9	5.4
Work place	8.3	4.6	6.2
Other	1.3	1.2	1.2

* difference in location on onset of ACS, ST elevation vs non-ST elevation, p=0.016

**missing data for 62 patients

1.5.4 Ward of First Arrival

The ward of first arrival for 95.5% of patients with non-ST elevation and 70% of those with ST elevation was the ER. Patients with ST elevation were more likely to be taken directly to the CCU or the catheterization laboratory than patients without ST elevation.

Table 1.10: Ward of First Arrival by ECG on Admission

First arrival*	ST ↑ (N=770**) (%)	Non ST ↑ (N=984**) (%)	Total (N=1,754**) (%)
ER	70.4	95.5	84.5
CCU	20.4	4.0	11.2
Catheterization laboratory	9.2	0.5	4.3

* difference in ward of first arrival, ST elevation vs. non-ST elevation, p<0.0001
** excludes in-patients

1.5.5 Ward of First Arrival by Sex

For the great majority of both male patients (83.9%) and female patients (86.5%), the ward of first arrival was the Emergency Room. For the remainder of patients, men were slightly more likely than women to be taken directly to the CCU or the Catheterization laboratory.

Table 1.11: Ward of First Arrival by Sex

First arrival*	Men (N=1363)	Women (N=391)	Total (N=1754)
ER	83.9	86.5	84.5
CCU	11.6	9.7	11.2
Catheterization laboratory	4.5	3.8	4.3

*difference in ward of first arrival, men vs. women, not significant, p=0.48

1.5.6 First Ward of Hospitalization

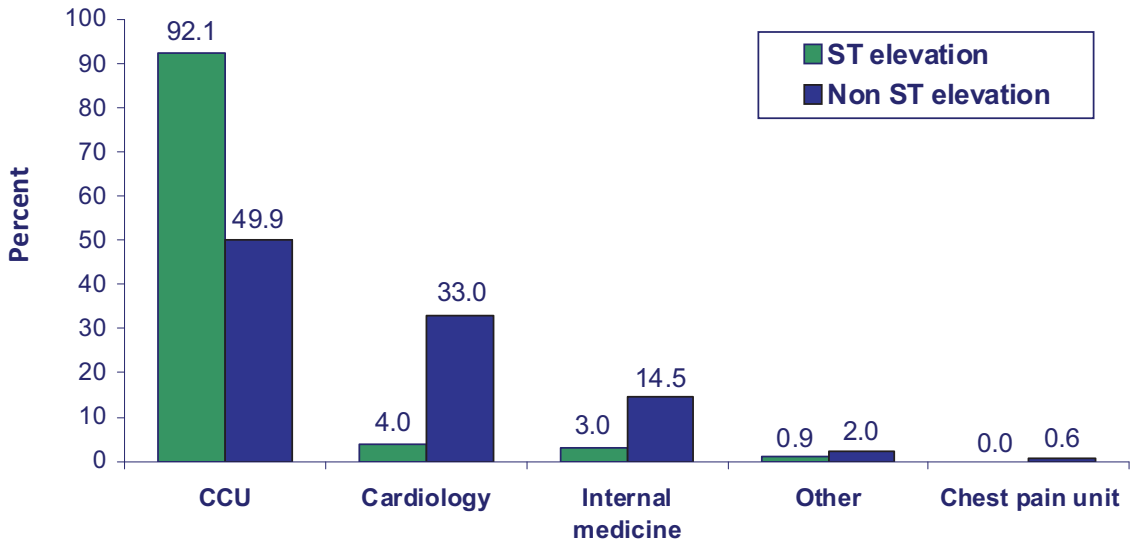
As expected, the overwhelming majority of patients presenting with ST elevation were hospitalized in the CCU (92%). 50% of patients presenting with non-ST elevation were admitted to CCU, one third were admitted to Cardiology wards, and a further 14.5% were first admitted to Internal Medicine Departments and thereafter transferred to Cardiac wards within 24 hours.

Table 1.12: First Ward of Hospitalization

First ward of hospitalization*	ST ↑ (N=776) (%)	Non ST ↑ (N=1,005) (%)	Total (N=1,781) (%)
CCU	92.1	49.9	68.2
Cardiology	4.0	33.0	20.4
Chest pain unit	0.0	0.6	0.4
Internal medicine	3.0	14.5	9.5
Other	0.9	2.0	1.5

*difference in first ward of hospitalization, ST elevation vs. non-ST elevation, p<0.0001

Figure 1.10: First Ward of Hospitalization



1.5.7 Time from Symptom Onset to Admission, by ECG on Admission

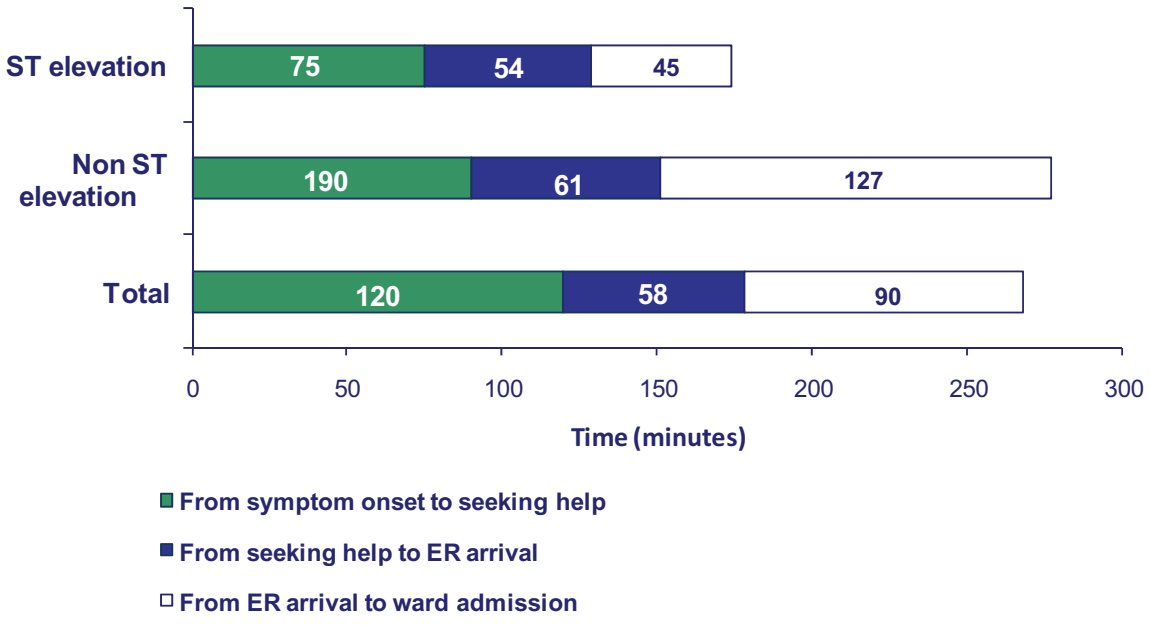
Patients with ST elevation sought help more rapidly in comparison with their counterparts with non-ST elevation. In addition, the time elapsing between ER arrival and first ward admission was almost three times longer for patients with non-ST elevation, in comparison with patients presenting with ST elevation.

Table 1.13: Time (minutes) from Symptom Onset to Admission, by ECG on Admission

Time elapsing from:	Length of time (minutes)									
	ST ↑			Non ST ↑			Total			p
	N	Median	(25%-75%)	N	Median	(25%-75%)	N*	Median	(25-75%)	
Onset to seeking help	657	75	(30-227)	676	190	(60-960)	1333	120	(40-480)	<.0001
Seeking help to ER arrival*	531	54	(35-85)	547	61	(41-120)	1078	58	(38-100)	<.0001
ER arrival to first ward of admission	773	45	(10-105)	914	127	(70-225)	1647	90	(35-171)	<.0001
Onset to ER arrival	698	128	(76-291)	751	270	(113-1157)	1449	180	(90-588)	<.0001
Onset to first ward of admission	691	210	(119-385)	743	524	(262-1360)	1434	330	(160-780)	<.0001

* excludes patients whose first medical contact was in ER

Figure 1.11: Median Length of Time from Symptom Onset to Admission (minutes)



1.5.8 Time from Symptom Onset to Admission, by Sex

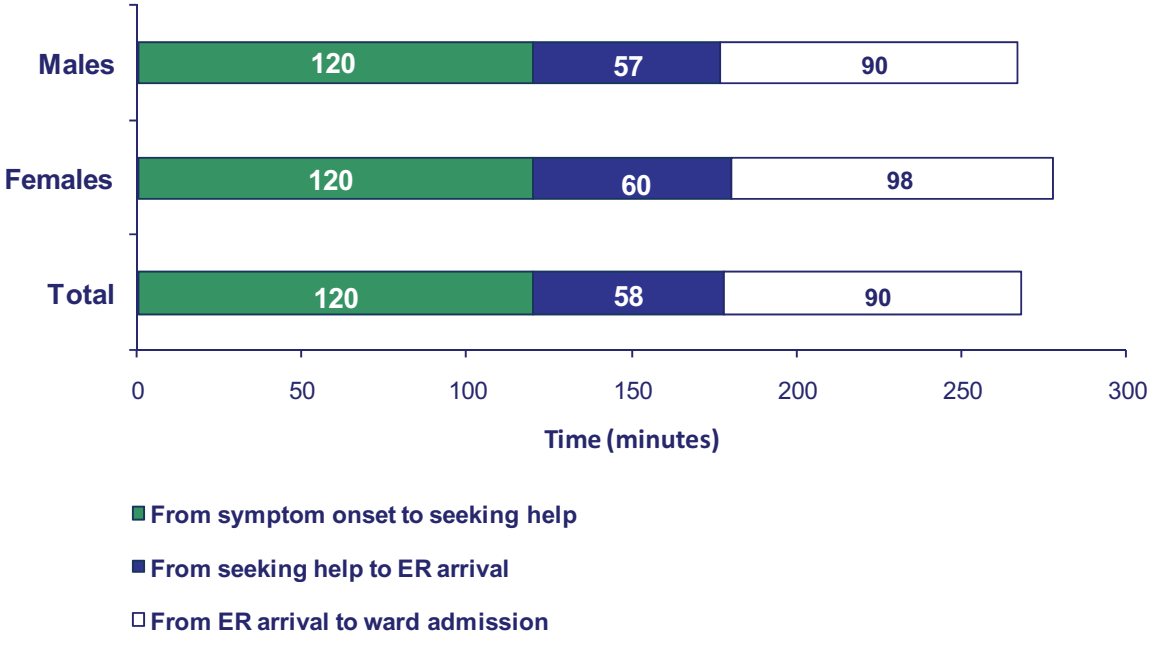
The median time interval elapsing between symptom onset and help-seeking was identical for women and for men with ACS (120 minutes). The median time elapsing between arrival at the emergency room and admission to the ward was slightly longer for women (98 minutes) than for men (90 minutes). For 25% of women, this time delay was 3 hours.

Table 1.14: Time (minutes) from Symptom Onset to Admission by Sex

Time elapsing from:	Length of time (minutes)									
	Men			Women			Total			p
	N	Median	(25%-75%)	N	Median	(25%-75%)	N	Median	(25%-75%)	
Onset to seeking help	1053	120	(40-480)	280	120	(39-477)	1333	120	(40-480)	.630
Seeking help to ER arrival*	814	57	(38-97)	264	60	(40-115)	1078	58	(38-100)	.210
ER arrival to first ward of admission	1283	90	(31-168)	364	98	(50-180)	1647	90	(35-171)	.036
Onset to ER arrival	1149	180	(90-585)	300	190	(99-615)	1449	180	(90-588)	.453
Onset to first ward of admission	1141	317	(150-767)	293	350	(199-810)	1434	330	(160-780)	.081

* excludes patients whose first contact was in ER

Figure 1.12: Median Length of Time from Symptom Onset to Admission (minutes)



1.5.9 First Medical Contact

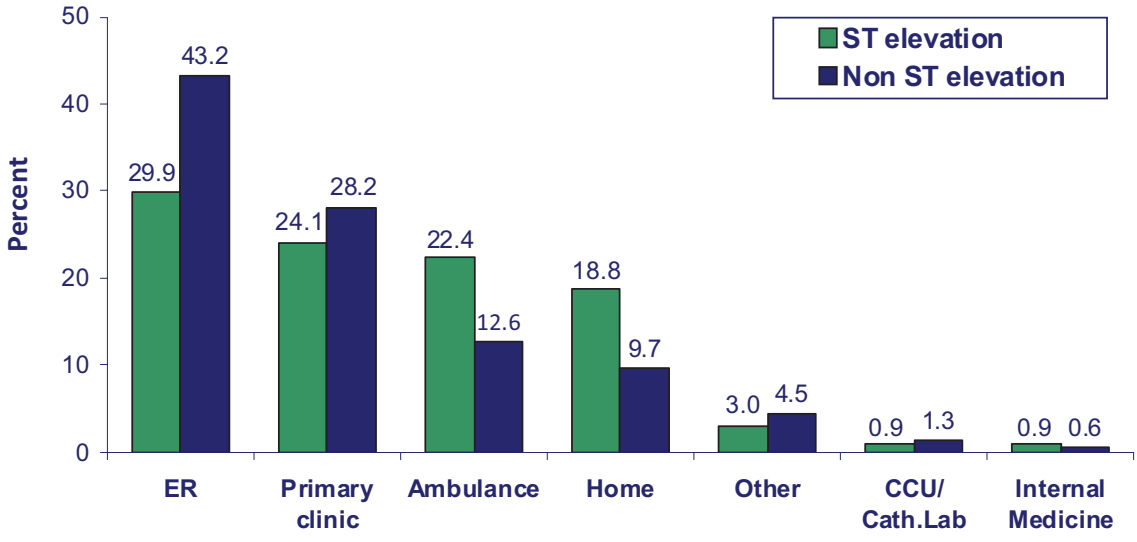
Almost 30% of patients with ST elevation experienced their first medical contact in the ER, 24.1% in a primary clinic setting, 22.4% in the ambulance, and 19% at home. Patients with non-ST elevation were most likely to experience their first medical contact in the ER (43.2%) or in a primary clinic setting (28.2%).

Table 1.15: First Medical Contact

First medical contact*	ST ↑ (N=776) (%)	Non ST ↑ (N=1,005) (%)	Total (N=1,781) (%)
Home	18.8	9.6	13.7
Primary Clinic	24.1	28.2	26.4
Ambulance	22.4	12.6	16.9
ER	29.9	43.2	37.4
CCU/ Catheterization laboratory	0.9	1.3	1.1
Internal Medicine	0.9	0.6	0.7
Other	3.0	4.5	3.8

*difference in location of first medical contact, ST elevation vs. non-ST elevation, p<0.0001

Figure 1.13: First Medical Contact



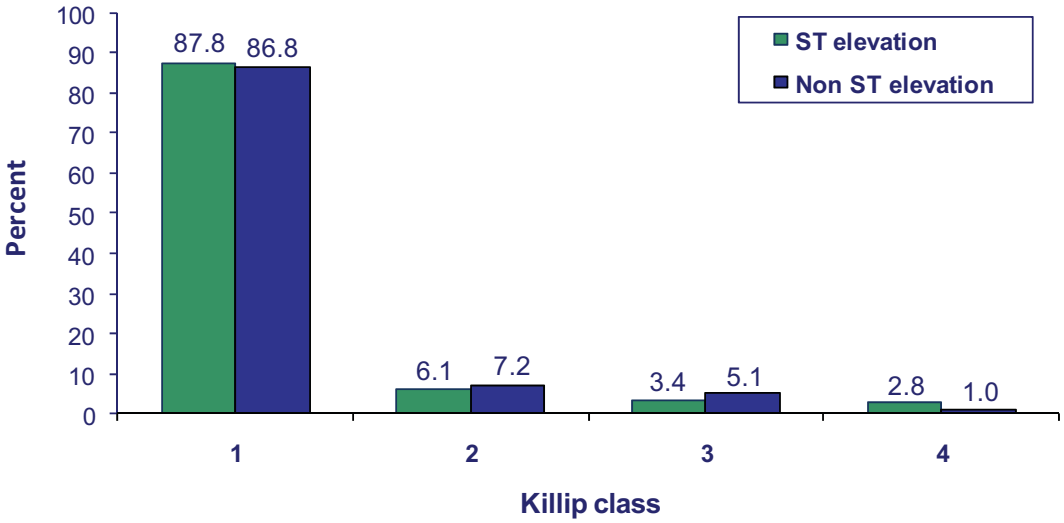
1.5.10 Presenting Symptoms and Killip Class

Typical angina was rather more frequent in patients presenting with ST elevation (89.2% of patients) than in patients with non-ST elevation. Atypical chest pain and dyspnea were relatively more frequent in patients with non-ST elevation. Killip Class on admission was similar in the two groups. The large majority of patients in both groups were admitted with Killip Class 1.

Table 1.16: Presenting Symptoms at First Medical Contact

Symptoms	ST ↑ (N=776) (%)	Non ST ↑ (N=1,005) (%)	Total (N=1,781) (%)	p
Typical angina	89.2	82.4	85.3	<.0001
Atypical chest pain	4.0	9.2	6.9	<.0001
Syncope/Aborted SCD	6.4	3.0	4.5	.0004
Arrhythmia	5.5	4.0	4.7	.121
Dyspnea	18.3	27.1	23.2	<.0001
Other	9.1	8.9	9.0	.904

Figure 1.14: Killip Class on Admission



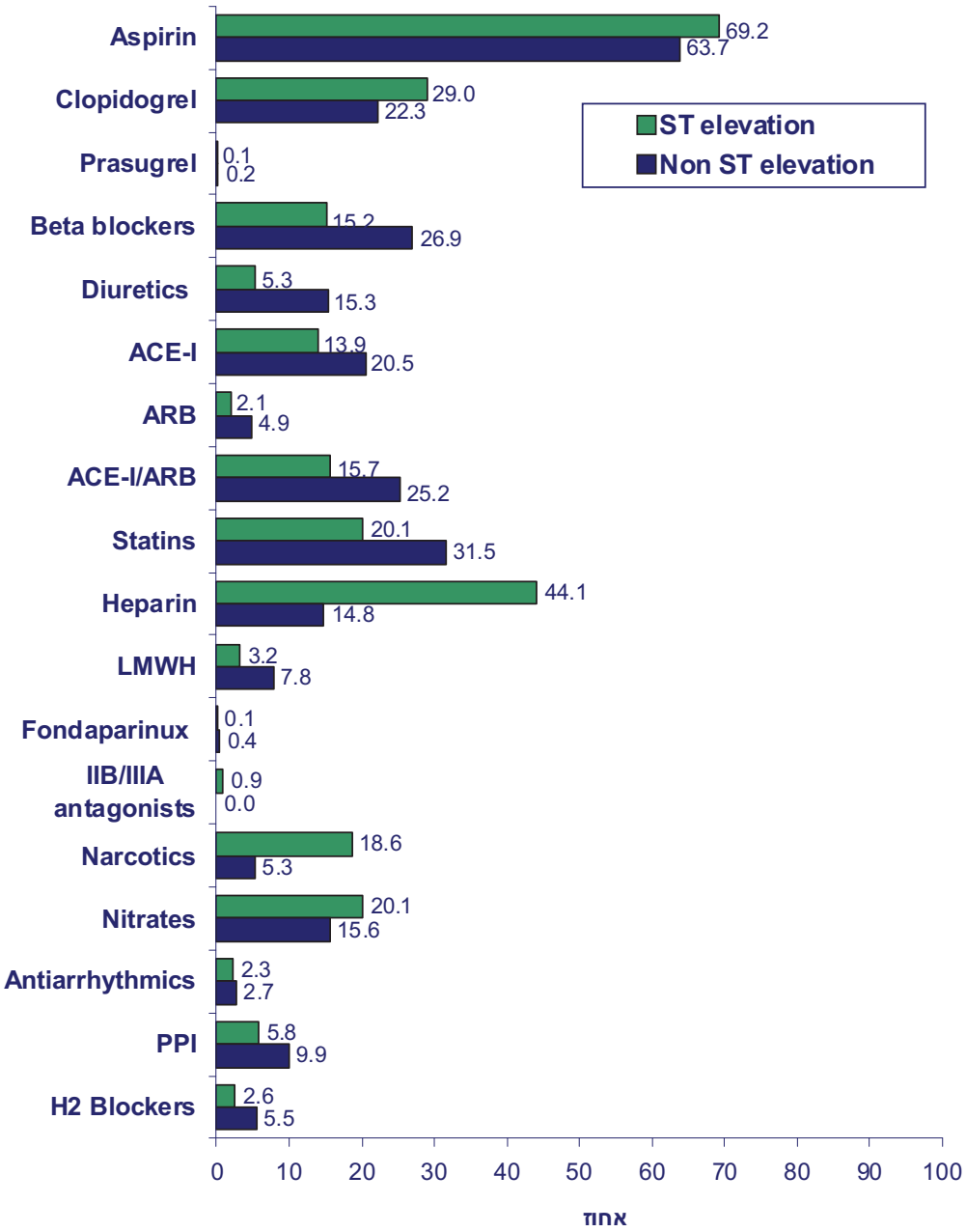
1.5.11 Treatment at First Contact

At first medical contact, patients with ST elevation were more likely than those without ST elevation to receive aspirin, clopidogrel, unfractionated or regular heparin, narcotics and nitrates than patients with non-ST elevation. Those with non-ST elevation were more likely to receive beta blockers, diuretics, fractionated heparin, statins, ACE-I/ARB, PPI and H2 blockers.

Table 1.17: Treatment at First Medical Contact

Medication	ST ↑ (N=776) (%)	Non ST ↑ (N=1,005) (%)	Total (N=1,781) (%)	p
Aspirin	69.2	63.7	66.1	.015
Clopidogrel	29.0	22.3	25.2	.001
Prasugrel	0.1	0.2	0.2	1.00
Beta blockers	15.2	26.9	21.8	<.0001
Diuretics	5.3	15.3	11.0	<.0001
ACE-I	13.9	20.5	17.6	.0003
ARB	2.1	4.9	3.6	.0016
ACE-I/ARB	15.7	25.2	21.1	<.0001
Statins	20.1	31.5	26.5	<.0001
Heparin (unfractionated/regular)	44.1	14.8	27.6	<.0001
LMW heparin (fractionated)	3.2	7.8	5.8	<.0001
Fondaparinux	0.1	0.4	0.3	.395
IIB/IIIA antagonists	0.9	0.0	0.4	.003
Narcotics	18.6	5.3	11.1	<.0001
Nitrates	20.1	15.6	17.6	.0138
Antiarrhythmics	2.3	2.7	2.5	.625
PPI	5.8	9.9	8.1	.0017
H2 Blockers	2.6	5.5	4.2	.0025

Figure 1.15: Treatment at First Medical Contact

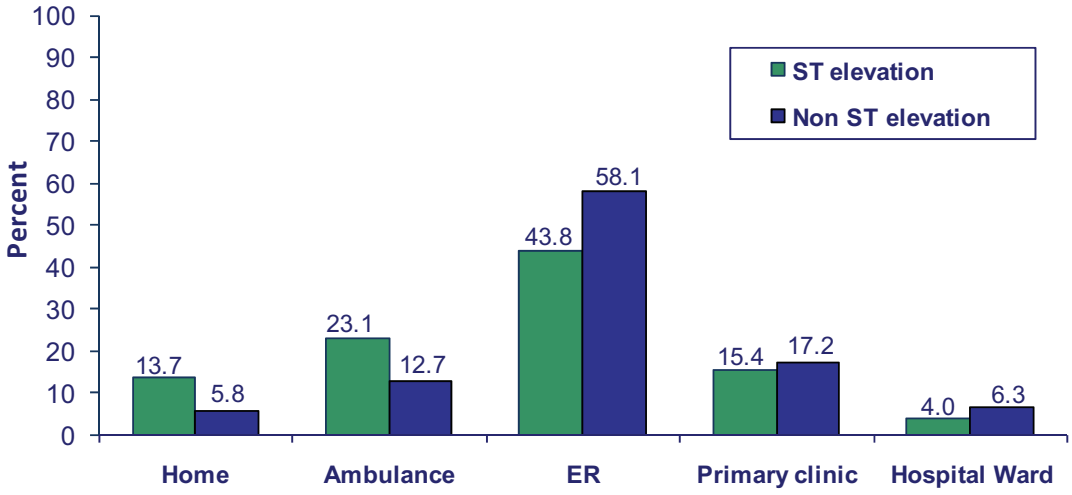


1.6 First Recorded ECG

1.6.1 Location of First ECG Recording

For close to 60% of patients presenting with non-ST elevation and 44% of patients presenting with ST elevation, the initial ECG was performed in the ER. With respect to the remaining patients, 23% of those with ST elevation and 13% of those with non-ST elevation had their first ECG measurement in the ambulance, 15.4% and 17.2%, respectively, in a primary clinic, and 13.7% and 5.8%, respectively, at home.

Figure 1.16: Location of First ECG Recording



1.6.2 First ECG Rhythm

Over 90% of patients, both with and without ST elevation, presented with a normal sinus rhythm. 2.5% of patients with ST elevation and 5.5% of those without ST elevation, presented with atrial fibrillation.

Table 1.18: First ECG Rhythm

Rhythm*	ST ↑ (N=776) (%)	Non ST ↑ (N=1,005) (%)	Total (N=1,781) (%)
NSR	92.8	90.7	91.6
AF	2.5	5.5	4.2
SVT	0.1	0.4	0.3
VT/VF	1.2	0.6	0.8
II/III AV Block	2.5	0.4	1.3
Other	1.0	2.5	1.9

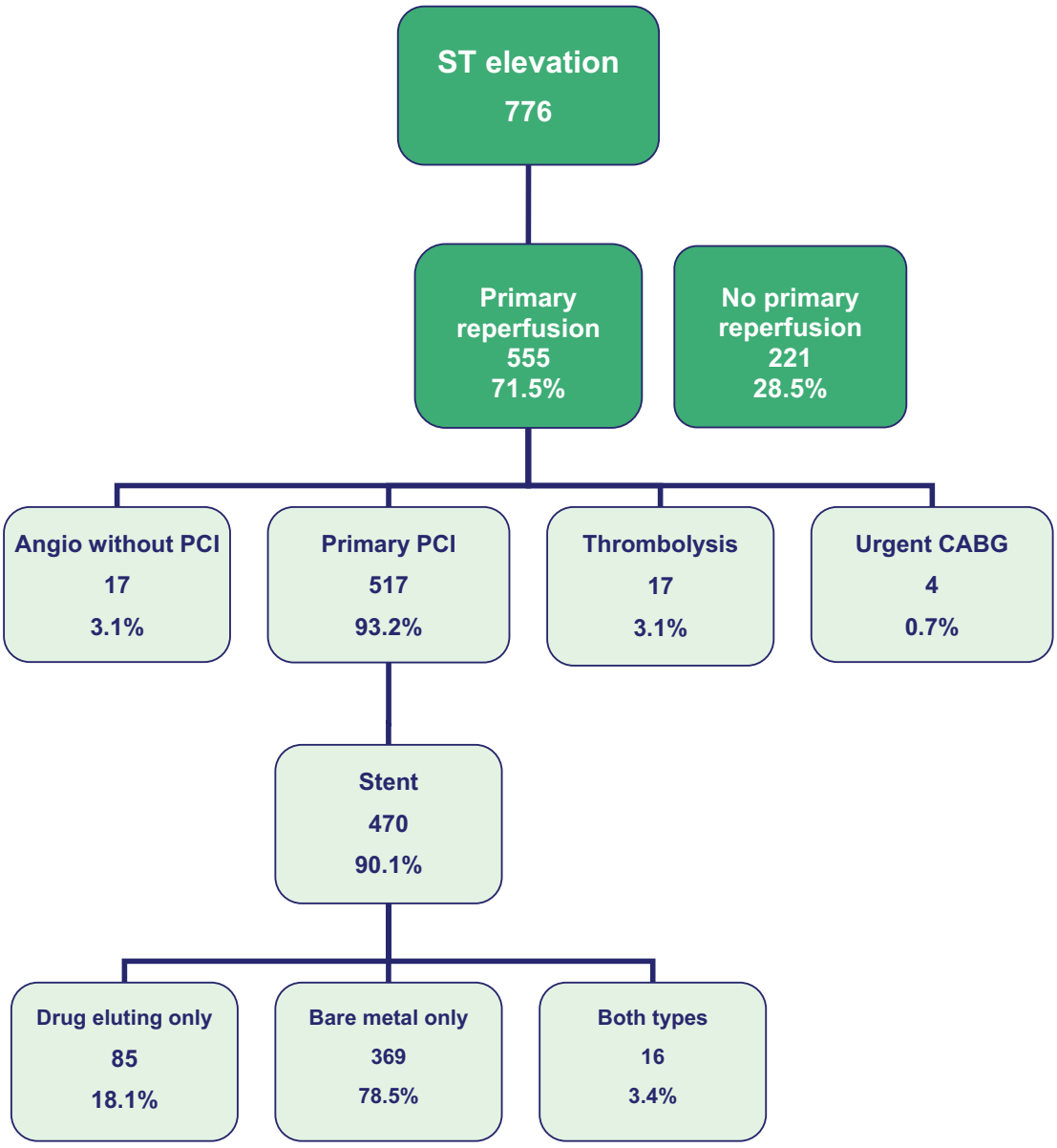
*difference in first ECG rhythm, ST elevation vs. non-ST elevation, p<0.0001

1.7 Primary Reperfusion Therapy in Patients with ST Elevation

1.7.1 Primary Reperfusion

Close to three-quarters (71.5%) of patients with ST elevation underwent primary reperfusion within 12 hours from onset of symptoms, mainly primary PCI. In 90% of these cases, stents were deployed, mainly bare metal stents (78.5%).

Figure 1.16: Primary Reperfusion in Patients with ST Elevation



1.7.2 Use of drugs and protective devices during Primary PCI

98% of patients received clopidogrel during primary PCI, over half received IIb/IIIa antagonists, and angiomax in 10% of cases. Protective/aspiration devices were used in 37.5% of cases.

Table 1.19: Drugs and Protective Devices during Primary PCI

Drugs and protective devices	N= 517	
	N	%
Clopidogrel	507	98.1
IIb/IIIa antagonists	297	57.4
Angiomax	51	9.9
Protective/Aspiration devices	222	45.8

1.7.3 TIMI Grade Flow of IRA

In 61% of cases, a TIMI flow grade of zero was observed on first injection to the infarct-related artery. Following revascularization, a TIMI grade flow of 3 was achieved in the majority of patients (91.6%).

Table 1.20: TIMI Grade Flow of IRA before and after revascularization

TIMI grade flow	Before PPCI (%) N=515*	After PPCI (%) N=510**
0	60.8	3.5
1	11.8	0.6
2	14.4	4.3
3	13.0	91.6

* missing data in 2 patients

**missing data in 7 patients

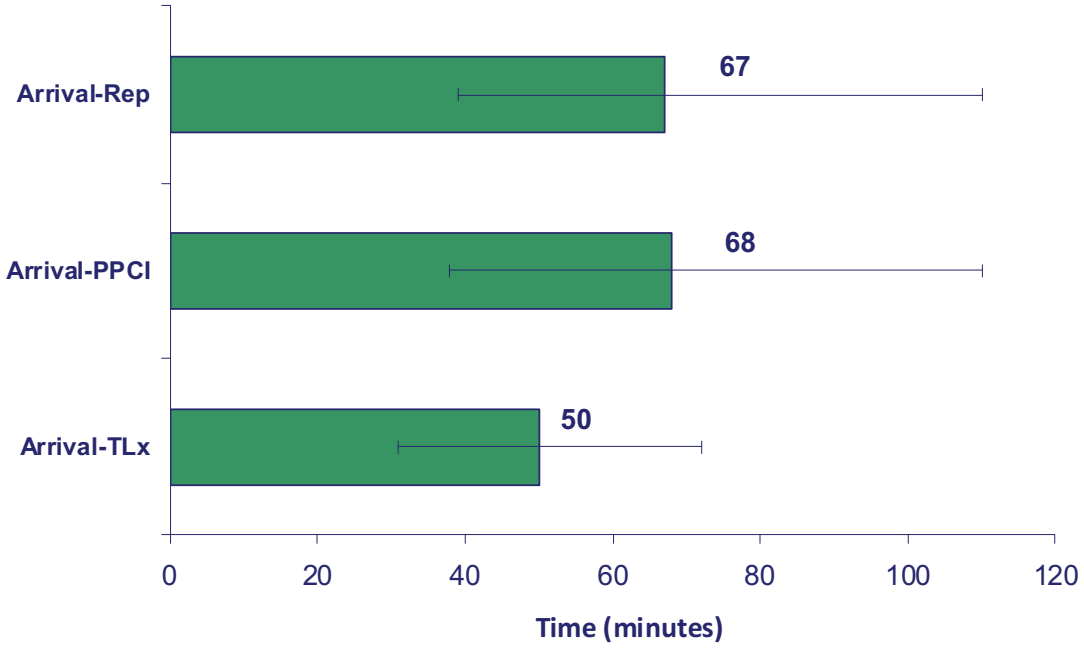
1.7.4 Length of Time from Arrival to Primary Reperfusion

The median time from arrival to primary reperfusion was a little more than one hour. The median length of time for thrombolysis was shorter (50 minutes) than for primary PCI (68 minutes).

Table 1.21: Length of Time (minutes) from Arrival to Reperfusion

	Length of time for ST ↑ patients (minutes)	
	Median	(25%-75%)
From arrival to reperfusion (n=511)	67	40-110
From arrival to thrombolysis (n=15)	50	31-72
From arrival to primary PCI (n=477)	68	40-110

Figure 1.17: Length of Time from Arrival to Reperfusion (Median, 25%-75%)



1.7.5 Length of Time from Arrival to Primary Reperfusion, by Sex

The time delay from arrival to primary reperfusion was longer in women, but did not reach statistical significance.

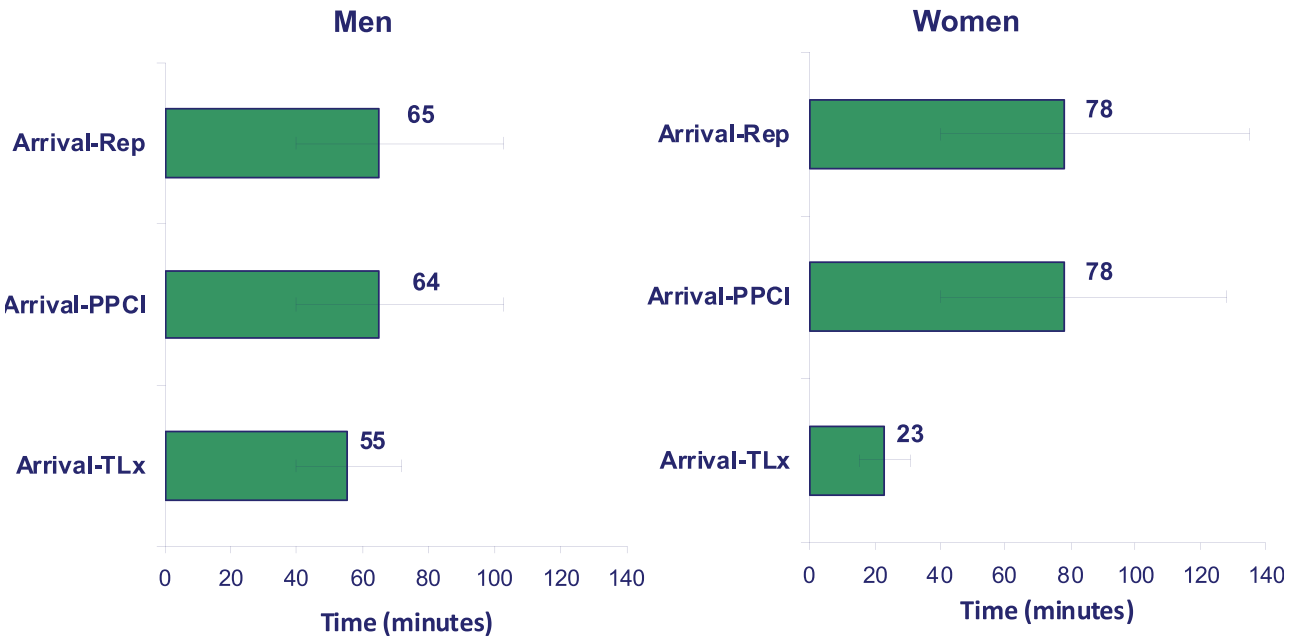
Table 1.22: Length of Time (minutes) from Arrival to Reperfusion, by Sex

Men	Length of time for ST ↑ patients (minutes)	
	Median	(25%-75%)
From arrival to reperfusion (n=418)	65	40-103
From arrival to thrombolysis (n=13)	55	40-72
From arrival to primary PCI (n=389)	64	40-103

Women	Length of time for ST ↑ patients (minutes)	
	Median	(25%-75%)
From arrival to reperfusion* (n=93)	78	40-135
From arrival to thrombolysis** (n=2)	23	15-31
From arrival to primary PCI*** (n=88)	78	40-128

p= *0.21, **0.17, ***0.26, for differences between men and women, respectively

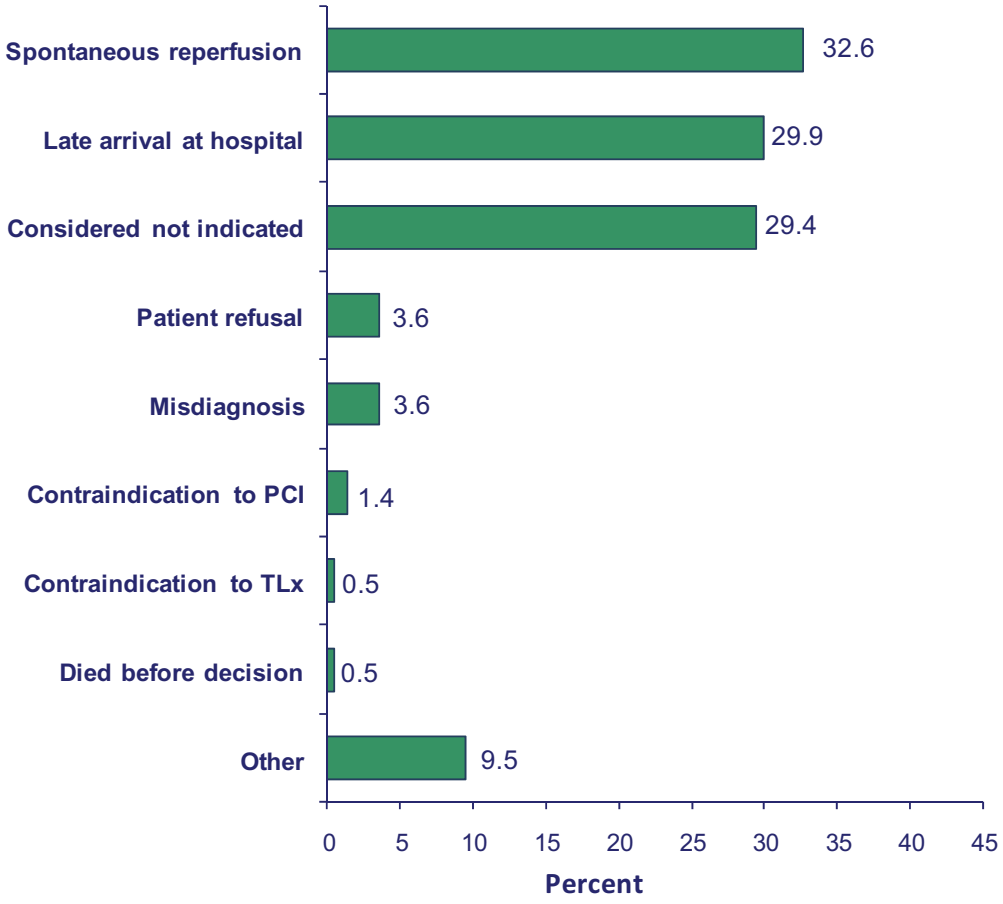
Figure 1.18: Length of Time from Arrival to Reperfusion by sex (Median, 25%-75%)



1.7.6 Reasons for Not Performing Primary Reperfusion

28.5% of patients presenting with ST elevation did not receive primary reperfusion therapy. In approximately one-third of the cases (32.6%) the reason was spontaneous reperfusion, in 29.9% the reason was late arrival at the hospital, and in 29.4% of cases primary reperfusion was considered not indicated.

Figure 1.19: Reasons for Not Performing Primary Reperfusion

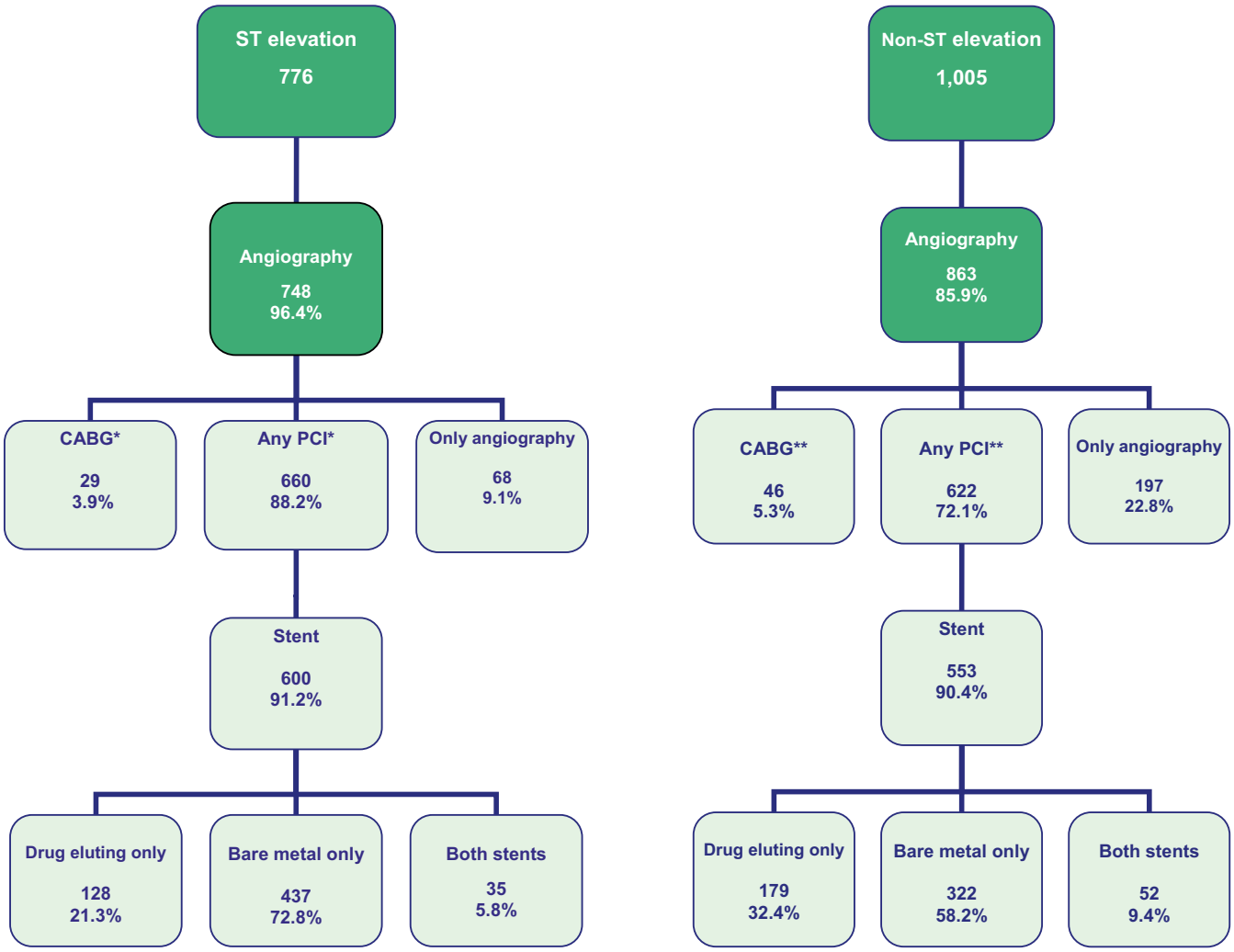


1.8 Coronary Interventions and Procedures during Hospitalization

1.8.1 Coronary Angiography and Interventions

Patients with ST elevation were more likely than those with non-ST elevation to undergo coronary angiography and PCI. CABG during hospitalization was performed more frequently in patients with non-ST elevation. Stents were deployed with equal frequency in both groups, however drug-eluting stents were used more frequently in patients without ST elevation than in patients with ST elevation.

Figure 1.20: In-Hospital Cardiac Interventions and Procedures



* 9 patients underwent both CABG and PCI; ** 2 patients underwent both CABG and PCI.

1.8.2 Other Procedures

90.7% of patients with ST elevation and 71.4% of those with non-ST elevation underwent echocardiography. Patients with ST elevation were more likely to receive CPR, DC shock, ventilation, IA balloon and temporary pacemakers than those with non-ST elevation. Patients with non-ST elevation were more likely to undergo stress test/SPECT than those with ST elevation.

Table 1.24: Other Procedures

Procedure	ST ↑ (N=776) (%)	Non ST ↑ (N=1,005) (%)	Total (N=1,781) (%)	p
ECHO	90.7	71.4	79.8	<.0001
DC shock	7.0	1.5	3.9	<.0001
Resuscitation (CPR)	5.2	2.3	3.5	.001
Ventilation	6.3	3.9	4.9	.019
IA Balloon	7.2	2.5	4.6	<.0001
EPS	0.1	0.5	0.3	.241
Stress test/SPECT	0.3	3.8	2.2	<.0001
Permanent pacemaker	0.5	0.5	0.5	1.000
Temporary pacemaker	2.7	0.9	1.7	.003
Hypothermia for anoxic brain damage	0.5	0.2	0.3	.414

1.9 Ejection Fraction

Ejection fraction (EF) was determined in 83% of patients with ST elevation and in 71% of those with non-ST elevation. EF was normal in a larger proportion of patients with non-ST elevation (56.2%) than in patients with ST elevation (38.1%). 30% of patients with ST elevation and 21% of patients with non-ST elevation presented with EF <40%.

Table 1.25: Ejection Fraction

Ejection fraction	ST ↑ (N=776) (%)	Non ST ↑ (N=1,005) (%)	Total (N=1,781) (%)	p
EF determined	83.2	70.9	76.2	<.0001
Normal (≥50%)	38.1	56.2	47.6	<.0001
Mild (40-49%)	31.9	23.0	27.2	
Moderate (30-39%)	23.0	12.9	17.7	
Severe (<30%)	7.0	7.9	7.5	

1.10 In-Hospital Complications

Hemodynamic complications, ventricular fibrillation and atrial fibrillation were more frequent in patients with ST elevation.

Table 1.26: In-Hospital Complications

Complications	ST ↑ (N=776) (%)	Non ST ↑ (N=1,005) (%)	Total (N=1,781) (%)	p
CHF mild-moderate (Killip 2)	8.8	7.1	7.8	.186
Pulmonary edema (Killip 3)	4.3	5.5	4.9	.241
Cardiogenic shock (Killip 4)	4.9	1.8	3.1	.0002
Hemodynamically significant RVI	2.1	0.5	1.2	.002
Re-MI	1.0	1.1	1.1	.895
Post MI angina /re-ischemia	1.7	2.2	2.0	.439
Sub-acute stent thrombosis	1.3	0.4	0.8	.055
Free wall rupture	0.3	0.0	0.1	.190
Pericarditis	0.6	0.1	0.3	.092
Tamponade	0.4	0.2	0.3	.658
VSD	0.1	0.2	0.2	1.000
Moderate-severe MR	1.3	2.0	1.7	.254
RBBB (new onset)	2.3	1.3	1.7	.101
LBBB (new onset)	0.5	0.5	0.5	1.000
High degree AVB	3.4	1.2	2.1	.002
Sustained VT	2.3	1.1	1.6	.043
Primary VF	4.1	0.6	2.1	<.0001
Secondary VF	1.4	0.5	0.9	.041
AF	6.8	3.8	5.1	.0038
Asystole	2.2	1.7	1.9	.445
TIA	0.0	0.1	0.1	1.000
Stroke	0.6	0.4	0.5	.515
CVA/TIA in hospital	0.6	0.5	0.6	.681
Acute renal failure	6.0	6.2	6.1	.836
Major bleeding	2.4	2.4	2.4	.934
Infection	6.7	7.0	6.9	.827

1.11 In-Hospital Medical Treatment

Unfractionated heparin, clopidogrel and IIb/IIIa antagonists were more frequently used in patients with ST elevation. LMW heparin was more frequently used among patients with no ST elevation. Both groups of patients were equally treated with aspirin, beta-blockers, and lipid-lowering drugs.

Table 1.27: In-Hospital Medical Treatment

Treatment	ST ↑ (N=776) (%)	Non ST ↑ (N=1,005) (%)	Total (N=1,781) (%)	P value
Aspirin	98.5	97.3	97.8	.103
Warfarin	4.4	3.7	4.0	.444
Heparin (unfractionated/ regular)	55.7	33.5	43.2	<.0001
LMW heparin (fractionated)	35.6	53.9	45.9	<.0001
Bivalirudin	6.3	2.5	4.2	<.0001
Fondaparinux	3.1	6.8	5.2	.0005
IIb/IIIa antagonists	45.2	11.3	26.1	<.0001
Clopidogrel	97.2	92.5	94.6	<.0001
Prasugrel	0.1	0.1	0.1	.854
ACE-I	77.0	68.1	72.0	<.0001
ARB	5.8	11.0	8.8	.0001
ACE-I/ARB	81.8	78.3	79.8	.070
Beta blockers	82.8	83.9	83.4	.550
IV inotropic agent	6.3	3.0	4.4	.0007
Digoxin	1.5	1.3	1.4	.653
Diuretics	24.1	29.8	27.3	.0079
Aldosterone receptor antagonist	7.0	5.7	6.2	.265
Insulin	16.8	19.7	18.4	.1201
Hypoglycemic drugs (Oral)	10.2	17.2	14.1	<.0001
Lipid lowering drugs	97.3	97.0	97.1	.724
Statins	97.3	96.7	97.0	.484
Fibrate	3.0	6.6	5.0	.0005
Ezetimibe	1.2	1.8	1.5	.280
Calcium channel blockers	11.1	23.7	18.2	<.0001
Nitrates	22.9	24.4	23.7	.458
PPI	25.8	29.2	27.7	.111
H2 Blockers	26.7	23.6	24.9	.135

1.12 Duration of Hospitalization

The median length of stay in CCU was similar in both groups. Median length of total hospital stay was longer in patients with ST elevation (5 days) than in those with non-ST elevation (4 days).

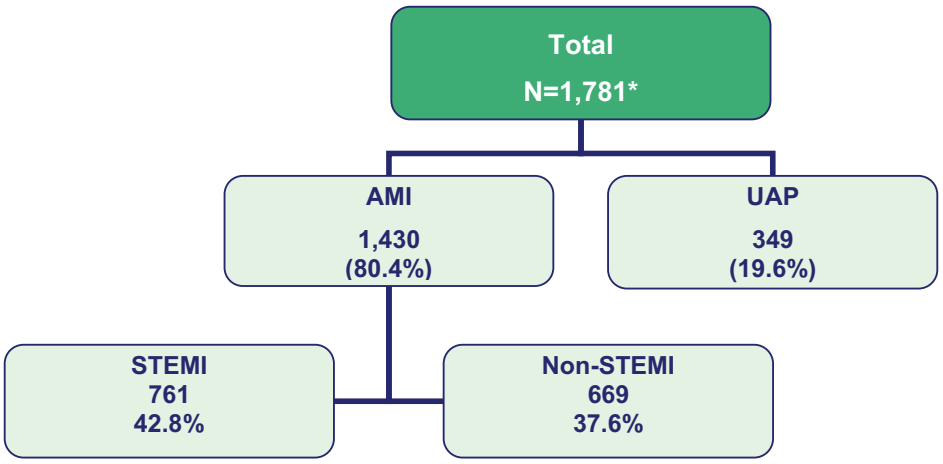
Table 1.28: Length of Stay in CCU and Total Hospital Stay

Length of stay (days)	ST ↑ (N=776)		Non ST ↑ (N=1,005)		Total (N=1,781)		p
	Median	(25%-75%)	Median	(25%-75%)	Median	(25%-75%)	
No. of days in CCU	4.0	(3-5)	4.0	(2-5)	4.0	(3-5)	<.0001
Total days in hospital	5.0	(4-6)	4.0	(3-6)	4.0	(3-6)	<.0001

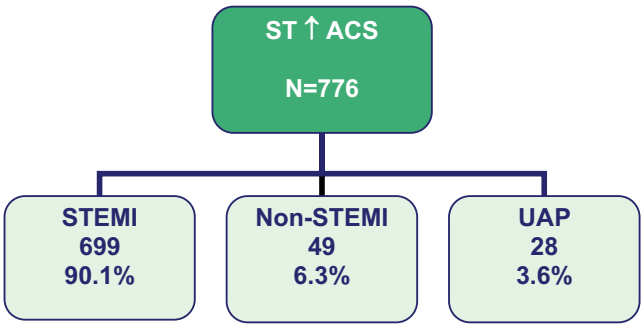
1.13 Discharge Diagnosis

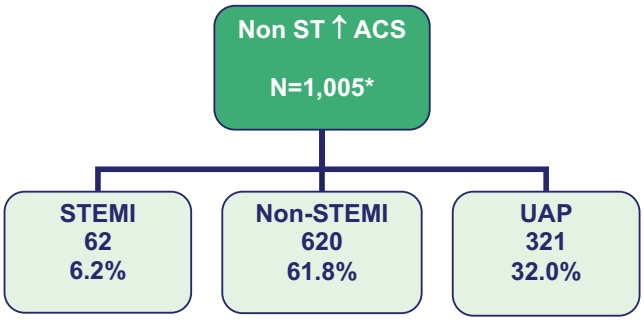
Approximately 80% of patients were discharged with a diagnosis of AMI, and 20% with a diagnosis of UAP. Among patients presenting with ST elevation, 90% were diagnosed on discharge with STEMI. Among patients presenting with non-ST elevation, the most frequent diagnosis on discharge (61.8%) was non-STEMI. A further 32% were diagnosed with UAP, and 6.2% were diagnosed on discharge with STEMI.

Figure 1.21 Discharge Diagnosis



*missing: 2 cases





*missing: 2 cases

1.13.2 Type of MI

A greater proportion of patients with ST elevation (96.4%) than those with non-ST elevation (86.1%) were diagnosed with Type 1 MI, and a greater proportion of patients with non-ST elevation (9.5%) than those with ST elevation were diagnosed with Type 2 MI.

Table 1.29: Type of MI

Type*	ST ↑ (N=747) (%)	Non ST ↑ (N=677) (%)	Total (N=1,424) (%)
1	96.4	86.1	91.5
2	1.8	9.5	5.4
3	--	--	--
4A	0.5	3.7	2.1
4B	1.2	0.4	0.8
5	0.1	0.3	0.2

* difference in type of MI, ST elevation vs. non-ST elevation, p<0.0001

New Universal Definition of MI[1]

Classification	Description
1	Spontaneous MI related to ischemia due to a primary coronary event such as plaque erosion and/or rupture, fissuring or dissection
2	MI secondary to ischemia due to an imbalance of oxygen supply and demand, as from coronary spasm or embolism, anemia, arrhythmias, hypertension or hypotension
3	Sudden unexpected cardiac death, including cardiac arrest, often with symptoms suggesting ischemia with new ST-segment elevation; new left bundle branch block; or pathologic or angiographic evidence of fresh coronary thrombus, in the absence of reliable biomarker findings
4A	MI associated with PCI
4B	MI associated with documented in-stent thrombosis
5	MI associated with CABG surgery

[1] Thygesen K et al. *Circulation* 2007;116(22):2634-53. Epub 2007 Oct 19.

1.13.3 Q-wave/Non Q-wave

Abnormal Q-waves were recorded in 29.6% of patients: in 50.9% of patients with STEMI, in 15.6% of patients with Non STEMI, and in 9.8% of patients with UAP.

Table 1.30: Q wave/non Q-wave by Discharge Diagnosis

Q-waves	STEMI (N=751) (%)	Non STEMI (N=662) (%)	UAP (N= 337) %	Total (N=1,750*) (%)	p
No	49.1	84.4	90.2	70.4	<.0001
Yes	50.9	15.6	9.8	29.6	

*Total missing: 31 cases

1.14 Medical Treatment on Discharge

Clopidogrel and ACE-I/ARB were more often prescribed for patients with ST elevation. Diuretics, insulin, oral hypoglycemics, calcium channel blockers, fibrate and nitrates were prescribed more often for patients with non-ST elevation. All other recommended drugs were similarly given to both groups.

Table 1.31: Medical Treatment on Discharge among Hospital Survivors

Recommended treatment	ST ↑ (N=755) (%)	Non ST ↑ (N=988) (%)	Total (N=1,743) (%)	p
Aspirin	97.1	96.8	96.9	.706
Warfarin	4.9	4.3	4.5	.510
LMW	6.2	6.0	6.1	.815
Clopidogrel	92.7	81.0	86.1	<.0001
Prasugrel	0.4	0.3	0.3	.738
ACE-inhibitors	76.5	68.6	72.0	.0002
ARB	6.6	10.9	9.1	.0019
ACE-I/ARB	82.7	78.8	80.5	.0423
Beta blockers	82.8	81.6	82.1	.494
Digoxin	0.9	1.1	1.0	.705
Amiodarone	3.7	3.5	3.6	.846
Diuretics	16.4	27.0	22.4	<.0001
Aldosterone receptor antagonist	7.0	5.8	6.3	.287
Insulin	8.5	12.8	10.9	.0045
Hypoglycemic drugs	15.1	21.9	18.9	.0003
Lipid lowering drugs	95.8	96.9	96.4	.220
Statins	95.6	96.7	96.2	.261
Fibrate	2.7	7.1	5.2	<.0001
Ezetimibe	1.1	1.9	1.6	.150
Calcium channel blockers	10.1	23.1	17.5	<.0001
Nitrates	3.7	9.0	6.7	<.0001
PPI	24.0	28.1	26.3	.0524
H2 Blockers	25.5	21.7	23.3	.061
Other drugs	35.0	46.2	41.3	<.0001

1.15 Re-Hospitalization within 30 Days of Admission

Re-hospitalization rates for patients with and without ST elevation were similar. Differences in reasons for rehospitalization were not statistically significant.

Table 1.32: Re-Hospitalization* within 30 Days of Admission

	ST ↑ (N=755) (%)	Non ST ↑ (N=988) (%)	Total (N=1,743) (%)	p
Re-hospitalization % (n)	17.3% (119)	18.0% (163)	17.7% (282)	.744
Reason for Re-hospitalization				.097
Scheduled	23.7	32.1	28.6	
Cardiac event driven	54.3	41.4	46.8	
Non-cardiac hospitalization	22.0	26.5	24.6	

* Rehospitalization among hospital survivors

1.16 Mortality and Major Adverse Coronary Events (MACE)

1.16.1 Rates of Mortality and MACE by ECG on Admission

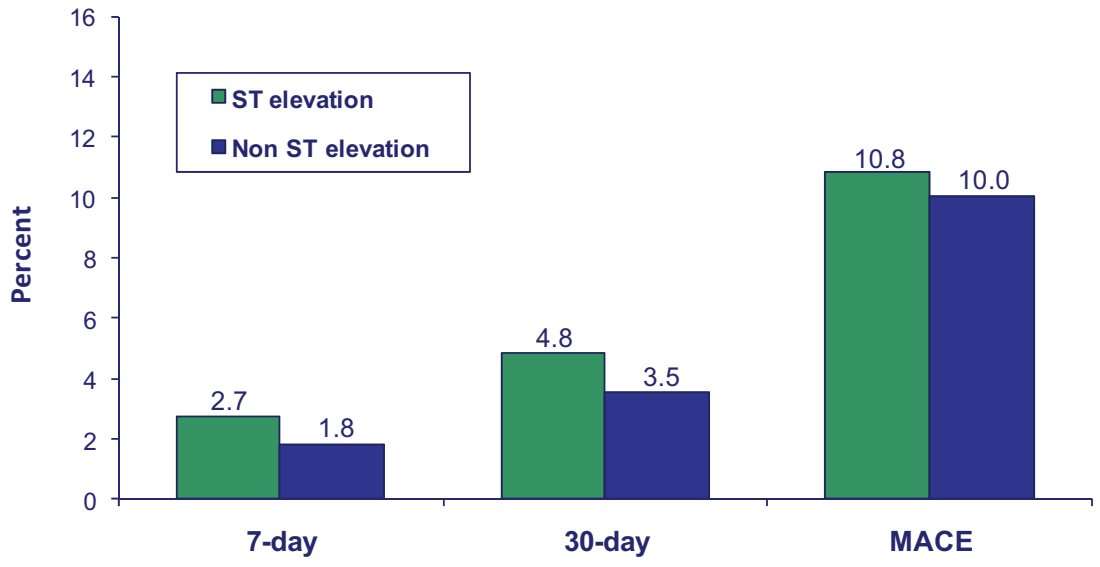
Unadjusted rates of 7-day mortality, 30-day mortality and MACE (Major Adverse Cardiac Events), which included recurrent MI or UAP, recurrent ischemia, stent thrombosis, ischemic stroke, urgent revascularization (follow-up) or death occurring within 30 days from hospitalization) were not significantly different for patients with and without ST elevation.

Table 1.33: Unadjusted Rates of 7-Day Mortality, 30-Day Mortality and MACE

Mortality	ST ↑ (N=776) (%)	Non ST ↑ (N=1,005) (%)	Total (N=1,781) (%)	p
7-day	2.7	1.8	2.2	.188
30-day	4.8	3.5	4.1	.170
MACE*	10.8	10.0	10.4	.595

*definition includes: recurrent MI, recurrent ischemia, stent thrombosis, ischemic stroke, urgent revascularization (follow-up) or death occurring within 30 days from hospitalization.

Figure 1.24: Unadjusted Rates of 7-Day Mortality, 30-Day Mortality and MACE



After adjustment for age and other risk factors, 7-day and 30-day mortality rates were more than twice as high for patients with ST elevation as for those with non-ST elevation. Rates of MACE were 34% higher for patients with ST elevation than those with non-ST elevation, with borderline statistical significance.

Table 1.34: Mortality Rates by ECG on Admission Adjusted for Age and Other Risk Factors

	ST ↑ (N=776) (%)*	Non ST ↑ (N=1005) (%)*	Age-Adjusted OR (95% CI)	OR** (95% CI)
7-day	3.1	1.7	1.91 (1.00-3.65)	2.41 (1.15-5.04)
30-day	5.4	3.2	1.78 (1.09-2.90)	2.44 (1.39-4.28)
MACE* **	11.6	9.6	1.25 (0.92-1.71)	1.34 (0.96-1.87)

* age adjusted
** adjusted for age, gender, past MI, diabetes, hypertension, Killip class≥2, any angiography
*** see definition above

1.16.2 Rates of Mortality and MACE by Sex

Unadjusted 7-day mortality rates were not significantly different for men and women. 30-day mortality rates were almost twice as high for women as for men, and rates of MACE were 1.6 times higher for women than for men. Following adjustment for age and for other risk factors, no significant differences were found between men and women with respect to risk of 7-day mortality, 30-day mortality or MACE.

Table 1.35: Unadjusted Rates of 7-Day Mortality, 30-Day Mortality and MACE, by Sex

Outcome	Men (n=1,380) (%)	Women (n=401) (%)	Total (N=1,781) (%)	p
7-day mortality	1.9	3.3	2.2	.104
30-day mortality	3.4	6.3	4.1	.0119
MACE*	9.2	14.5	10.4	.0024

*see definition above

Table 1.36: Rates of Mortality and MACE by Sex, Adjusted for Age and Other Risk Factors

Outcome	Men (n=1,380) (%)*	Women (n=401) (%)*	Age-Adjusted OR (95% CI) (Women vs Men)	Risk factor Adjusted OR** (95% CI)
7-day mortality	2.4	2.5	0.81 (0.39-1.66)	0.87 (0.40-1.90)
30-day mortality	4.3	4.8	0.89 (0.52-1.52)	0.94 (0.52-1.69)
MACE* **	10.1	13.0	1.19 (0.83-1.69)	1.26 (0.87-1.82)

* age adjusted
** adjusted for age, past MI, diabetes, hypertension, Killip class≥2, any angiography
*** see definition above.

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Chapter 2:
Temporal Trends in Characteristics, Management, and Outcome of Patients with ACS in Cardiology: 2000-2010

2.1 Introduction

In this chapter, we present trends in the characteristics and management of patients with ACS hospitalized in Cardiology Departments and ICCU's in Israel since 2000, and evaluate the impact of these changes on clinical outcome and mortality. The data are derived from the ACSIS biennial national surveys which have been performed since 1992 in all 26 cardiac departments in Israel, by the Working Group of Intensive Cardiac Care of the Israel Heart Society, the Israel Center for Disease Control and the Israel Society for the Prevention of Heart Attacks. In each survey, the study population included all patients with ACS hospitalized during a two-month period (generally February and March).

2.2 Patient Characteristics

The number of patients hospitalized with ACS in Cardiology and Intensive Care Units increased between the ACSIS surveys 2000-2006. In ACSIS 2008 and 2010, there was a 15% decrease in the number of patients compared to 2000-2006. In view of the population increase that occurred in Israel during this period, the relative decline is even greater. The reason for the decrease is multifactorial and deserves further investigation. Over the decade, the proportion of males increased. The mean age of the patients has not changed, however, while the proportion of young patients (<50) and of elderly patients (>75) decreased slightly, and that of middle-aged patients (51-75) increased.

Table 2.1: Patient Characteristics

Year	2000	2002	2004	2006	2008	2010	p for trend
No. of patients	1,794	2,048	2,094	2,075	1,746	1,781	
Sex (%)							
Men	75.0	76.2	74	77.4	79.4	77.5	.002
Women	25	23.8	26.0	22.6	20.6	22.5	
Age (%)							
<50	15.1	13.7	14.3	15.1	14.6	13.4	.039
51-75	62.4	64.5	62.4	64.4	66	66.9	
>75	22.5	21.8	23.3	20.5	19.4	19.7	
Mean age ±SD	63.9±13.2	64.1±13.0	64.2±13.3	63.5±13.1	63.3±13.2	63.6±12.7	.0916

2.3 Cardiovascular History and Risk Factors

Between 2000-2008, an increase was observed in the proportion of patients with ACS who had undergone prior PCI, and this trend stabilized in 2010. The proportion of patients with a prior history of MI and CRF increased, as did the prevalence of other risk factors such as hypertension, diabetes, dyslipidemia, family history of CAD and smoking.

Table 2.2: Cardiovascular History and Risk Factors

	2000 N=1,794 %	2002 N=2,048 %	2004 N=2,094 %	2006 N=2,075 %	2008 N=1,746 %	2010 N=1,781 %	p for trend
CV history							
MI	29.6	27.2	27.7	30.2	30.9	31.9	.0037
AP	40.3	36.6	29.8	42.7	39.0	34.4	.455
PCI	18.7	19.1	21.0	28.0	34.0	33.7	<.0001
CABG	8.8	10.1	11.1	11.3	9.8	9.9	.394
CHF	8.1	7.1	7.4	8.7	8.4	8.4	.172
CVA/TIA	7.2	8.6	8.1	8.8	6.9	8.1	.991
CRF	8.2	8.4	9.6	12.8	12.4	12.0	<.0001
PVD	10.3	9.7	7.0	10.4	8.2	8.2	.043
Risk factors							
Hypertension	48.0	50.4	56.6	60.0	59.2	66.0	<.0001
Diabetes	32.2	31.9	32.4	33.4	37.1	37.9	<.0001
Dyslipidemia	52.0	54.3	49.4	65.8	74.5	75.3	<.0001
Current smokers	35.3	33.3	34.2	38.1	38.9	38.4	.0001
Past smokers	19.3	15.1	12.9	24.1	20.9	24.7	<.0001
Family history of CAD	21.1	18.5	18.6	26.9	27.0	31.1	<.0001

2.4 Admission Information

2.4.1 First Ward of Hospitalization

The proportion of patients who were admitted to directly to Cardiology wards increased in recent years.

Table 2.3: First Ward of Hospitalization

Ward*	2000 N=1,794 %	2002 N=2,048 %	2004 N=2,094 %	2006 N=2,075 %	2008 N=1,746 %	2010 N=1,781 %
Cardiology/CCU	83.4	80.6	81.3	80	89.2	89
Internal Medicine	15.5	17.2	16.4	18.4	10.2	9.5
Other	1.1	2.2	2.3	1.6	0.6	1.5

*p for trend <.0001

2.4.2 ECG on Admission

Between 2000 and 2010, the percentage of patients with ST elevation on admission declined significantly, with a parallel increase in the percentage of patients with non-ST elevation.

Table 2.4: ECG on Admission

ST elevation*	2000 N=1,794 %	2002 N=2,048 %	2004 N=2,094 %	2006 N=2,075 %	2008 N=1,746 %	2010 N=1,781 %
Yes	56.1	49.4	49.0	43.1	43.6	43.6
No	43.9	50.6	51.0	56.9	56.4	56.4

*p for trend<.0001

2.4.3 Killip Class on Admission

The Killip class distribution remained relatively unchanged between 2000-2004. In recent years a greater proportion of patients presented with Killip Class 1. In parallel, the proportion of patients presenting with Killip>2 decreased.

Table 2.5: Killip Class on Admission

Killip class*	2000 N=1,794 %	2002 N=2,048 %	2004 N=2,094 %	2006 N=2,075 %	2008 N=1,746 %	2010 N=1,781 %
1	81.6	79.0	77.9	82.3	87.6	87.2
2	10.4	11.9	13.9	10.5	7.5	6.7
3	5.5	7.3	7.0	5.7	3.9	4.3
4	2.5	1.8	1.2	1.5	1.0	1.8

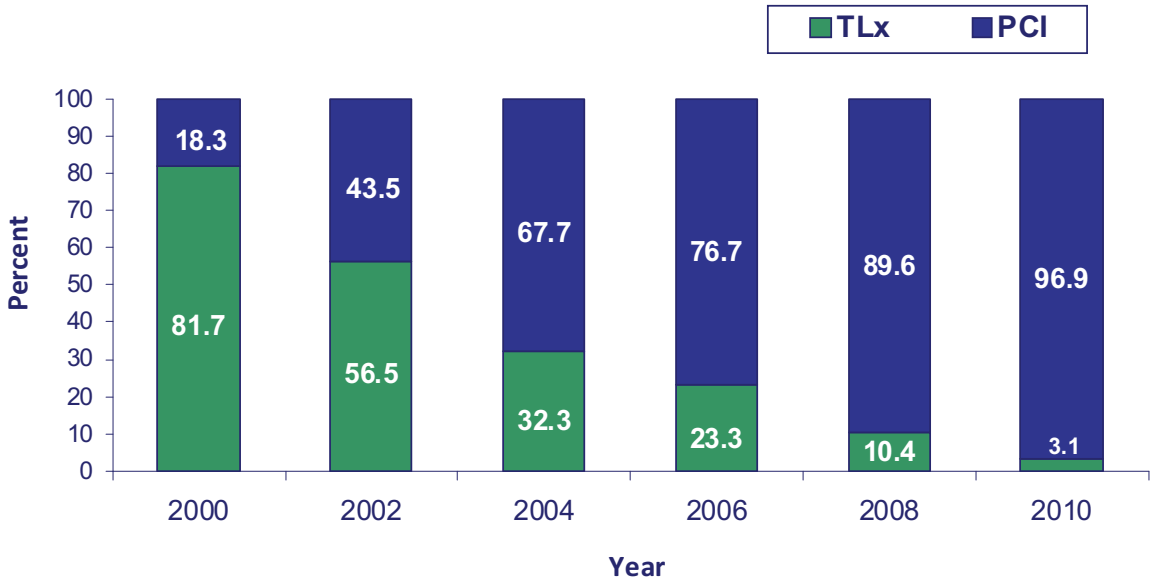
*p for trend <.0001

2.5 Primary Reperfusion Therapy in Patients with ST Elevation

Between 2000-2010, a 27% increase was observed in rates of primary reperfusion among patients with ST elevation. The use of thrombolysis declined markedly in favor of primary PCI.

Figure 2.1: Primary Reperfusion among Patients with ST Elevation

Figure 2.2: Type of Primary Reperfusion among Patients with ST Elevation



2.6 Time Intervals

The median time interval elapsing between symptom onset and ER arrival has not declined between 2000 and 2010. The median time interval elapsing between ER arrival and primary PCI (door to balloon) declined from 2000 to 2004, but has not declined in recent years, and in 2010 reached 68 minutes. The proportion of patients with door-to-balloon ≤90 minutes has not increased in recent years, and was achieved in 66% of primary PCI cases.

Analysis by gender revealed that the decline in door-to-balloon time was evident for men only.

Table 2.6: Time Intervals in reperfused ST-elevation patients (minutes)

Time interval	2000 N=567 Median (25%-75%)	2002 N=588 Median (25%-75%)	2004 N=617 Median (25%-75%)	2006 N=571 Median (25%-75%)	2008 N=482 Median (25%-75%)	2010 N=555 Median (25%-75%)	p for trend
Symptom onset to ER arrival	103 (60-173)	102 (64-166)	110 (70-193)	113 (69-196)	105 (66-180)	111 (70-197)	.0004
ER arrival to primary PCI (door to balloon)	75 (37-120)	83 (50-136)	65 (40-100)	69 (42-105)	67 (40-107)	68 (40-110)	.062
Door to balloon ≤90 min.	62%	54%	68%	67%	67%	66%	.081
ER arrival to TLx	60 (37-85)	50 (35-70)	50 (34-75)	50 (31-74)	37 (21-50)	50 (31-72)	.0005

Table 2.7: Time Intervals (minutes) in reperfused ST elevation patients, by sex

MEN	2000 N=454 Median (25%-75%)	2002 N=476 Median (25%-75%)	2004 N=487 Median (25%-75%)	2006 N=472 Median (25%-75%)	2008 N=401 Median (25%-75%)	2010 N=455 Median (25%-75%)	p for trend
Symptom onset to ER arrival	90 (60-1170)	100 (61-162)	110 (70-193)	110 (66-183)	105 66-180	110 (66-195)	.0024
ER arrival to primary PCI (door to balloon)	85 (51-120)	80 (49-121)	65 (39-99)	69 (43-104)	66 (39-101)	65 (40-103)	.033
ER arrival to TLx	59 (37-80)	51 (35-70)	49 (32-70)	46 (31-70)	38 (20-52)	55 (40-72)	.001

WOMEN	2000 N=113 Median (25%-75%)	2002 N=112 Median (25%-75%)	2004 N=130 Median (25%-75%)	2006 N=99 Median (25%-75%)	2008 N=81 Median (25%-75%)	2010 N=100 Median (25%-75%)	p for trend
Symptom onset to ER arrival	119 (80-185)	110 (83-203)	117 (80-196)	130 (77-242)	110 (70-184)	130 (86-214)	.032
ER arrival to primary PCI (door to balloon)	54 (28-82)	110 (64-153)	68 (40-105)	73 (39-123)	79 (40-124)	78 (40-128)	.877
ER arrival to TLx	61 (37-91)	50 (38-72)	64 (40-96)	61 (33-106)	30 (26-46)	23 (15-31)	.246

2.7 Procedures during Hospitalization in CCU

The use of coronary angiography, PCI, and stents increased steadily between 2000-2010, while the use of CABG declined. The use of echocardiography increased.

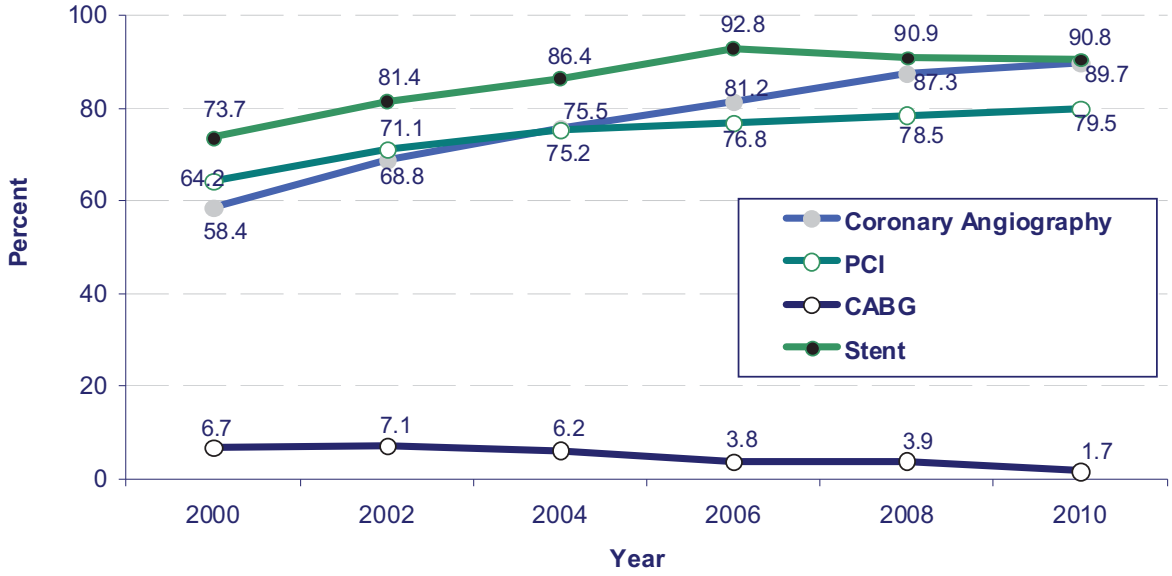
Table 2.8: In-Hospital Procedures

Procedure	2000 N=1,794 %	2002 N=2,048 %	2004 N=2,094 %	2006 N=2,075 %	2008 N=1,746 %	2010 N=1,781 %	p for trend
Coronary Angiography	58.4	68.8	75.5	81.2	87.3	89.7	<.0001
Any PCI(1)	64.2	71.1	75.2	76.8	78.5	79.5	<.0001
Stent(2)	73.7	81.4	86.4	92.8	90.9	90.8	<.0001
CABG	6.7	7.1	6.2	3.8	3.9	1.7	<.0001
IABP	4.8	4.4	3.5	4.8	4.8	4.6	.666
Echocardiography	69.7	68.5	79.0	84.4	79.7	79.8	<.0001

(1) Percent among patients undergoing angiography

(2) Percent among patients undergoing PCI

Figure 2.3: Trends In-Hospital Procedures



2.8 In-Hospital Complications

Between 2000-2010, there has been a decline in the frequency of most in-hospital complications, such as re-infarction, post-MI angina, heart failure, AVB, right- and left- BBB, primary VF, asystole and acute renal failure. There has been a corresponding increase in the incidence of major bleeding.

Table 2.9: In-Hospital Complications

	2000 N=1,794 %	2002 N=2,048 %	2004 N=2,094 %	2006 N=2,075 %	2008 N=1,746 %	2010 N=1,781 %	p for trend
Re-MI	2.5	1.9	1.0	1.8	1.5	1.1	.003
Post MI angina / Re-ischemia	13.8	6.7	5.5	6.2	3.6	2.0	<.0001
Sub-Acute Stent Thrombosis	--	--	--	0.7	1.0	0.8	.672
Mild-moderate CHF (Killip 2)	18.5	10.4	6.8	12.5	7.5	7.8	<.0001
Pulmonary edema (Killip 3)	10.7	8.9	7.3	9.2	6.6	4.9	<.0001
Cardiogenic shock (Killip 4)	5.3	3.8	3.2	4.2	2.7	3.1	.0008
Free wall rupture	0.8	0.4	0.6	0.2	0.6	0.1	.0106
Tamponade	0.6	0.1	0.3	0.2	0.5	0.3	.627
Moderate-severe MR	3.8	2.3	0.7	3.2	1.6	1.7	.0014
RBBB	6.8	4.0	0.5	1.9	1.3	1.7	<.0001
LBBB	3.6	2.1	0.3	0.9	0.7	0.5	<.0001
Sustained VT	2.5	1.6	1.7	2.4	1.5	1.6	.163
High degree AVB (2, 3^0)	4.2	3.0	2.1	2.5	2.2	2.1	.0002
Primary VF	3.6	2.6	1.5	2.5	1.5	2.1	.0017
Secondary VF	1.2	0.5	0.6	1.1	1.4	0.9	.319
Asystole	4.0	2.0	1.7	2.6	2.1	1.9	.0035
TIA	0.3	0.1	0.1	0.4	0.2	0.1	.586
Stroke	0.9	0.8	0.7	0.6	0.6	0.5	.153
Acute renal failure	7.9	8.6	6.8	5.4	4.4	6.1	<.0001
Major bleeding	1.2	1.0	0.5	1.1	1.5	2.4	.0001

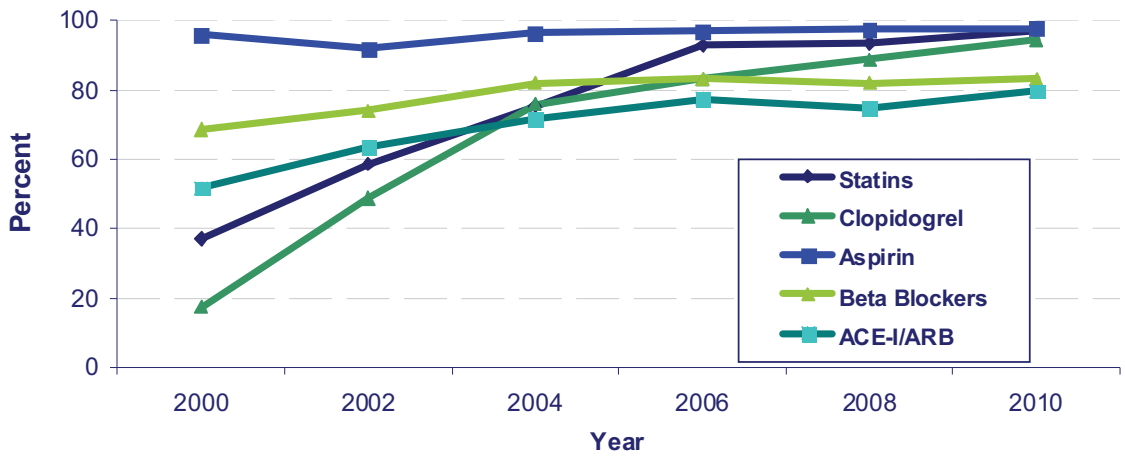
2.9 In-Hospital Treatment

There has been a dramatic increase over the years in the use of clopidogrel and lipid-lowering drugs, primarily statins. In addition, there has been an increase in the use of LMW heparin, IIb/IIIa antagonists, beta blockers and ACE inhibitors/ARB.

Table 2.10: In-Hospital (including ER) Treatment

Treatment	2000 N=1,794 %	2002 N=2,048 %	2004 N=2,094 %	2006 N=2,075 %	2008 N=1,746 %	2010 N=1,781 %	p for trend
Aspirin	96.0	92.0	96.5	97.0	97.5	97.8	<.0001
Unfractionated/ regular Heparin	75.3	53.5	50.2	59.8	59.1	55.4	<.0001
LMW heparin (fractionated)	25.3	48.1	61.9	58.1	53.8	47.5	<.0001
Clopidogrel	17.5	48.9	76.0	83.3	88.8	94.6	<.0001
Prasugrel	--	--	--	--	--	0.1	--
IIb/IIIa	19.1	12.6	20.4	30.9	31.2	24.5	<.0001
Beta blockers	68.7	74.2	82.1	83.3	82.1	83.3	<.0001
ACE-I/ARB	51.7	63.6	71.7	77.4	74.7	79.7	<.0001
LLD	39.1	59.3	76.0	93.5	94.7	97.1	<.0001
Statins	37.2	58.8	75.4	92.9	93.6	97.0	<.0001
Digoxin	3.3	2.3	3.4	2.7	2.2	1.4	.0009
Diuretic	28.3	24.9	30.2	29.9	29.0	27.3	.332
Nitrates	76.7	60.0	25.4	n/a	27.6	23.7	<.0001

Fig 2.4: Trends in Hospital Treatment



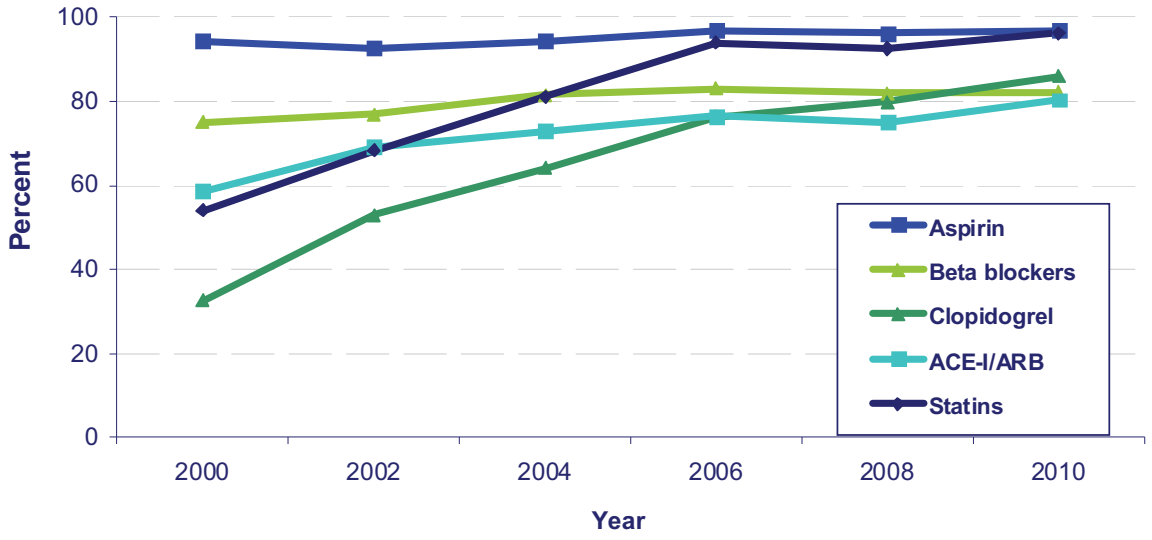
2.10 Medical Treatment on Discharge

The recommended use of aspirin on discharge has reached 97% in recent years. There has been a marked increase in the use of all evidence-based recommended medications. The most dramatic increases have occurred in the use of statins and clopidogrel. Use of nitrates has markedly declined.

Table 2.11: Medical Treatment on Discharge among Hospital Survivors

Medical Treatment	2000 N=1,699 %	2002 N=1,976 %	2004 N=2,025 %	2006 N=2,016 %	2008 N=1,702 %	2010 N=1,743 %	p for trend
Aspirin	94.3	92.7	94.3	96.9	96.2	96.9	<.0001
Beta blockers	75.1	76.9	81.6	83.1	82.0	82.1	<.0001
Clopidogrel	32.6	53.0	64.2	76.3	79.8	86.1	<.0001
Prasugrel	--	--	--	--	--	0.3	--
ACE-I/ARB	58.6	69.2	73.0	76.5	75.0	80.5	<.0001
Statins	54.0	68.4	81.2	93.9	92.6	96.2	<.0001
Lipid lowering drugs	55.9	69.0	81.7	94.5	93.7	96.4	<.0001
Diuretic	23.0	21.3	23.2	23.0	23.9	22.4	.519
Digoxin	3.5	2.3	2.5	2.1	1.5	1.0	<.0001
Nitrates	45.8	31.2	19.6	--	8.6	6.7	<.0001

Figure 2.5: Medical Treatment on Discharge among Hospital Survivors



2.11 Short and Long Term Outcomes

All outcome measures indicate a marked improvement, with the trends observed between 2000 and 2008 continuing in 2010. Between 2000-2010, both 7-day and 30-day mortality rates declined by more than 50%. Rates of 1-year mortality declined by 39% between 2000 and 2008, and it is hoped that follow-up mortality data for ACSIS 2010 will indicate a continuation of this trend. Rates of 30-day MACE declined by 61% between 2000 and 2010.

Similar trends in mortality and MACE were observed in men and in women.

Declines in mortality rates were more substantial for patients with ST elevation than for those with non-ST elevation on admission; however declines in MACE were similar and highly statistically significant for both groups of patients (rates declined by approximately 60% between 2000-2010).

Table 2.12: Rates of Mortality and MACE

Year	2000 N=1,794 %	2002 N=2,048 %	2004 N=2,094 %	2006 N=2,075 %	2008 N=1,746 %	2010 N=1,781 %	p for trend
Mortality:							
on discharge	5.2	3.5	3.2	2.8	2.5	2.1	<.0001
7-day	5.1	3.6	3.1	3.0	2.6	2.2	<.0001
30-day	8.5	5.6	5.5	4.6	4.4	4.1	<.0001
1 year	13.5	11.0	11.2	9.8	8.2	--	<.0001
30-day MACE	26.5	18.7	14.6	16.6	12.5	10.4	<.0001

Figure 2.6: Rates of Mortality and 30-day MACE

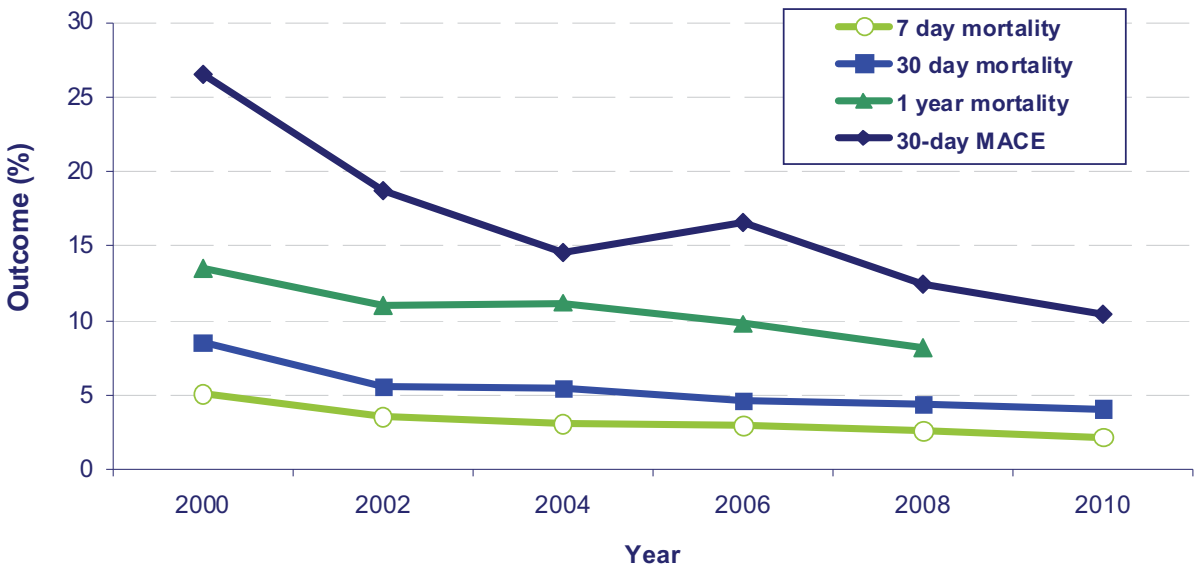


Table 2.13: Rates of Mortality and MACE by Sex

Year	2000	2002	2004	2006	2008	2010	p for trend
MEN	**N=1,346**	**N=1,560**	**N=1,549**	**N=1,606**	**N=1,387**	**N=1,380**	
Mortality (%)							
on discharge	3.9	2.6	2.8	2.6	1.9	2.0	.0015
7-day	3.8	2.8	2.7	2.4	2.1	1.9	.001
30-day	7.1	4.7	4.6	4.0	3.5	3.4	<.0001
1 year	11.8	9.5	9.3	8.4	7.4	--	.0001
30-day MACE (%)	23.8	17.9	12.8	15.1	10.7	9.2	<.0001
WOMEN	**N=448**	**N=488**	**N=545**	**N=469**	**N=359**	**N=401**	
Mortality (%)							
on discharge	9.4	6.4	4.6	3.6	5.0	2.5	<.0001
7-day	9.2	5.9	4.2	4.9	4.7	3.3	.0004
30-day	12.9	8.4	7.9	6.9	7.8	6.3	.0011
1 year	18.6	15.6	16.7	14.6	11.0	--	.0058
30-day MACE (%)	34.8	21.3	19.4	21.7	19.5	14.5	<.0001

Table 2.14: Rates of Mortality and MACE by ECG on Admission

Outcome	2000	2002	2004	2006	2008	2010	p for trend
ST ↑	**N=1,006**	**N=1,011**	**N=1,025**	**N=895**	**N=761**	**N=776**	
Mortality:							
on discharge	7.4	4.8	4.3	4.1	3.7	2.7	<.0001
7-day	7.3	5.0	4.3	4.3	4.1	2.7	<.0001
30-day	11.1	7.1	6.7	5.8	6.0	4.8	<.0001
1 year	15.7	10.9	10.6	10.2	8.1	--	<.0001
30-day MACE	28.0	19.6	14.2	17.1	13.7	10.8	<.0001
Non ST ↑	**N=788**	**N=1,037**	**N=1,069**	**N=1,180**	**N=985**	**N=1,005**	
Mortality:							
on discharge	2.5	2.2	2.2	1.9	1.6	1.7	.1000
7-day	2.4	2.1	2.0	2.0	1.5	1.8	.226
30-day	5.2	4.1	4.2	3.8	3.2	3.5	.0365
1 year	10.7	11.0	11.8	9.5	8.2	--	.0299
30-day MACE	24.6	17.8	14.9	16.3	11.7	10.0	<.0001

Metabolic Syndrome & CHD

-30%

relative risk reduction

for Major Cardiovascular Events

TNT[1]

ACS

-27%

relative risk reduction

for AMI, recurrent ischemia, & unstable angina requiring rehospitalization

PCI-PROVE IT[2]

Post PCI

-70%

relative risk reduction

For Major Cardiovascular Events

ARMYDA ACS[3]

Stroke

-23%

relative risk reduction

for recurrent stroke or TIA

SPARCL[4]

בשבילי.

LIPITOR®

עושה את ההבדל

לליפיטור מעל 10 שנות נסיון והוכחות להפחתת תחלואה ותמותה קרדיווסקולארית במגוון רחב של חולים, הן כמניעה ראשונית והן כמניעה שניונית.[4-10]

Lip/AD1/01/10

References: 1). Deedwania P. et al. Reduction of low-density lipoprotein cholesterol in patients with coronary heart disease and metabolic syndrome: analysis of the Treating to New Targets study. ***Lancet 2006***;368:919-928. 2). Gibson C. M. et al. Effect of Intensive Statin Therapy on Clinical Outcomes Among Patients Undergoing Percutaneous Coronary Intervention for Acute Coronary Syndrome PCI-PROVE IT: A PROVE IT–TIMI 22 (Pravastatin or Atorvastatin Evaluation and Infection Therapy– Thrombolysis In Myocardial Infarction 22) Substudy. ***J Am Coll Cardiol 2009***;54:2290-2295. 3). Patti G. et al. Atorvastatin Pretreatment Improves Outcomes in Patients With Acute Coronary Syndromes Undergoing Early Percutaneous Coronary Intervention Results of the ARMYDA-ACS Randomized Trial. ***J Am Coll Cardiol 2007***;49:1272-1278. 4). Amarenco P. et al. High-Dose Atorvastatin after Stroke or Transient Ischemic Attack. ***New Engl J Med 2006***;355:549-559. 5). Sever PS et al. Prevention of coronary and stroke events with atorvastatin in hypertensive patients who have average or lower-than-average cholesterol concentrations, in the Anglo-Scandinavian Cardiac Outcomes Trial—Lipid Lowering Arm (ASCOT-LLA): a multicentre randomised controlled trial. ***Lancet 2003***;361:1149-1158. 6). Colhoun HM et al. Primary prevention of cardiovascular disease with atorvastatin in type 2 diabetes in the Collaborative Atorvastatin Diabetes Study (CARDS): multicentre randomised placebo-controlled trial. ***Lancet 2004***;364:685-696. 7). Pedersen TR et al. High-Dose Atorvastatin vs Usual-Dose Simvastatin for econdary Prevention After Myocardial Infarction. The IDEAL Study: A Randomized Controlled Trial. ***JAMA 2005***;294:2437-2445. 8). Schwartz GG et al. Effects of Atorvastatin on Early Recurrent Ischemic Events in Acute Coronary Syndromes: The MIRACL Study: A Randomized Controlled Trial. ***JAMA 2001***;285:1711-1718. 9). Cannon CP et al. Intensive versus Moderate Lipid Lowering with Statins after Acute Coronary Syndromes. ***N Engl J Med 2004***;350:1495-1504. 10). LaRosa JC et al. Intensive Lipid Lowering with Atorvastatin in Patients with Stable Coronary Disease. ***N Engl J Med 2005***;352:1425-1435.

INDICATIONS Hypercholesterolaemia Lipitor is indicated as an adjunct to diet for the treatment of elevated total cholesterol, LDL-cholesterol, apolipoprotein B, and triglycerides and to increase HDL-cholesterol in patients with primary hypercholesterolaemia including familial hypercholesterolaemia (heterozygous variant) or combined (mixed) hyperlipidaemia (Fredrickson Types IIa and IIb) when response to diet and other nonpharmacological measures is inadequate. Lipitor is also indicated to reduce total-C and LDL-C in patients with homozygous familial hypercholesterolaemia as an adjunct to other lipid-lowering treatments (e.g. LDL apheresis) or if such treatments are unavailable. Pediatric Patients (10-17 years of age) Atorvastatin is indicated as an adjunct to diet to reduce total-C, LDL-C, and apo B levels in boys and postmenarchal girls, 10 to 17 years of age, with heterozygous familial hypercholesterolemia if after an adequate trial of diet therapy the following findings are present: a. LDL-C remains ≥ 190 mg/dL or b. LDL-C remains ≥ 160 mg/dL and: there is a positive family history of premature cardiovascular disease or two or more other CVD risk factors are present in the pediatric patient. Prevention of cardiovascular disease Prevention of cardiovascular and/or cerebrovascular events such as MI or stroke: as an adjunct to correction of other risk factors such as hypertension in patients with three or more additional risk factors or diabetes with one additional risk factors. In patients with clinically evident coronary heart disease, LIPITOR is indicated to: Reduce the risk of non-fatal myocardial infarction, Reduce the risk of fatal and non-fatal stroke, Reduce the risk for revascularization procedures, Reduce the risk of hospitalization for CHF. Reduce the risk of angina. **CONTRAINDICATIONS** Lipitor is contraindicated in patients: with hypersensitivity to any component of this medication, with active liver disease or unexplained persistent elevations of serum transaminases exceeding 3 times the upper limit of normal, with myopathy, during pregnancy, while breastfeeding, in women of child-bearing potential not using appropriate contraceptive measures. Atorvastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards to the fetus. If the patient becomes pregnant while taking this drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus. **SPECIAL WARNINGS AND PRECAUTIONS FOR USE**: ***Liver Effects*** Liver function tests should be performed before the initiation of treatment, at 6 and 12 weeks after initiation of therapy or elevation in dose, and periodically (e.g. semi-annually) thereafter. Patients who develop any signs or symptoms suggestive of liver injury should have liver function tests performed. Patients who develop increased transaminase levels should be monitored until the abnormality(ies) is (are) resolved. Should an increase in transaminases of greater than 3 times the upper limit of normal persist, reduction of dose or withdrawal of Lipitor is recommended. Lipitor should be used with caution in patients who consume substantial quantities of alcohol and/or have a history of liver disease. **Skeletal Muscle Effects** Myalgia has been reported in atorvastatin-treated patients. Myopathy, defined as muscle aching or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values >10 x ULN, should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to promptly report unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. Atorvastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. The risk of myopathy during treatment with drugs in this class is increased with concurrent administration of cyclosporine, fibric acid derivatives, erythromycin, niacin, or azole antifungals. Many of these drugs inhibit cytochrome P450 3A4 metabolism and/or drug-transport. CYP 3A4 is the primary hepatic isozymes known to be involved in the biotransformation of atorvastatin. Physicians considering combined therapy with atorvastatin and fibric acid derivatives, erythromycin, immunosuppressive drugs, azole antifungals, or lipid-modifying doses of niacin should carefully weigh the potential benefits and risks and should carefully monitor patients for any signs and symptoms of muscle pain, tenderness, or weakness, particularly during the initial months of therapy and during any periods of upward dosage titration of either drug. Therefore, lower starting and maintenance doses of atorvastatin should also be considered when taken concomitantly with the aforementioned drugs. Periodic creatine phosphoknase (CPK) determinations may be considered in such situations, but there is no assurance that such monitoring will prevent the occurrence of severe myopathy. Atorvastatin may cause an elevation of creatine phosphokinase. As with other drugs in this class, rare cases of rhabdomyolysis with acute renal failure secondary to myoglobinuria, have been reported. Atorvastatin therapy should be temporarily withheld or discontinued in any patient with an acute, serious condition suggestive of a myopathy or having a risk factor predisposing to the development of renal failure secondary to rhabdomyolysis, (e.g., severe acute infection, hypotension, major surgery, trauma, severe metabolic, endocrine and electrolyte disorders, and uncontrolled seizures). Patients with rare hereditary problems of galactose intolerance, Lapp lactose deficiency or glucose-galactose malabsorption should not take this medicine. **Children aged 10-17 years:** In patients aged <18 years efficacy and safety have not been studied for treatment periods >52 weeks' duration and effects on long-term cardiovascular outcomes are unknown. Long term effects on cognitive development, growth and pubertal maturation are unknown. **Hemorrhagic Stroke:** A post-hoc analysis of a clinical study in 4,731 patients without CHD who had a stroke or TIA within the preceding 6 months and were initiated on atorvastatin 80 mg, revealed a higher incidence of hemorrhagic stroke in the atorvastatin 80 mg group compared to placebo (55 atorvastatin vs 33 placebo). Patients with hemorrhagic stroke on entry appeared to be at increased risk for recurrent hemorrhagic stroke (7 atorvastatin vs 2 placebo). However, in patients treated with atorvastatin 80 mg there were fewer strokes of any type (265 vs 311) and fewer CHD events (123 vs 204). ***Undesirable effects*** The most frequent (1% or more) adverse effects associated with Lipitor therapy, in patients participating in controlled clinical studies are constipation, flatulence, dyspepsia, abdominal pain, headache, nausea, myalgia, asthenia, diarrhoea, insomnia. For further information please see Lipitor physician leaflet.

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עושה את ההבדל

10 שנים

Chapter 3: ACSIS – PCI

3.1 Distribution of Patients

ACSIS PCI survey included 1,815 patients who underwent coronary angiography during their in-hospital stay, of whom 1,391 patients (77%) underwent coronary intervention. Overall, 1,794 coronary interventions were performed. About 90% of the patients who underwent coronary angiography and PCI were hospitalized in cardiology units and 10% in internal medicine wards.

Figure 3.1: Distribution of Patients, ACSIS 2010

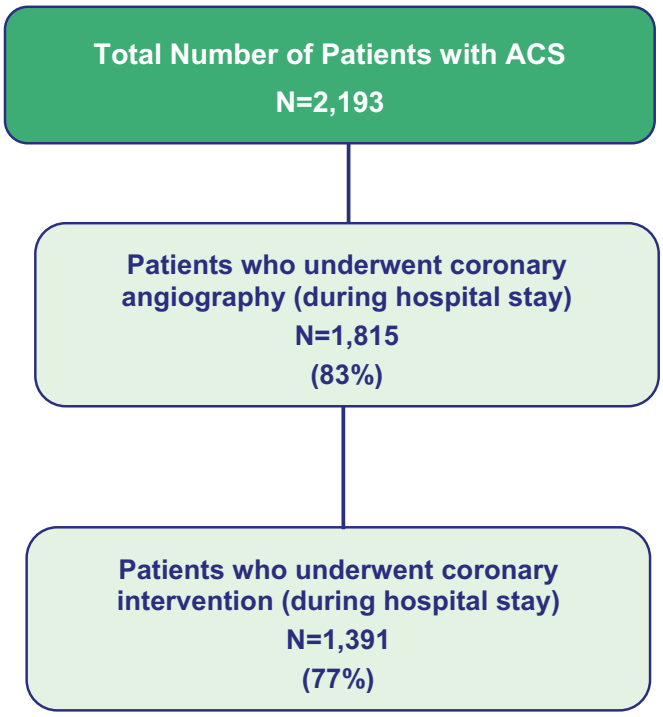
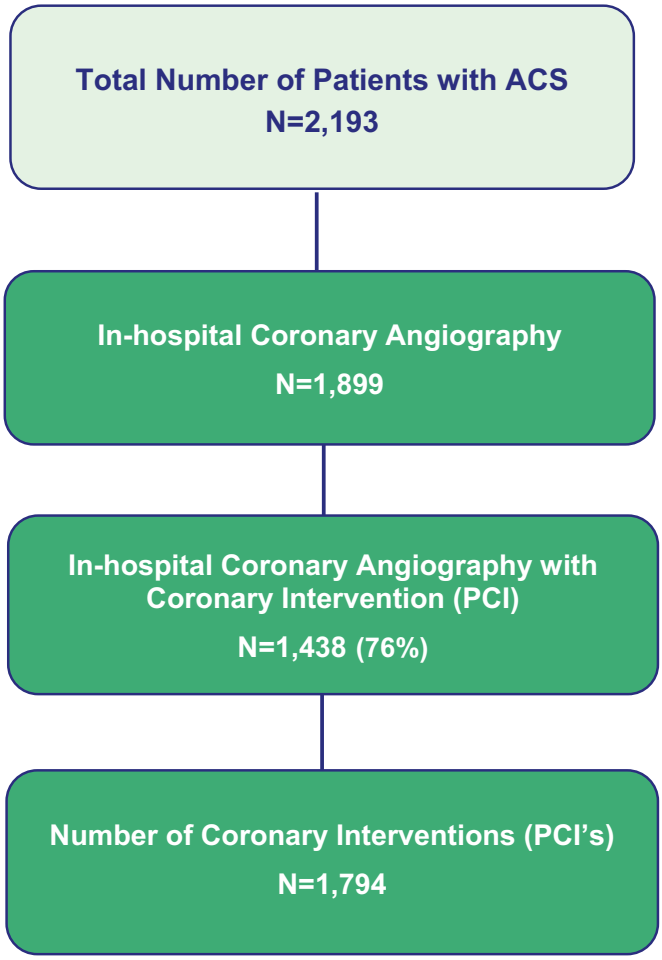


Figure 3.2: Distribution of Patients, ACSIS 2010



3.2 Clinical Characteristics and Diagnosis

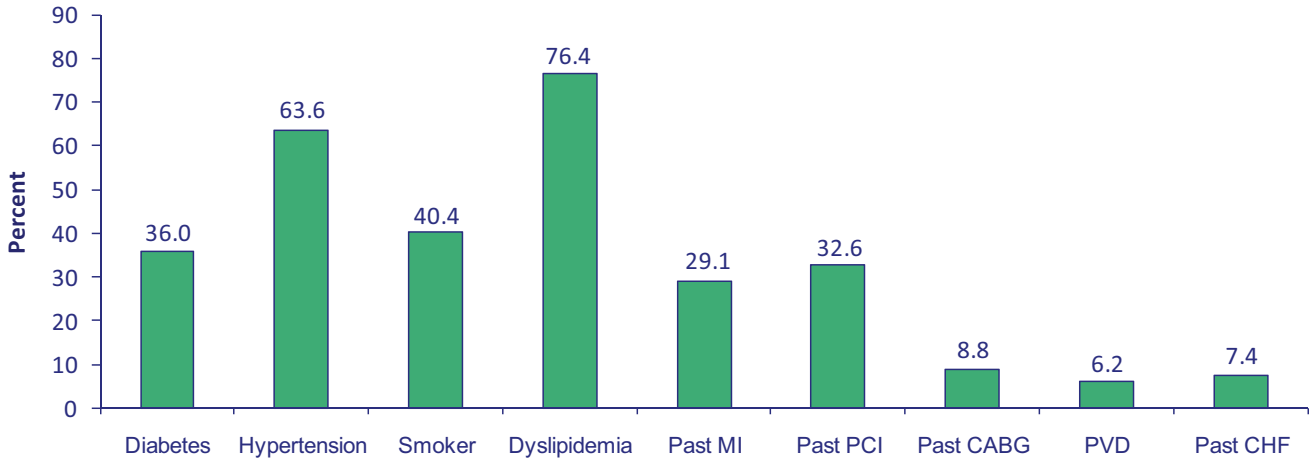
3.2.1 Clinical Characteristics

Patients who underwent PCI during in-hospital stay (N=1,391)

Table 3.1: Baseline and Clinical Characteristics

Characteristic	%
Male	80
Age (years; Mean ± SD)	63 ±20
Age>75 years	16.1
Diabetes	36.0
Hypertension	63.6
Smoker	40.4
Dyslipidemia	76.4
Past MI	29.1
Past PCI	32.6
Past CABG	8.8
PVD	6.2
Past CHF	7.4

Figure 3.3: Baseline and Clinical Characteristics



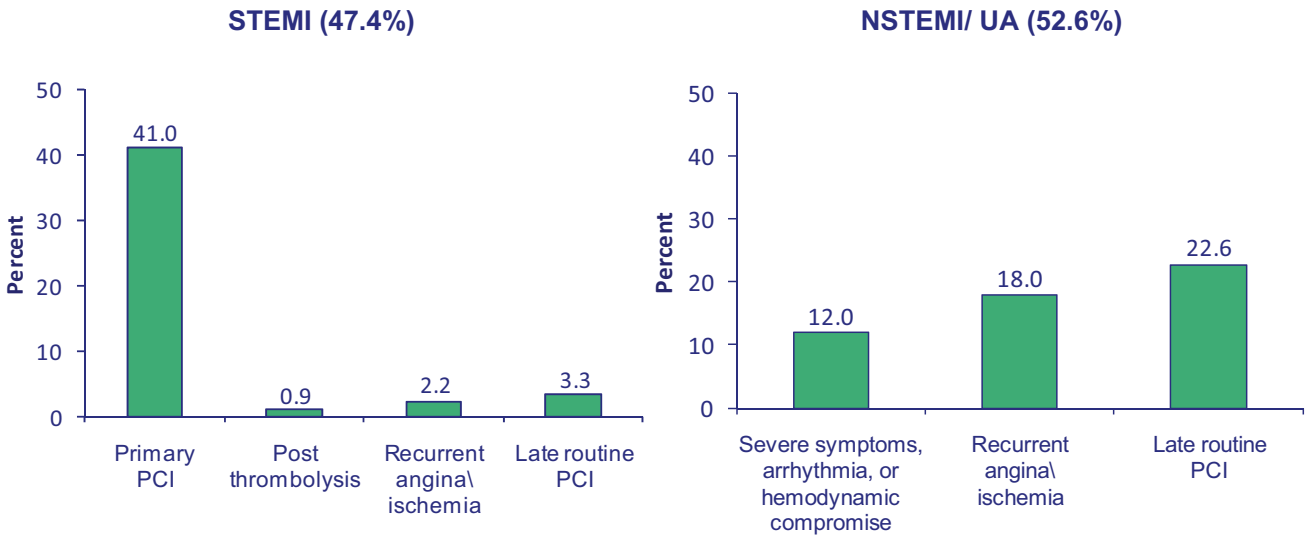
3.2.2 Clinical Diagnosis

Clinical diagnosis leading to performance of coronary angiography with intervention (N=1,438).

Table 3.2: Clinical Diagnosis

STEMI (47.4%)	%
Primary PCI	41.0
Post thrombolysis	0.9
Recurrent angina \ ischemia	2.2
Late routine PCI	3.3
NSTEMI/ UA (52.6%)	%
Severe symptoms, arrhythmia, or hemodynamic compromise	12.0
Recurrent angina/ ischemia	18.0
Late routine PCI	22.6

Figure 3.4: Clinical Diagnosis



3.3 Vascular Access

In over two-thirds of 1,438 procedures (coronary angiography with PCI), the access was via the femoral artery, in 32% the access was trans-radial, and in less than 1% the access was brachial.

Table 3.3: Vascular Access

Access	%
Femoral	67.8
Radial	32.1
Brachial	0.1

3.4 Pharmacology

3.4.1 Pharmacologic therapy in patients undergoing coronary angiography with PCI (N=1,391)

70% of patients were treated with unfractionated heparin and 34% with IIB/IIIA antagonists. Clopidogrel was administered prior to PCI in 83% of the patients, and following PCI in an additional 10% of the patients.

Table 3.4: Pharmacology

Medication	%
UFH/ LMWH	79.0
Bivalirudin	7.4
Fondaparinux	5.8
GP IIb/IIIa antagonists	34.0
Clopidogrel (initiated pre-PCI)	83.0
Clopidogrel (initiated post-PCI)	16.7

3.5 Vascular Closure Devices

Vascular closure devices were used in a minority of patients who underwent coronary angiography via the femoral approach. When used, Angioseal® was employed in 18.8% of cases and Perclose® in less than 1% of cases. Other devices were used in 5.2% of cases.

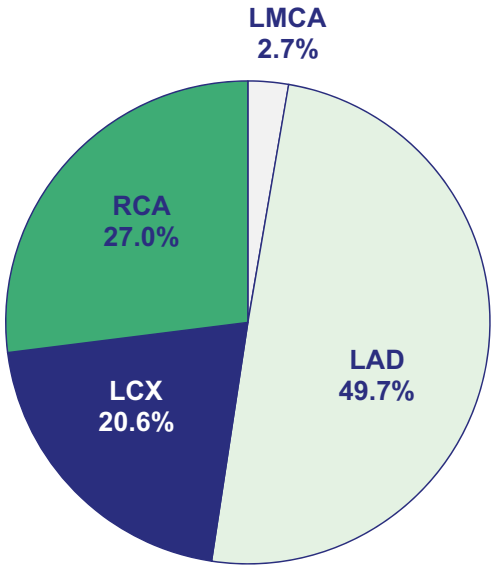
Table 3.5: Vascular closure devices

Medication	%
None	75.5
Angioseal	18.8
Perclose	0.5
Other	5.2

3.6 Culprit Vessels Treated

In almost half the cases the culprit vessel was the left anterior descending artery, and in approximately one quarter of cases the right coronary artery. The left circumflex was culprit in 20.6% of cases and the left main trunk in 2.7%.

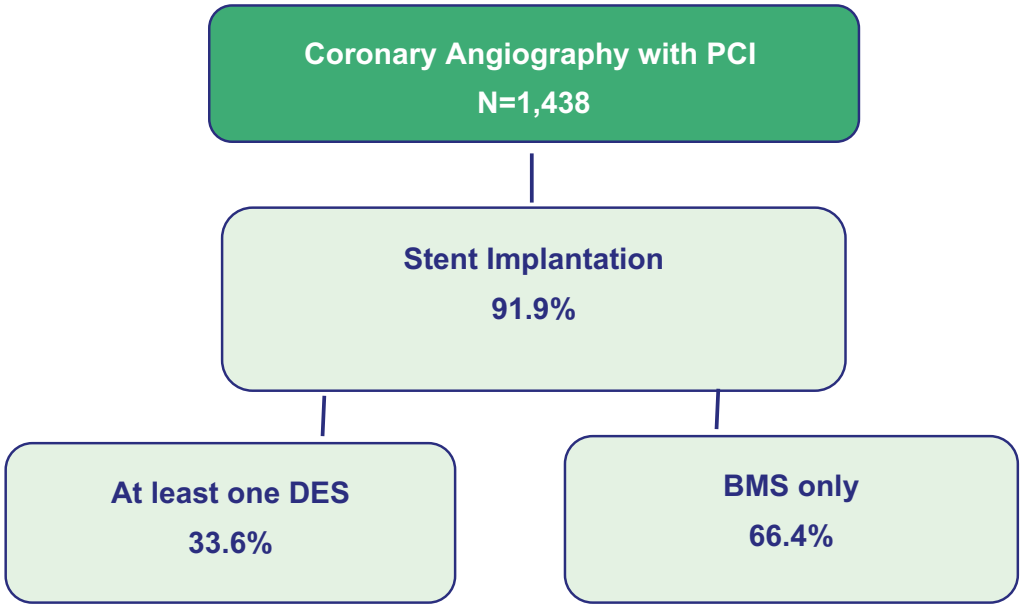
Figure 3.5 Culprit vessels treated



3.7 Stent Implantation

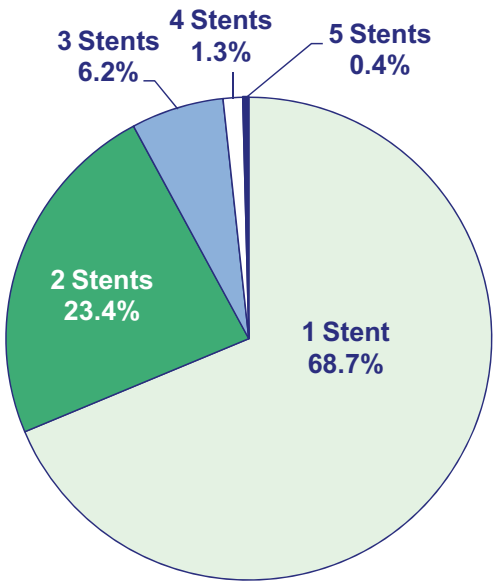
Stents were deployed in 91.9% of coronary interventions. In approximately two-thirds only bare metal stents were used, and in approximately one third at least one DES was implanted

Table 3.6: Stent details



In about one third of procedures, more than one stent was implanted

Figure 3.6: Stent details



3.8 Use of Diagnostic and other Devices in Patients undergoing PCI

Intravascular ultrasound and FFR were used in 0.8% and 0.4% of coronary interventions (N=1,438). During PCI in STEMI patients, aspiration was used in 45.6%, and intra-aortic balloon pump in 5.7%

Table 3.7: Diagnostic and other devices

Diagnostic devices – all	%
IVUS	0.8
FFR	0.4

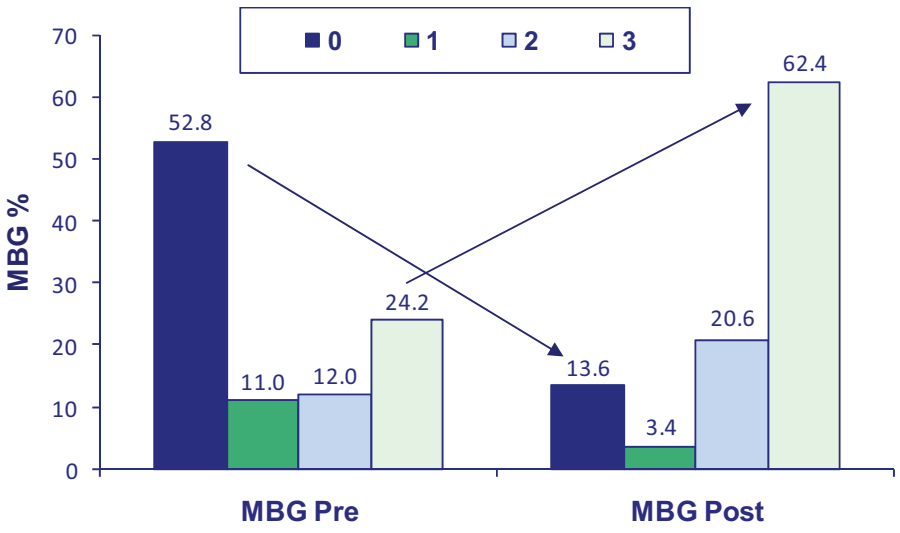
Aspiration device - STEMI	%
+ Aspiration	45.6
- Aspiration	54.4

Use of IABP - STEMI	%
+ IABP	5.7
- IABP	94.3

3.9 Blush in STEMI

Normal myocardial blush was achieved in over 60% of PPCI (as compared with 25% pre-PPCI).

Figure 3.7: Blush in STEMI patients



3.10 Procedural Complications

3.10.1 Procedural Complications in all ACS patients

Coronary artery dissections occurred in 3.8% of patients (less than 1% final dissection), and perforation occurred in 0.3%. In 3.1% of patients no-reflow occurred, and side-branch closure in 2.7%. Urgent CABG had to be performed in 0.4% of cases. CPR was performed in 1.3% of patients.

Table 3.8: Procedural complications following PCI in all ACS patients

Complication	%
No reflow	3.1
Any dissection	3.8
Dissection (final)	0.7
Side-branch closure	2.7
CPR during PCI	1.3
Perforation	0.3
Urgent CABG	0.4

3.10.2 Procedural Complications following PCI in STEMI patients

Complications were slightly more frequent in STEMI patients. Dissections occurred in 3.9% of patients, no reflow occurred in 4%, and side-branch closure in 4%. CPR was performed on 2% of patients, and urgent CABG on 0.6%.

Table 3.9: Procedural complications in STEMI patients

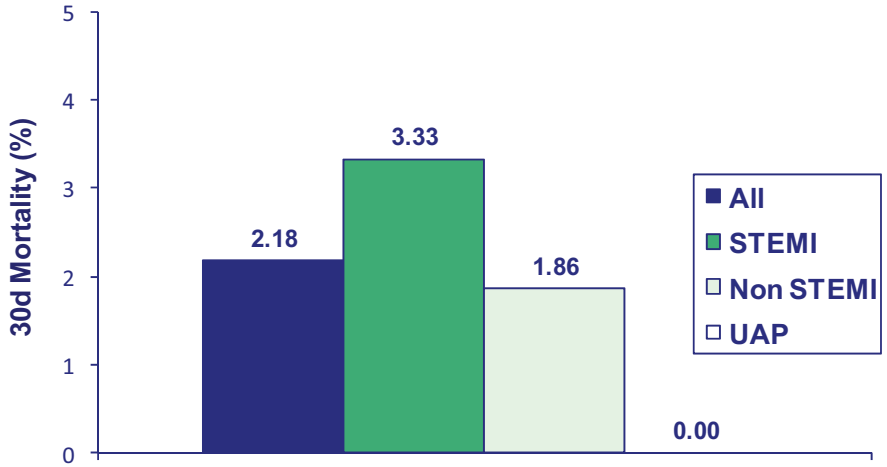
Complication	%
No reflow	4.0
Any dissection	3.9
Dissection (final)	0.7
Side-branch closure	4.0
CPR during PCI	2.0
Perforation	0.2
Urgent CABG	0.6

3.11 Mortality and Adverse Events following ACS-PCI

3.11.1 Mortality following ACS-PCI

The total 30-day mortality following PCI was 2.18%: in STEMI patients, 30-day mortality was 3.3%, and in non-STEMI patients, 1.86%, while 30-day mortality was nil in patients with UAP.

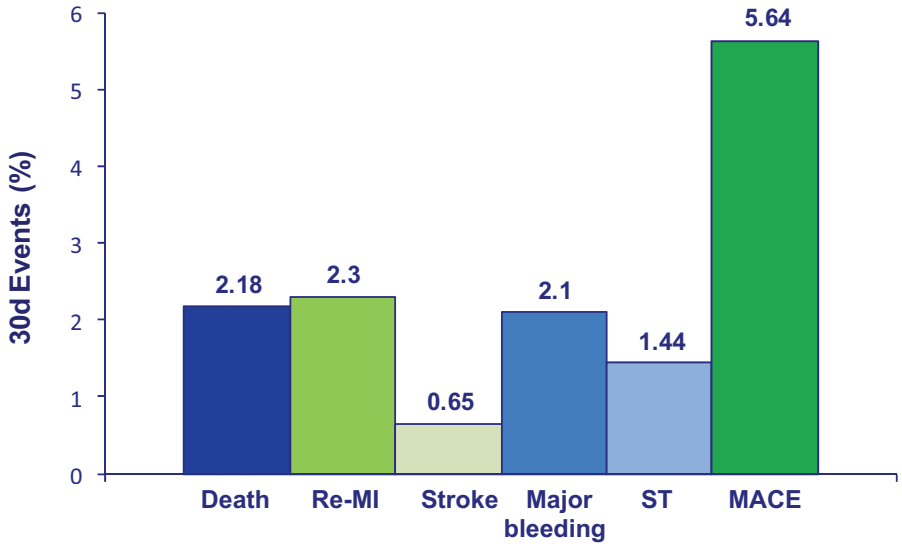
Figure 3.8: 30-day Mortality following ACS-PCI



3.11.2 Adverse Events following ACS-PCI

Re-infarction occurred in 2.5% of patients, major bleeding in 2.1%, stent thrombosis in 1.4% and MACE in 5.6%. Stroke occurred in less than 1% of cases.

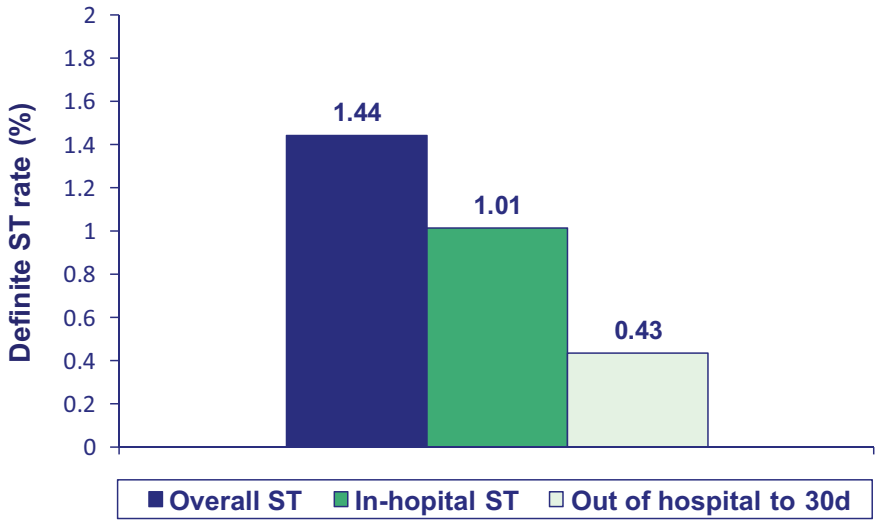
Figure 3.9: Adverse Events following ACS-PCI



3.11.3 Stent thrombosis

The overall 30-day stent thrombosis rate was 1.44% - the in-hospital rate was 1% and the post discharge to 30 days follow up rate was 0.43%.

Figure 3.10: Stent thrombosis details

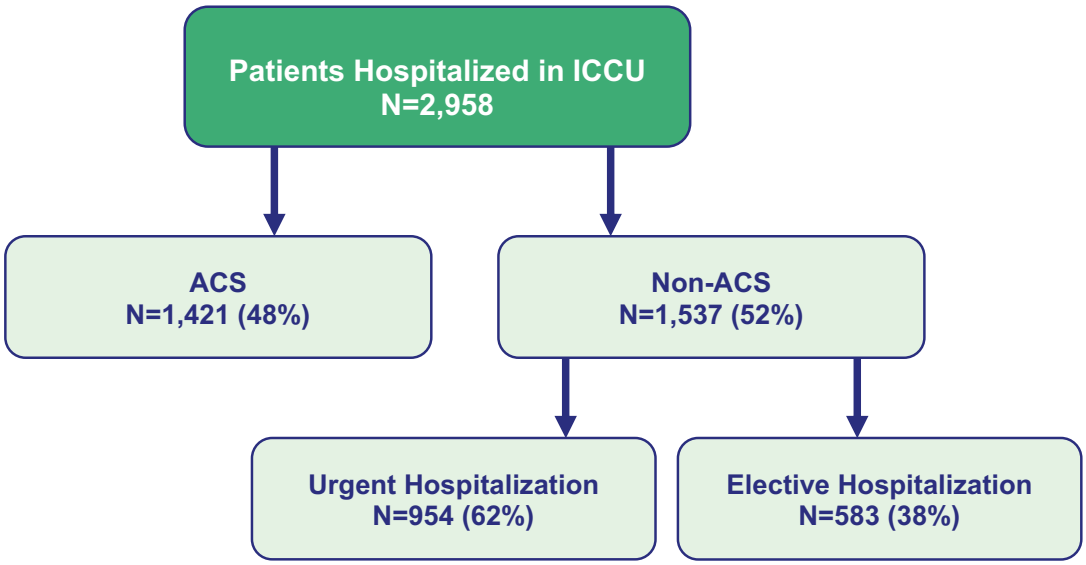


Chapter 4: ICCU – Non-ACS Patients

4.1 Distribution of Patients

Out of a total of 2,958 patients hospitalized in ICCU, 48% were ACS patients and 52%, non-ACS patients. Of the non-ACS patients, 62% were urgent hospitalizations and 38% were elective hospitalizations.

Figure 4.1: Distribution of Patients Hospitalized in ICCU, ACSIS 2010



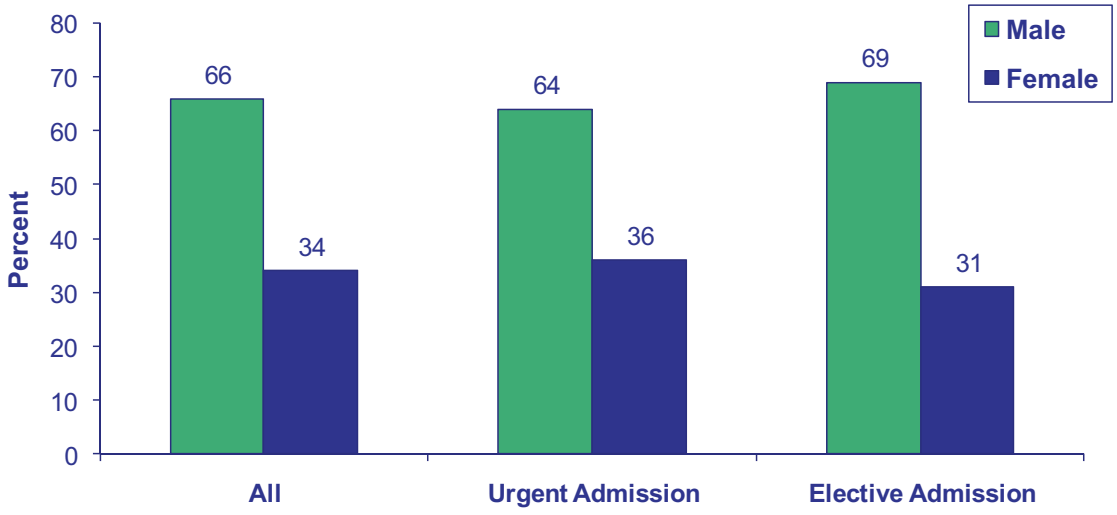
4.2 Non-ACS Hospitalization: Age and Gender

Of non-ACS patients hospitalized in the ICCU, 66% were male. The mean overall age was 66 years, and there was no difference in the mean age between urgent vs elective admissions.

Table 4.1: Non-ACS Hospitalization: Age and Gender

	ALL (N=1537)	Urgent Admission (n=954)	Elective Admission (N=583)	p
Age (years, Mean ± SD)	66±15	65±16	66±13	0.662
Gender (% Male)	66	64	69	0.088

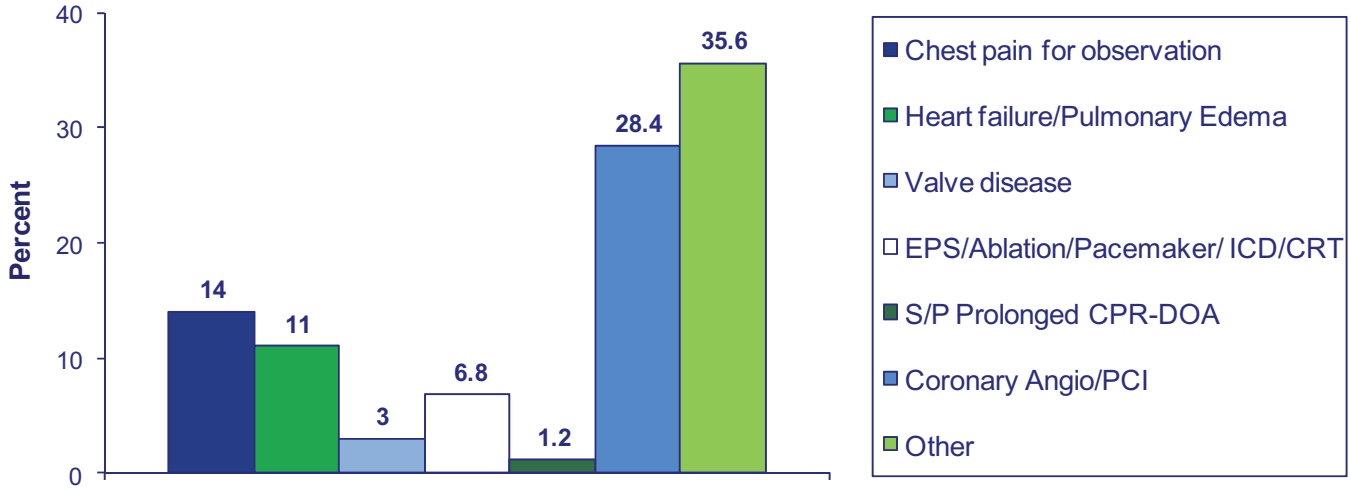
Figure 4.2: Non-ACS Hospitalization: Gender



4.3 Reasons for Non-ACS Hospitalization in ICCU

About 28% of patients were hospitalized for coronary angiography or PCI, 14% were hospitalized with chest pain for observation, 11% with heart failure or pulmonary edema and 3% with valve disease.

Figure 4.3: Reasons for Non-ACS Hospitalization in ICCU



4.4 Diagnosis during Non-ACS Hospitalization in ICCU

Among those patients hospitalized as urgent admission cases, the most frequent diagnoses were arrhythmia or conduction disturbances (40%), CHF (21%) and chest pain (20%). Among those patients hospitalized as elective admission cases, the most frequent diagnosis was stable angina pectoris (41%).

Table 4.2: Diagnosis during Non-ACS Hospitalization in ICCU

Diagnosis	ALL (N=1,537)		Urgent Admission (n=954)		Elective Admission (N=583)		p
	n	%	n	%	n	%	
Stable AP	306	20.0	68	7.1	238	41.0	<.0001
Chest pain	236	15.0	189	20.0	47	8.1	<.0001
CHF	249	16.0	197	21.0	52	9.0	<.0001
Perimyocarditis	49	3.2	48	5.0	1	0.2	<.0001
Arrhythmia/Conduction disturbances	473	31.0	380	40.0	93	16.0	<.0001
CVA	31	2.0	19	1.9	12	2.1	0.929
Renal failure	128	8.3	107	11.0	21	3.6	<.0001
COPD	44	2.9	29	3.0	15	2.6	0.591
Pulmonary embolism	10	0.7	10	1.0	0	0	0.0166
Pneumonia, Sepsis, other infections	89	5.8	76	8.0	13	2.2	<.0001
Multi-organ failure	18	1.2	18	1.9	0	0	<.0001

4.5 Procedures during Non-ACS Hospitalization in ICCU

Among those patients who were hospitalized as urgent admission cases, 13% underwent pacemaker implantation and 8.1% underwent cardioversion. PCI was performed on 1% of patients and AICD/CRT implantation, on 4.1%. Among those hospitalized as elective admission cases, PCI was performed on 34% of patients, 4.8% underwent pacemaker implantation and 4.5%, valve replacement. CABG was performed in 2.8% of patients, and EPS/ablation in 3.4%.

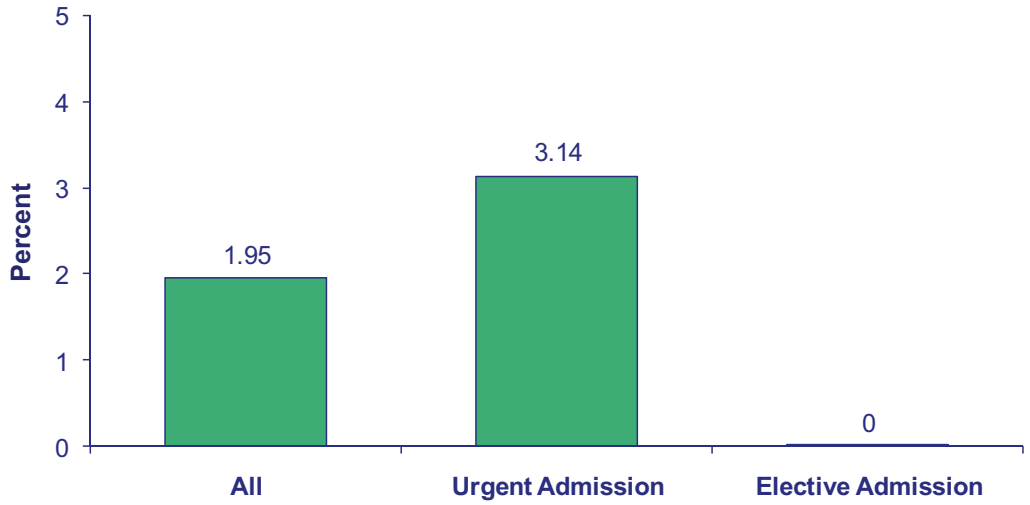
Table 4.3: Procedures during Non-ACS Hospitalization in ICCU

Procedure	ALL (N=1537)		Urgent Admission (n=954)		Elective Admission (N=583)	
	n	%	n	%	n	%
Pacemaker Implantation	153	10.0	125	13.0	28	4.8
AICD/CRT Implantation	54	3.5	39	4.1	15	2.6
EPS/Ablation	38	2.5	18	1.9	20	3.4
Cardioversion	101	6.6	77	8.1	24	4.1
PCI	208	14.0	10	1.0	198	34.0
CABG	19	1.3	3	0.3	16	2.8
Valve Replacement	30	2.0	4	0.4	26	4.5
Hemodialysis	25	1.6	19	2.0	6	1.0

4.6 In-Hospital Mortality

Overall in-hospital mortality was 1.95%. Among urgent admissions, mortality was 3.1% and among elective admissions there were no in-hospital deaths.

Figure 4.4: In-hospital mortality



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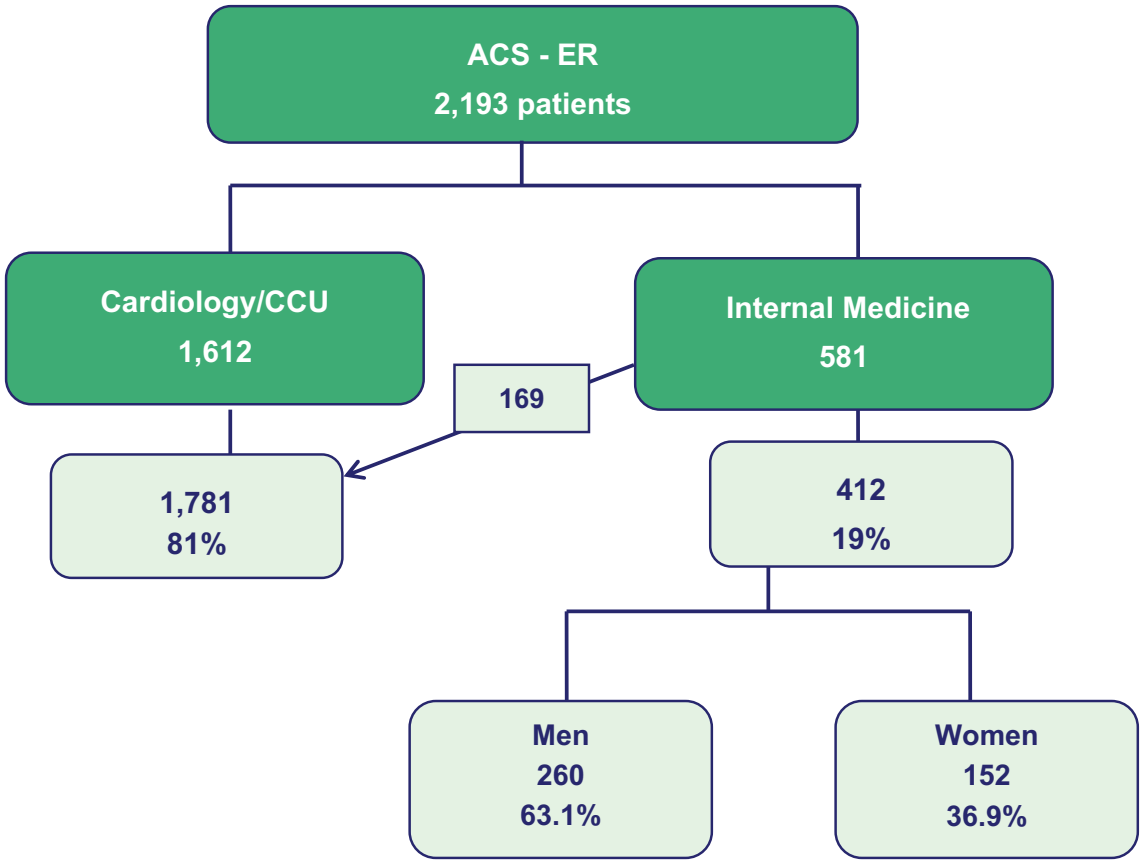
Chapter 5: ACSIS in Internal Medicine

5.1 Distribution of Patients with ACS

ACSIS 2010 was performed in 37 representative Internal Medicine wards in 22 public hospitals in Israel. Of the 2,193 patients who were included in the survey, 581 were initially hospitalized in Internal medicine wards. Of these, 169 were transferred to Cardiology/CCU's, leaving a total of 412 patients (19% of all ACS patients) in Internal Medicine wards. 63.1% (260) of these patients were men and 36.9% (152) were women.

Figure 5.1: Distribution of Patients with ACS by ward of hospitalization



5.2 Demographic Characteristics

5.2.1 Age and Sex Distribution

Male patients with ACS were, on average, 7 years younger than female patients (mean ages: 68.7 and 75.7, respectively).

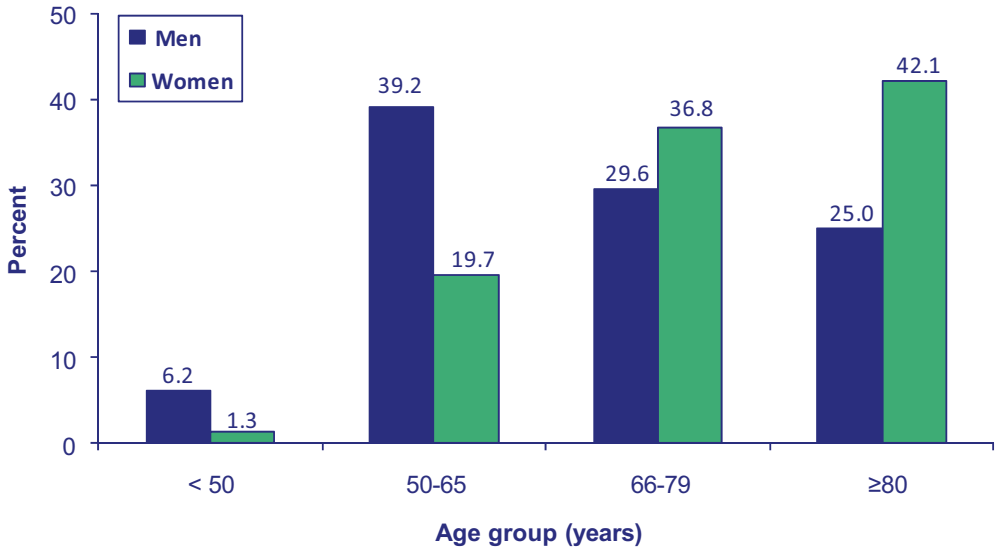
The age distribution of male patients was significantly different from that of female patients. 45.4% of men were in the younger age groups (≤65) and 25% were aged 80 or above. By contrast, 21% of women were in the younger age groups (≤65), and 42.1% were aged 80 or above.

Table 5.1: Age and Sex Distribution

Age group* (years)	Men (N=260)		Women (N=152)		Total (N=412)	
	n	%	n	%	n	%
< 50	16	6.2	2	1.3	18	4.4
50-65	102	39.2	30	19.7	132	32.0
66-79	77	29.6	56	36.8	133	32.3
≥ 80	65	25.0	64	42.1	129	31.3
Mean age ± SD*	68.65 ± 13.61		75.72 ± 11.72		71.26± 13.38	

*p<0.0001 for age distribution of men and women and for mean age of men and women.

Figure 5.2: Age Distribution by Sex



5.3 Cardiovascular History and Risk Factors

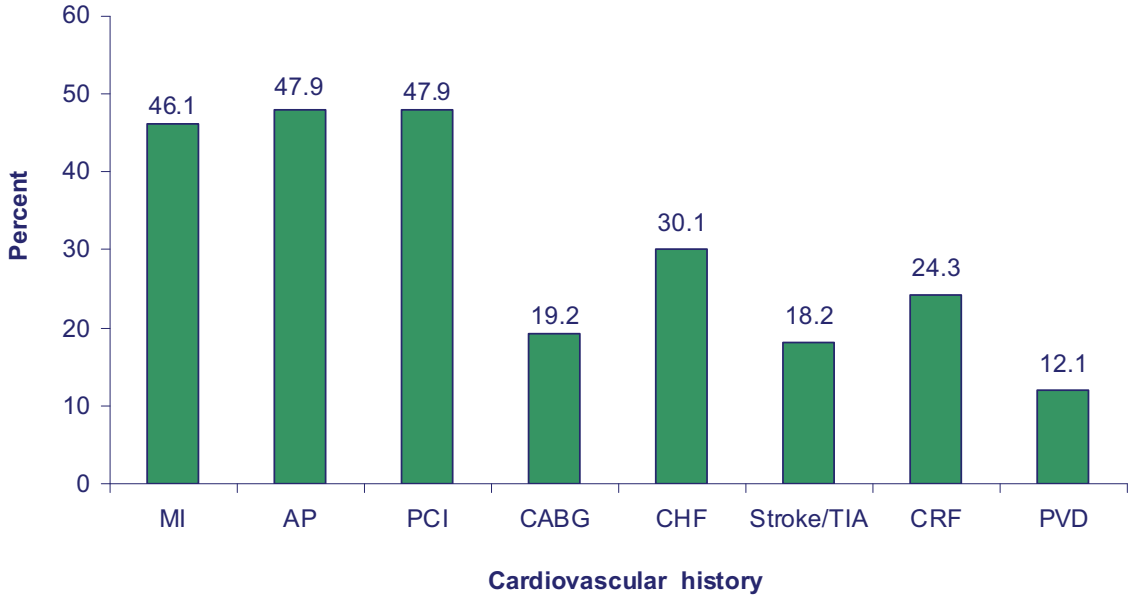
5.3.1 Cardiovascular History

Close to one half of ACS patients (46.1%) had a prior history of MI, 47.9% had a history of angina pectoris and a similar proportion had previously undergone PCI. 19.2% had undergone CABG. Close to one third of patients (30.1%) had chronic congestive heart failure, 18.2% had a history of stroke, and almost one quarter (24.3%) had chronic renal failure.

Table 1.3: Cardiovascular History

Cardiovascular history	n	%
MI	185	46.1
AP	190	47.9
PCI	195	47.9
CABG	78	19.2
CHF	122	30.1
Stroke/TIA	74	18.2
Chronic renal failure (CRF)	99	24.3
PVD	49	12.1

Figure 5.3: Cardiovascular History



5.3.2 Risk Factors

Hypertension and dyslipidemia were present in about 80% of patients, and diabetes in about half. In addition, almost one-quarter were smokers, and a similar proportion had a family history of CAD. Only a small percentage of hypertension, diabetes and dyslipidemia were newly diagnosed.

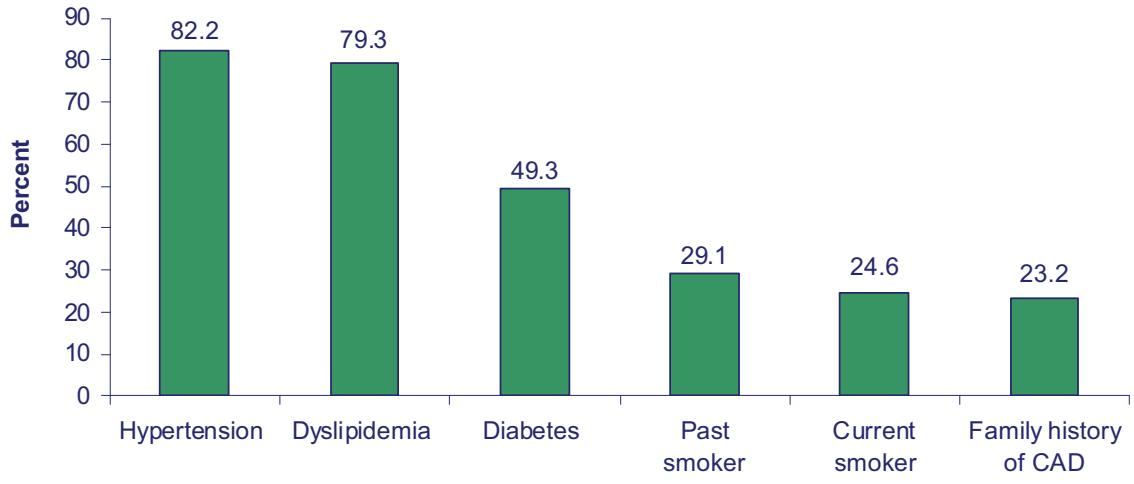
.

Table 1.4: Risk Factors

Risk Factors	%
Hypertension	82.2
% Newly diagnosed*	0.9
Diabetes	49.3
% Newly diagnosed*	1.6
Dyslipidemia	79.3
% Newly diagnosed*	4.3
Current smoker	24.6
Past smoker	29.1
Family history of CAD	23.2

* newly diagnosed expressed as percentage of total patients with specific risk factor

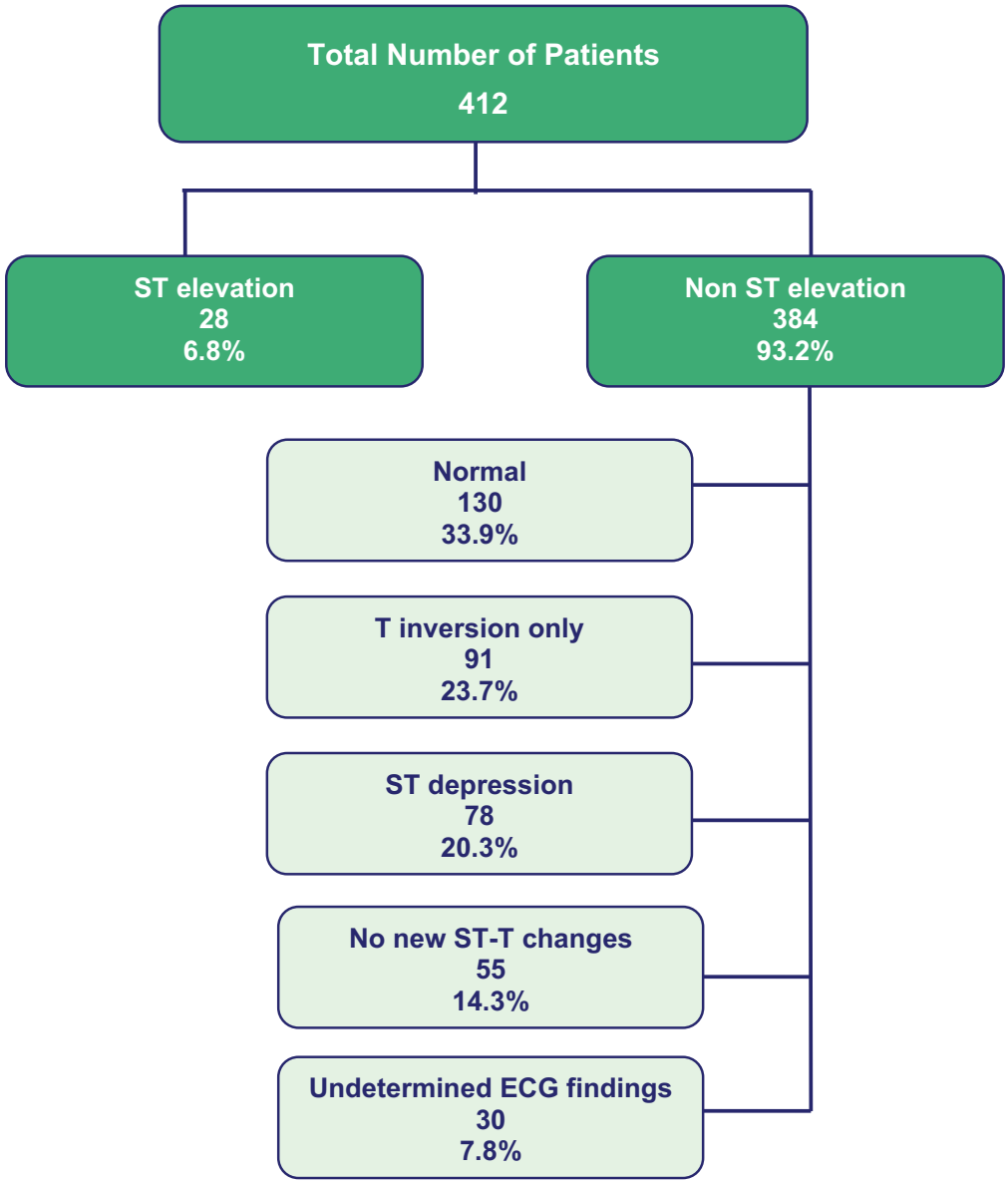
Figure 5.4: Risk Factors



5.3.3 Distribution of Patients with ACS by ECG on Admission

The overwhelming majority of patients presented with non-ST elevation (93.2%). Of these, 33.9% presented with normal ECG, 23.7% had T-wave inversion only, 20.3% presented with ST depression, 14.3% demonstrated no new ST-T changes, and 7.8% had undetermined ECG findings.

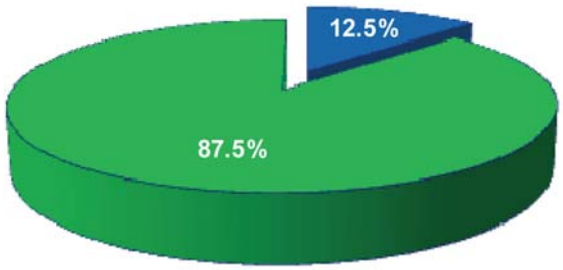
Figure 5.5: Distribution of Patients with ACS by ECG on Admission



5.3.4 Visit to ER during the Month Preceding Hospitalization

12.5% of patients had visited the ER during the month preceding hospitalization

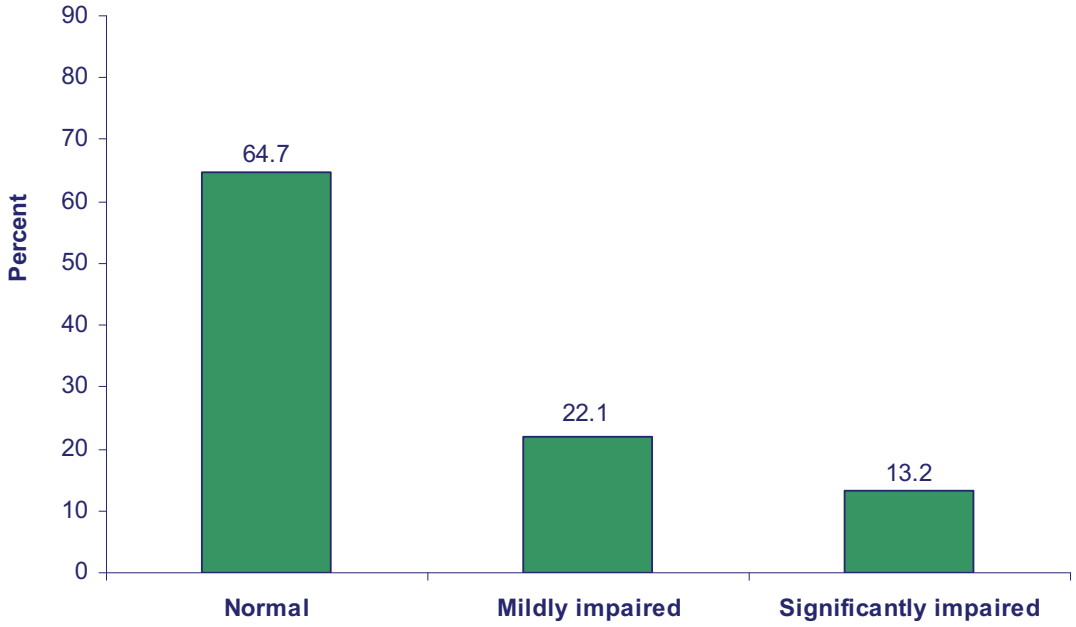
Figure 5.6: Visit to ER during Preceding Month



5.3.5 Patient's General Functional Level on Admission

For approximately 65% of patients, functional level on admission was normal. Functioning was mildly impaired in 22% of cases, and significantly impaired in 13%.

Figure 5.7: Patient's General Functional Level



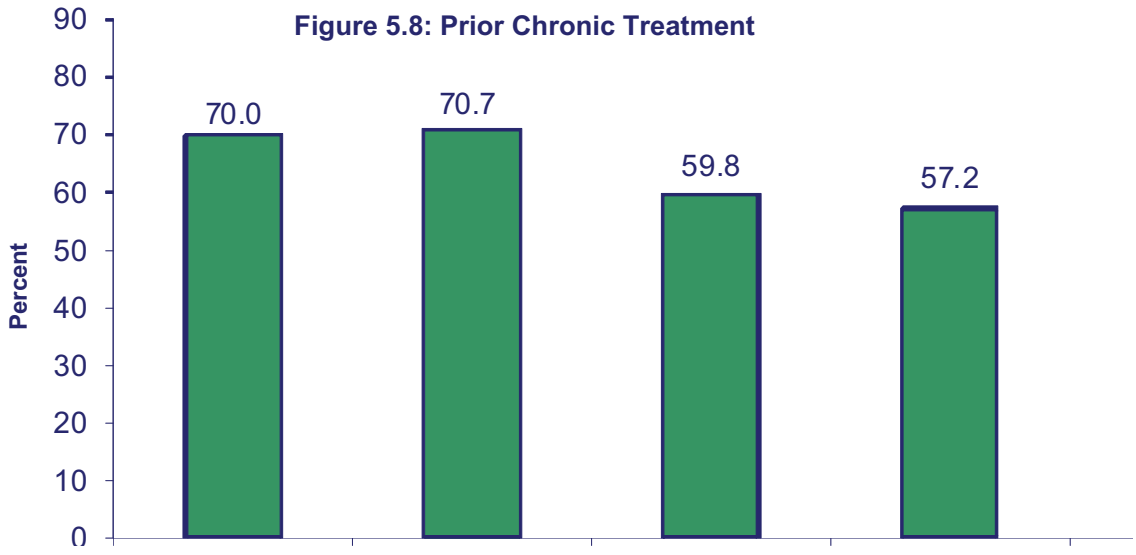
5.4 Prior Chronic Treatment

70% of patients were being treated with aspirin before hospitalization. Other drugs in common use were ACE inhibitors or ARB, beta blockers, lipid-lowering drugs, hypoglycemic drugs, calcium antagonists, diuretics and PPI.

Table 5.5: Prior Chronic Treatment

Prior chronic treatment	%
Aspirin	70.0
Clopidogrel	19.6
Anticoagulants	8.6
ACE inhibitor	46.4
ARB	15.6
ACE-I/ARB	59.8
Aldosterone receptor antagonist	3.9
Beta-blockers	57.2
Digoxin	2.0
Diuretics	35.0
Insulin	13.6
Hypoglycemic drugs (Oral)	31.3
LLD	72.1
Statins	70.7
Fibrate	5.2
Ezetimibe	1.2
Calcium channel blockers	30.0
Nitrates	16.7
PPI	29.4
H2 blockers	8.9
Other drugs	55.3

Figure 5.8: Prior Chronic Treatment



5.5 Transportation, Pre-Admission and Admission Information

5.5.1 Mode of Transportation

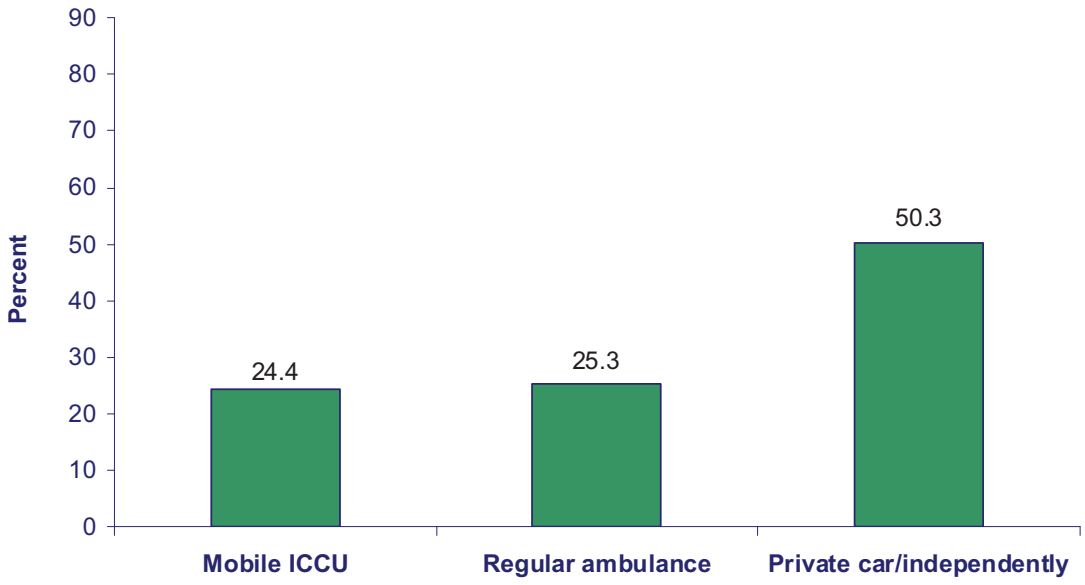
Half the patients arrived by means of private transportation, approximately one quarter were transported to hospital via mobile CCU, a further quarter by regular ambulance.

Table 5.6: Mode of Transportation

Transport to hospital*	n	%
Mobile ICCU	76	24.4
Regular ambulance	79	25.3
Private car/independently	157	50.3

*excluding 100 in-patients.

Figure 5.9: Mode of Transportation



5.5.2 Patient Location on Onset, First Arrival and First Ward of Hospitalization

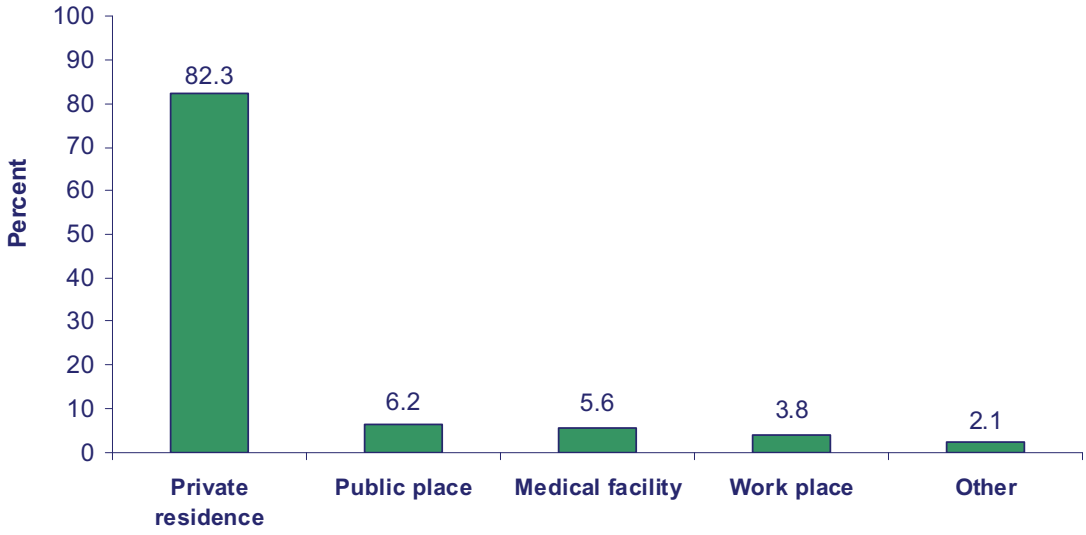
The most frequent location at the time of ACS onset was a private residence (82% of all patients). The ward of first arrival for almost 100% of patients was the ER, and for 97% of patients the first ward of hospitalization was the Internal Medicine Department.

Table 5.7: Location on Onset, First Arrival and First Ward of Hospitalization

Location of onset*	n	(%)
Private residence	306	82.3
Public place	23	6.2
Medical facility	21	5.6
Work place	14	3.8
Other	8	2.1
First Arrival		
Emergency Room	398	99.8
First Ward of Hospitalization		
CCU	5	1.2
Cardiology	2	0.5
Chest pain unit	2	0.5
Internal medicine	399	97.1
Other	3	0.7

*data missing for 40 patients

Figure 5.10: Patient Location on Onset



5.5.3 Length of Time from Symptom Onset to Admission

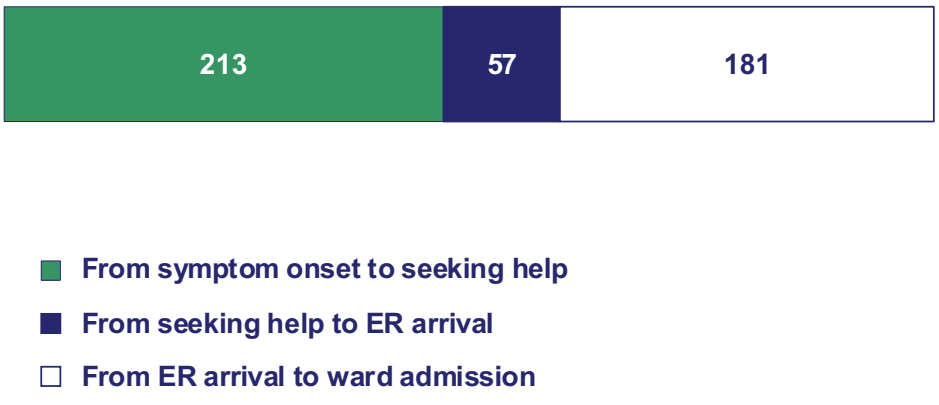
The median time elapsing from symptom onset to help-seeking was 3.5 hours (213 minutes), and reached more than 24 hours for 25% of all patients. The median time from onset to arrival was 4.5 hours, however for 25% of patients this delay was less than an hour and a half. The median overall time elapsing between symptom onset and hospitalization was almost 9 hours, and for 25% of patients reached over 24 hours.

Table 5.10: Length of Time from Symptom Onset to Admission

Time elapsing from:	Length of time (minutes)		
	N*	Median	25%-75%
Onset to seeking help	154	213	60-1440
Seeking help to ER arrival	150	57	36-98
ER arrival to first ward of admission	281	181	125-267
Onset to ER arrival	186	270.5	86-1127
Onset to first ward of admission	179	525	300-1614

* Data missing for 50% of patients

Figure 5.11: Median Length of Time from Symptom Onset to Admission (minutes)



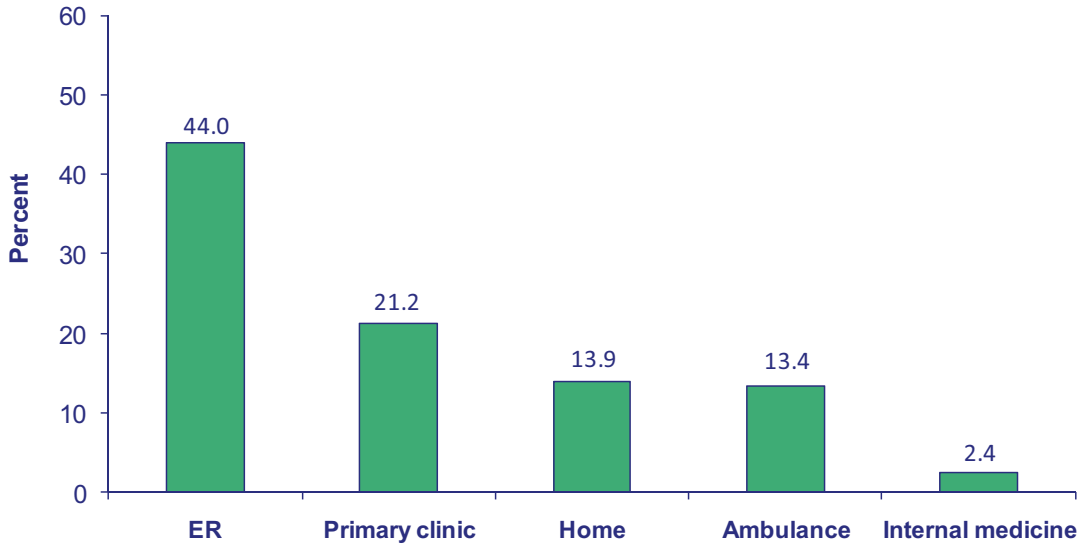
5.5.6 First Medical Contact

44% of patients experienced their first medical contact in the emergency room, 21.2% in a primary clinic setting, 13.4% in the ambulance and 13.9% at home.

Table 5.11: First Medical Contact

First medical contact	n	%
ER	181	44.0
Primary clinic	87	21.2
Home	57	13.9
Ambulance	55	13.4
Internal medicine	10	2.4

Figure 5.12: First Medical Contact



5.5.7 Presenting Symptoms and Killip Class

Two-thirds of patients presented with typical angina, and 15.8% presented with atypical chest pain. Dyspnea was present in just over 50% of patients. Close to three-quarters of patients presented with Killip class 1, 16.5% with Killip class 2 and less than 10% presented with Killip classes 3 or 4.

Table 5.12: Presenting Symptoms at First Medical Contact

Symptoms	n	%
Typical angina	276	67.0
Atypical chest pain	65	15.8
Syncope/Aborted SCD	16	3.9
Arrhythmia	18	4.4
Dyspnea	207	50.2
Other	58	14.7

Figure 5.13: Presenting Symptoms at First Medical Contact

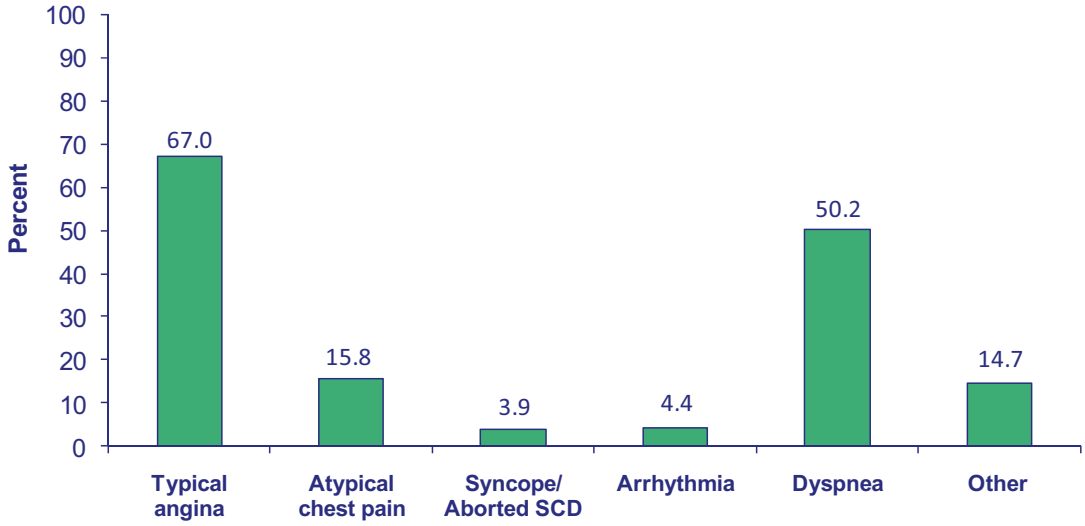
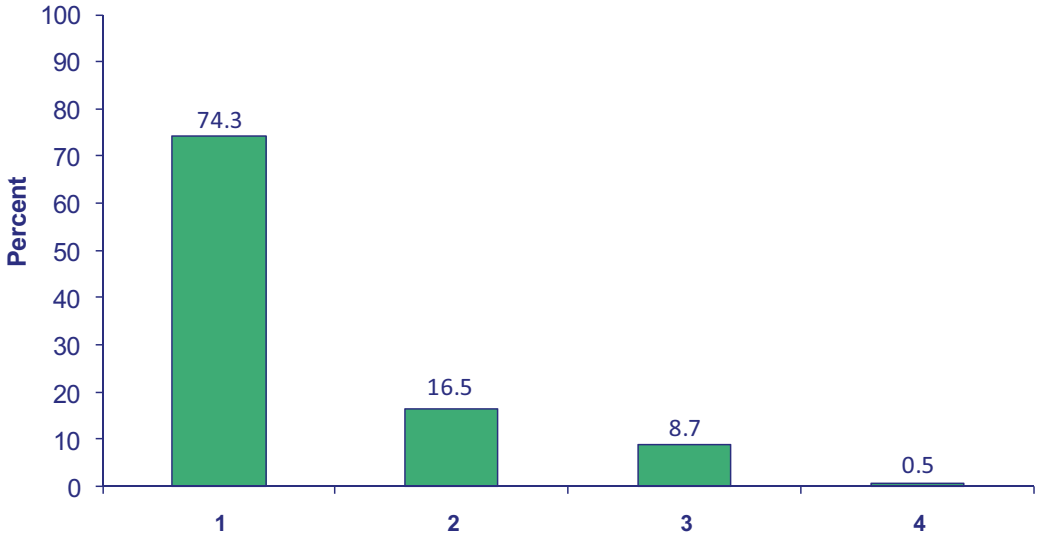


Table 5.12A: Killip Class on Admission

Killip Class	n	%
1	306	74.3
2	68	16.5
3	36	8.7
4	2	0.5

Figure 5.14: Killip Class on Admission



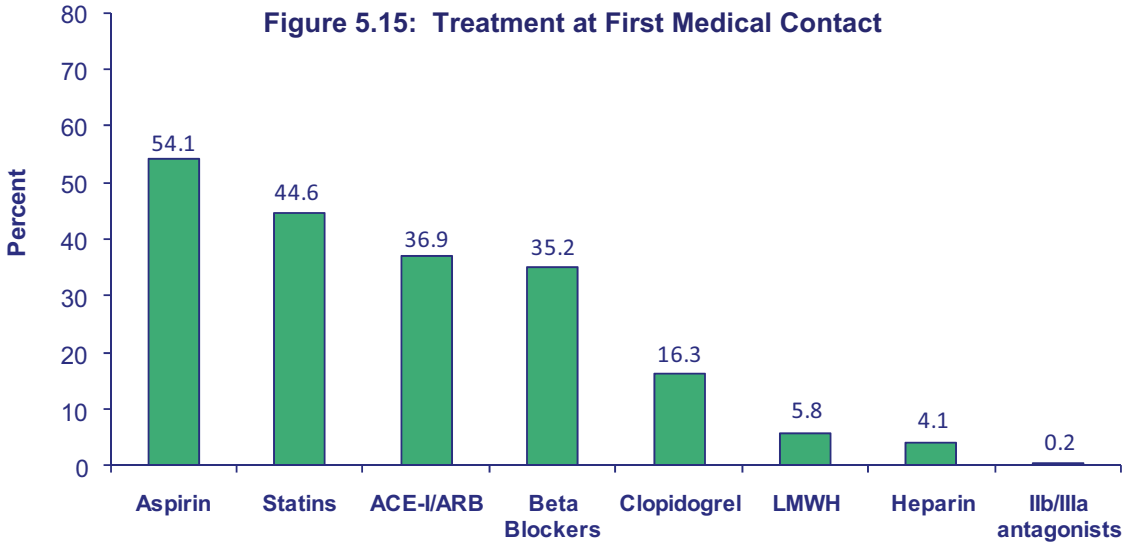
5.5.8 Treatment at First Contact

At first medical contact, 54% of patients received aspirin, and almost 45% received statins. ACE-inhibitors/ARB were administered to almost 40% of patients, and beta-blockers to 35.2%. 16.3% of patients received Clopidogrel and 20% received PPI.

Table 5.13: Treatment at First Medical Contact

Treatment	n	%
Aspirin	223	54.1
Clopidogrel	67	16.3
Beta-blockers	145	35.2
Diuretics	115	28.7
ACE-I	115	27.9
ARB	40	9.7
ACE-I/ARB	152	36.9
Statins	180	44.8
Heparin unfractionated (regular)	17	4.1
LMW heparin (fractionated)	24	5.8
IIb/IIIa antagonists	1	0.2
Narcotics	8	2.0
Nitrates	66	16.4
Antiarrhythmics	12	2.9
PPI	80	19.9
H2 blockers	24	5.9

Figure 5.15: Treatment at First Medical Contact

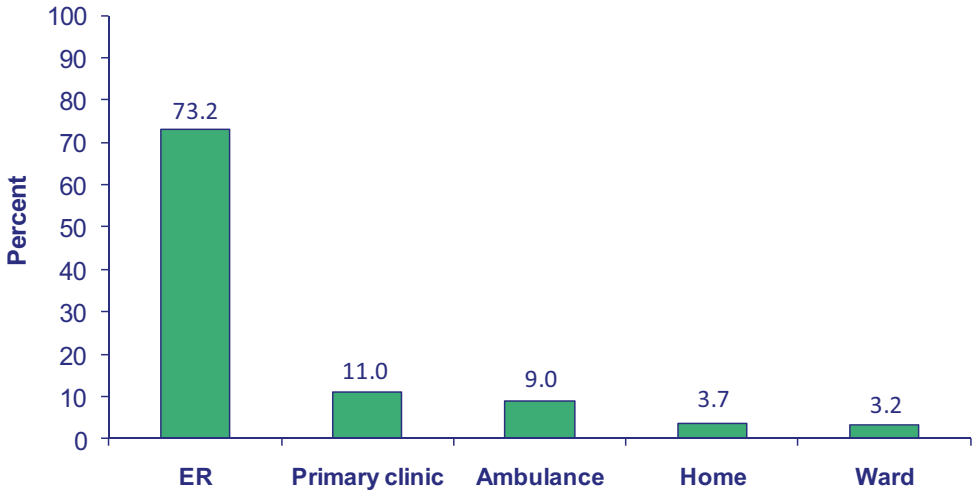


5.6 First Recorded ECG

5.6.1 Location of First ECG Recording

For almost three-quarters of patients (73.2%) their first ECG recording was in the ER. 11% had their first recording in a primary clinic, 9% in the ambulance, 3.7% at home a further 3.2% in the ward.

Figure 5.16: Location of First ECG Recording



5.6.2 First ECG Rhythm

86.8% of patients presented with a normal sinus rhythm. Atrial fibrillation was present in 7.6% of patients.

Table 5.14: First ECG Rhythm

Rhythm	n	%
NSR	355	86.8
AF	31	7.6
SVT	2	0.5
VT/VF	--	--
Other	21	5.1

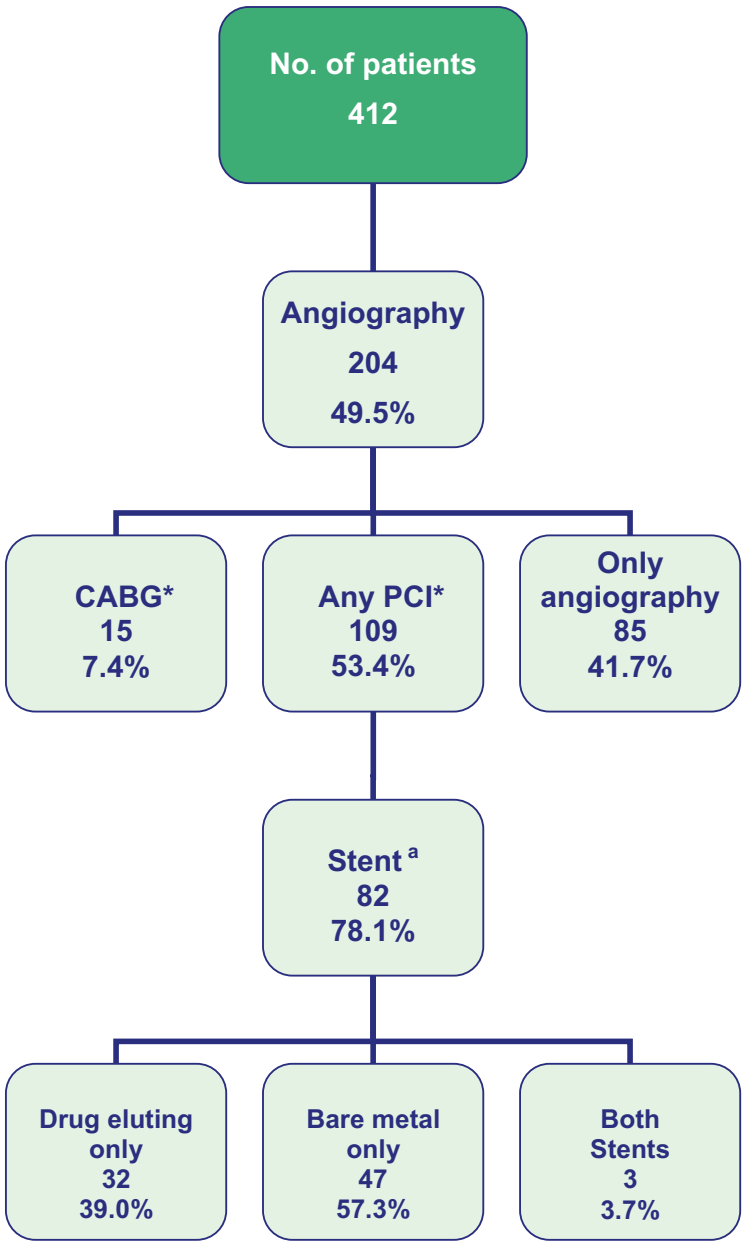
*** Data missing for 3 patients**

5.8 In-Hospital Cardiac Interventions and Procedures

5.8.1 Coronary Angiography and Interventions

Approximately 50% of patients underwent coronary angiography, and 51.2% of these underwent PCI. Stents were deployed in 78% of PCI's. Bare metal stents were more often used than drug-eluting stents.

Figure 5.17: In-Hospital Cardiac Interventions and Procedures



* 5 patients underwent both CABG and PCI.

5.8.2 Other Procedures

Close to one third of patients (31.6%) underwent echocardiography, 7.5% underwent stress test/SPECT, and in 4% mechanical ventilation was administered.

Table 5.19: Other Procedures

Procedure	n	%
DC shock	2	0.5
Resuscitation (CPR)	6	1.5
Ventilation	16	4.0
IA Balloon	3	0.8
ECHO	125	31.6
EPS	3	0.8
Stress test/SPECT	30	7.5
Permanent pacemaker	1	0.3
Temporary pacemaker	2	0.5
Hypothermia for anoxic brain damage	3	0.8

5.10 In-Hospital Complications

The most frequent complications were: mild-moderate CHF (15.9 of patients), pulmonary edema (11.4%), acute renal failure (9.9%) and infection (8.4%). Major bleeding occurred in 3.5% of patients.

Table 5.21: In-Hospital Complications

Complications	n	%
CHF mild-moderate (Killip 2)	64	15.9
Pulmonary edema (Killip 3)	46	11.4
Cardiogenic shock (Killip 4)	7	1.7
Hemodynamically significant RVI	5	1.2
Re-MI	10	2.5
Post MI angina /re-ischemia	13	3.2
Tamponade	1	0.2
Moderate-severe MR	11	2.8
RBBB (new onset)	3	0.7
LBBB (new onset)	5	1.2
High degree AVB	2	0.5
Sustained VT	1	0.2
Primary VF	2	0.5
AF	11	2.7
Asystole	3	0.7
TIA	3	0.7
Stroke	3	0.7
CVA/TIA in hospital	6	1.5
Acute renal failure	40	9.9
Major bleeding	14	3.5
Infection	34	8.4

5.11 In-Hospital Medical Treatment

The most frequent in-hospital medications in use were aspirin (93.9% of patients), statins (87.1%), beta-blockers (80.3%), clopidogrel (77.2%), ACE-inhibitors/ARB (70.2%) and LMW heparin (70.1%). Diuretics were administered to 42.2% of patients and PPI to 41.2%.

Table 5.22: In-Hospital Medical Treatment

Treatment	n	%
Aspirin	387	93.9
Clopidogrel	318	77.2
Warfarin	20	4.9
Heparin (unfractionated/regular)	20	4.9
LMW heparin (fractionated)	289	70.1
ACE-I	230	56.2
ARB	63	15.4
ACE-I/ARB	288	70.2
IIb/IIIa antagonists	5	1.2
Aldosterone receptor antagonist	21	5.1
Beta-blockers	331	80.3
IV inotropic agent	8	2.0
Digoxin	6	1.5
Diuretics	174	42.2
Insulin	70	17.1
Hypoglycemic drugs (Oral)	108	26.2
LLD	365	88.6
Statins	359	87.1
Fibrate	24	5.9
Ezetimibe	6	1.5
Calcium channel blockers	118	28.8
PPI	169	41.2
H2 blockers	79	19.2

5.12 Length of Hospital Stay

The median length of hospital stay was 5 days. For 25% of patients, the median length of stay was 8 days or longer.

Table 5.23: Length of Hospital Stay

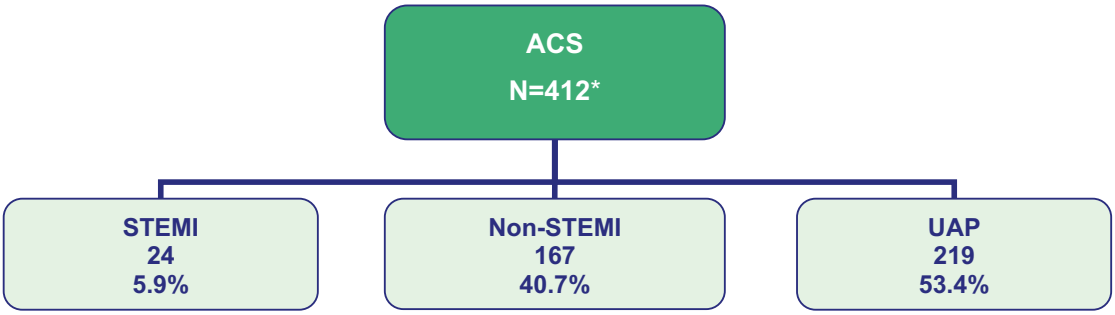
	Mean (SD)	Median	25%-75%
Total days in Hospital	6.7±5.7	5.0	4.0-8.0

5.13 Discharge Diagnosis

5.13.1 Discharge Diagnosis

The majority of patients with ACS in internal medicine wards (53.4%) were discharged with a diagnosis of UAP, 40.7% with a diagnosis of non-STEMI, and 5.8% of patients with STEMI.

Figure 5.18: Discharge Diagnosis



*data missing for 2 patients

5.13.2 ECG Findings: Q-waves

On discharge ECG, new abnormal Q-waves were recorded in only 9.3% of patients.

Table 5.24: ECG Findings: Q waves

Q-waves	n	%
No	352	90.7
Yes	36	9.3

5.14 Medical Treatment on Discharge

The most frequent medications prescribed on discharge were aspirin (91.9% of patients), statins (88%), beta-blockers (80.7%), ACE-inhibitors/ARB (74.2%), and clopidogrel (69.6%). Diuretics were prescribed for 41.2% of patients, PPI for 38.7%, hypoglycemic drugs for 29% and calcium channel blockers for 28.2%.

Table 5.26: Medical Treatment on Discharge among Hospital Survivors

Recommended treatment	N=397	%
Aspirin	361	91.9
Clopidogrel	272	69.6
Prasugrel	1	0.3
Warfarin	28	7.2
LMW	20	5.1
ACE-inhibitors	234	60.0
ARB	60	15.3
ACE-I/ARB	290	74.2
Aldosterone receptor antagonist	21	5.4
Beta-blockers	317	80.7
Digoxin	5	1.3
Amiodrone	13	3.3
Diuretics	163	41.2
Insulin	62	15.9
Hypoglycemic drugs	115	29.0
LLD	351	89.5
Statins	345	88.0
Fibrate	21	5.4
Ezetimibe	7	1.8
Calcium channel blockers	110	28.2
Nitrates	80	20.5
PPI	151	38.7
H2 blockers	71	18.2

5.15 Re-Hospitalization within 30 Days of Admission

27.1% of patients were rehospitalized within 30 days of admission. In 48% of cases, the rehospitalization was due to an urgent cardiac event.

Table 5.27: Re-Hospitalization* within 30 Days of Admission

	n	%
Re-hospitalization % (n)	94	27.1
Reason for Re-hospitalization		
Scheduled	21	22.3
Urgent cardiac event	45	47.9
Non-cardiac hospitalization	28	29.8

* Rehospitalization among hospital survivors

5.16 Mortality and Major Adverse Cardiac Events (MACE)

The 7-day mortality rate was 1.7% and the 30-day mortality rate was 4.5%. The rate of MACE was 16.3%. Mortality and MACE rates were comparable in men and women.

Table 5.28: Unadjusted Rates of 7-Day Mortality, 30-Day Mortality and MACE

Mortality	n	%
7-day	7	1.7
30-day	18	4.5
MACE*	67	16.3

*see definition above

Figure 5.19: Unadjusted Rates of 7-Day Mortality, 30-Day Mortality and MACE

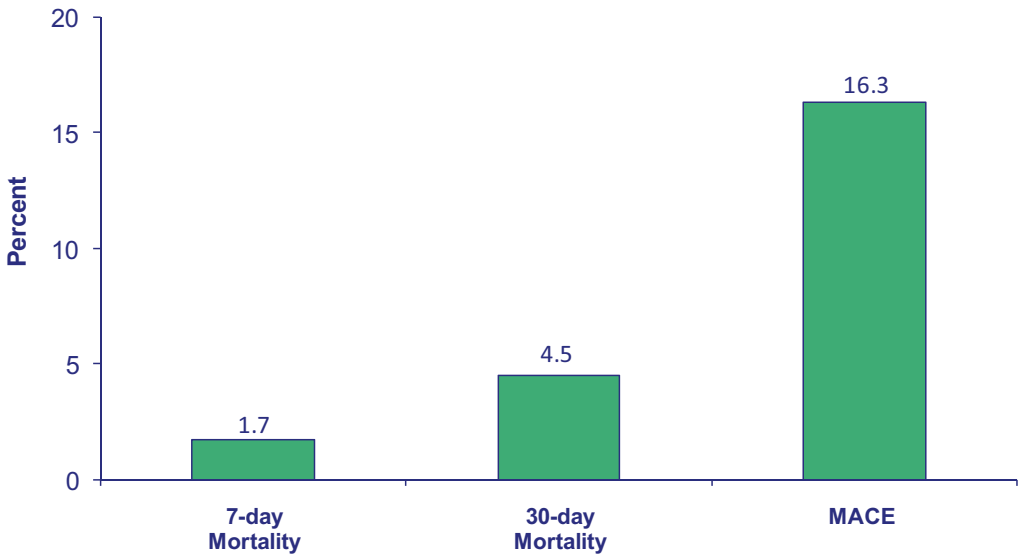


Table 5.29: Unadjusted Rates of 7-Day Mortality, 30-Day Mortality and MACE, by Sex

Outcome	Men (n=260) (%)	Women (n=152) (%)	Total (N=412) (%)	p
7-day mortality	2.0	1.3	1.7	0.64
30-day mortality	3.6	6.0	4.5	0.25
MACE*	14.2	19.7	16.3	0.14

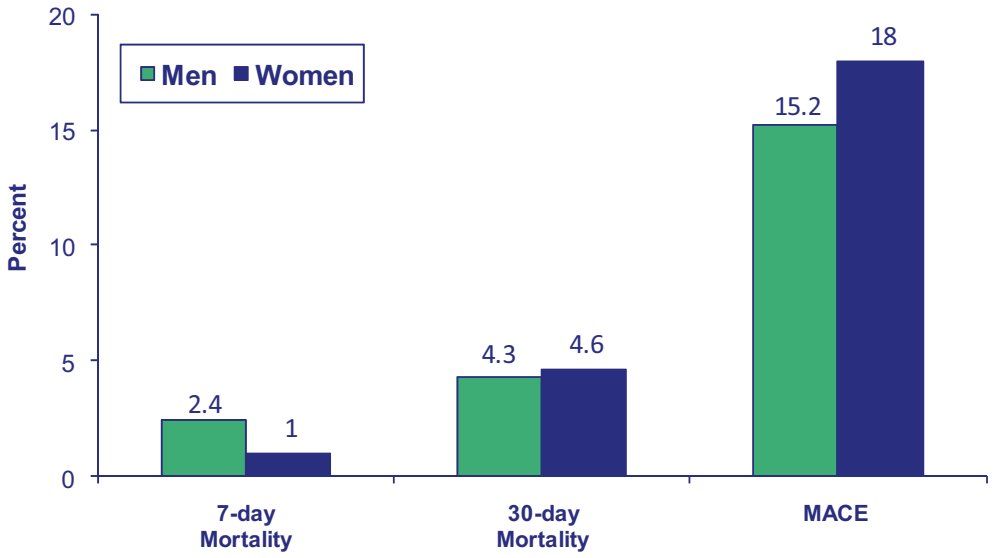
*see definition above

Table 5.30: Rates of Mortality and MACE by Sex, Adjusted for Age and Other Risk Factors

Outcome	Men (n=260) (%)*	Women (n=152) (%)*	Age-Adjusted OR (95% CI) (Women vs Men)	Risk factor Adjusted OR** (95% CI)
7-day mortality	2.4	1.0	0.36 (0.07-2.01)	0.06 (0.003-1.41)
30-day mortality	4.3	4.6	1.05 (0.40-2.90)	0.92 (0.29-3.00)
MACE***	15.2	18.0	1.21 (0.70-2.09)	1.23 (0.68-2.21)

* age adjusted
** adjusted for age, past MI, diabetes, hypertension, Killip class≥2, any angiography
*** see definition above

Figure 5.20: Adjusted Rates of Mortality and MACE, by Sex



Concluding Remarks

The present brochure presents selected data from ACSIS 2010, the 10th biennial National Survey on Acute Coronary Syndromes in Israel. The ACSIS 2010 "Decade" Survey bears witness to the fruitful ongoing collaboration between the Israel Heart Society, the Israel Society for the Prevention of Heart Attacks and the Israel Center for Disease Control (ICDC).

In addition, it is most gratifying that in ACSIS 2010, a representative sample of Internal Medicine Departments were included. This significant addition allows for a more complete representation of patients with ACS in Israel, in terms of demographic and clinical characteristics, treatment and outcome.

Further welcome and important additions to the ACSIS 2010 survey and to this brochure are chapter 3, which presents an updated, comprehensive picture of the catheterization treatment of patients with ACS, including the extent of use of stents and other devices as well as specific outcomes of the interventions; and chapter 4, which relates to non-ACS patients hospitalized in ICCU (comprising just over 50% of all ICCU patients) in terms of diagnosis, procedures performed and outcomes.

The marked improvements over the last decade in the management and outcome of patients with ACS include an impressive decline of more than 50% in 7-day and 30-day mortality rates. The results of this survey clearly demonstrate the high quality of care provided in hospitals in Israel, reflecting the use of modern technology and advanced therapies, as well as adherence to clinical guidelines.

It is interesting to note that the 15% decrease in total number of patients with coronary disease which was observed in the 2008 survey has not changed in the 2010 survey, perhaps reflecting a decline in the prevalence of coronary disease, or better care of coronary patients in the community, or a combination of these factors.

The database created by the ACSIS surveys is a unique resource that facilitates the identification of time trends in management and outcomes of patients with ACS in Israel, and for comparison with other countries. The valuable data provided by the additional arms of the 2010 survey serve as an important baseline for the examination of trends in future surveys.

I would like to congratulate the Survey Coordinators, the Israel Society for the Prevention of Heart Attacks (ISPHA), the teams of the working groups on Intensive Cardiac Care and Interventional Cardiology, and the Israel Society of Internal Medicine on the success of this survey. We look forward to our continued and fruitful cooperation in the building of this important database.

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Appendix

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האיגוד הישראלי לרפואה פנימית
Israel Society of Internal Medicine

The Working Group on Intensive Cardiac Care- Israel Heart Society
In cooperation with: the Working group on Inverventional Cardiology
and the Israel Society for Internal Medicine

Acute Coronary Syndrome Israeli Survey - 2010

This form should be completed for all patients with ACS (AMI or Unstable AP) admitted between 1/3/2010 and 30/4/2010

Center |___|___| *Ward |___|___| Patient # |___|___|___|

(reporting department)*

Hospitalization #: |___|

ID *(last 4 digits):* |___|___|___|___|

Initials: |___|___| 1st family

Informed consent obtained: ○ 0 No ☐ 1 Yes

1. Demographics, History and Risk Factors:

1-ultra-orthodox, 2-orthodox, 3- traditional. 4-Secular. 5- other

Year of Birth: 19|___|___| **Sex:** ☐ 1 Male ☐ 2 Female **Religion observance:** |___|

Origin ☐ 1 Israeli Jew *specify* **Country of Birth**: _____ **Immigration year**: |___|___|___|___|
☐ 2 Israeli Arab ☐ 3 Other Israeli ☐ 4 Tourist ☐ 5 other

Level of Education: ☐ 1 Elementary ☐ 2 High school ☐ 3 Higher education/ Academic **School years:** |___|___|
Marital Status: ☐ 1 Single ☐ 2 Married/Attached ☐ 3 Divorced ☐ 4 Widow **Children #:** |___|___|

Height |___|___|___| *cm* **Weight** |___|___|___| *kg* **Waist Circumference:** |___|___|___| *cm*

Kupat Holim: ☐ 1 Clalit ☐ 2 Maccabi ☐ 3 Meuhedet ☐ 4 Leumit ☐ 5 Other: _____

Emergency/Telemedicine Service Subscription:
○ 0 No ☐ 1 Yes *specify*: ☐ 1 SHAHAL ☐ 2 NATALI ☐ 3 Other: _____

Prior Cardiovascular History:

	No	Yes
MI…….	○ 0	☐ 1
Prior AP ≥24 *hours*	○ 0	☐ 1
CABG ……..	○ 0	☐ 1
PCI ……...	○ 0	☐ 1
CHF …….	○ 0	☐ 1
Chronic renal failure	○ 0	☐ 1
PVD……..	○ 0	☐ 1
Stroke/TIA ……..	○ 0	☐ 1

Risk Factors for CAD:

	No	Yes	Newly diagnosed
Dyslipidemia …….	○ 0	☐ 1	☐
Family history of CAD .	○ 0	☐ 1	
Smoking:			
○ 0 Never ☐ 1 Past ☐ 2 Current			
Hypertension …….	○ 0	☐ 1	☐
Diabetes: ……..	○ 0	☐ 1	☐
☐ 1 Type 1 ☐ 2 Type 2			

Prior visit to ER during the last month: ○ 0 No ☐ 1 Yes *complete*

Reason: ☐ Cardiovascular *specify* **Date**: |___|___| / |___|___| /2010 (*day* / *month*) ☐ Other *specify:* _____

Visit resulted in hospitalization? ○ 0 No ☐ 1 Yes

Patient's General Function Level: ☐ 1 Normal ☐ 2 Mildly impaired ☐ 3 Significantly impaired

Severe concomitant disease:	No	Yes
Cancer *within 5 years*……..	○ 0	☐ 1
COPD/Asthma ……	○ 0	☐ 1
Thyroid related disease ……	○ 0	☐ 1
Rheumatic disease ……	○ 0	☐ 1

	No	Yes
Alzheimer / Dementia …….	○ 0	☐ 1
Other life-threatening disease …	○ 0	☐ 1
*specify:*_____		

Center | Ward | Patient #

Prior Chronic Treatment: List all drugs administrated during the last month

	No Yes	Trade Name *(specify one per line)*	Total Daily Dose *mg*
Aspirin……..	○0 □1		
Anticoagulants:			
Warfarin or other oral anticoagulants …	○0 □1		
Clopidogrel …….....	○0 □1		
Other antiplatelet	○0 □1		
ACE-I …….……	○0 □1		
ARB …….	○0 □1		
Beta blockers…….	○0 □1		
Digoxin……..	○0 □1		
Amiodarone ……..	○0 □1		
Other antiarrhythmics ……	○0 □1		
Diuretic …….	○0 □1	**1.**	
		2.	
Aldosterone receptor antagonist……	○0 □1		
Insulin……..…..	○0 □1	**1.**	
		2.	
Hypoglycemic drugs (Oral) …….	○0 □1	**1.**	
		2.	
		3.	
Statins ……..…….……	○0 □1		
Fibrate …….	○0 □1		
Ezetimibe …….	○0 □1		
Niacin …….	○0 □1		
Omega-3 …….	○0 □1		
Calcium channel blocker.……	○0 □1		
Nitrates…….	○0 □1		
PPI ……..	○0 □1		
H_2 blockers …….	○0 □1		
Eltroxin ……..	○0 □1		
Steroids (systemic) ……...	○0 □1		
Inhalers (COPD/Asthma) ……	○0 □1		
Other drug ……	○0 □1	**1.**	
		2.	
		3.	

Vaccine before hospitalization? ○0 No □1 Yes *specify:* **Month/Year:** |__|__| / **20** |__|__|

Type: Flu ○0 No □1 Yes
H1A1 flu ○0 No □1 Yes
Pneumovax ○0 No □1 Yes

Center |___|___|___| Ward |___|___|___| Patient

2. Onset, Transportation and Admission Information:

day month hour min NA

Symptom Onset…… |__|__| / |__|__| /2010 |__|__|:|__|__| △ 2

Patient location at onset: ☐ 1 Private residence ☐ 2 Public place ☐ 3 Medical facility:_____
☐ 4 Work place ☐ 5 Other: _____

First Call for Medical Attention …… |__|__| / |__|__| /2010 |__|__|:|__|__| △ 2

First Arrival to: ☐ 1 ER ☐ 2 Directly to CCU ☐ 3 Directly to cath laboratory ☐ 4 In-Patient
…… |__|__| / |__|__| /2010 |__|__|:|__|__| △ 2

1st Hospitalized in: ☐ 1 CCU ☐ 2 Cardiology ☐ 3 Chest pain unit ☐ 4 Internal medicine ☐ 5 Other
…… |__|__| / |__|__| /2010 |__|__|:|__|__| △ 2

Patient transferred? ○ 0 No ☐ 1 Yes *specify* **To**: ☐ 1 CCU/Cardiology ☐ 2 Internal Medicine ☐ 3 Other
Date Transferred: …… |__|__| / |__|__| /2010 |__|__|:|__|__| △ 2

Mode of Transportation:

☐ 1 Mobile ICCU *specify* ☐ 1 MADA ☐ 2 SHAHAL ☐ 3 NATALI
☐ 2 Regular ambulance
☐ 3 Private car / independently
☐ 4 Not relevant (*e.g.* in-patient)

Reason ambulance not used:

☐ 1 Ambulance not available
☐ 2 Advice from medical staff
☐ 3 Patient's decision
☐ 4 Other

---

3. Vital Signs and Management on First Medical Contact:

First medical contact at:

☐ 1 Home ☐ 2 Primary clinic ☐ 3 Ambulance ☐ 4 ER ☐ 5 Internal Medicine
☐ 6 CCU/Cath lab ☐ 7 Other ward ☐ 8 Other:_____

Presenting Symptoms: ☐ Typical angina ☐ Dyspnea ☐ CPR/DC Shock
☐ Syncope ☐ Atypical chest pain ☐ Other: _____
☐ aborted SCD ☐ Arrhythmia

Killip class: 1 2 3 4 **Heart Rate** (*beats/minute*): |__|__|__| **Temperature** (*°C*): |__|__|.|__|

Blood Pressure (*mmHg*): **Systolic** |__|__|__| / **Diastolic** |__|__|__|

First ECG recorded: |__|__| / |__|__| /2010 |__|__|:|__|__|
day month hour min

Performed at: ☐ 1 Home ☐ 2 Ambulance ☐ 3 ER ☐ 4 Hosp. Ward ☐ 5 Primary clinic

Rhythm: ☐ 1 NSR ☐ 2 AF ☐ 3 SVT ☐ 4 VT/VF ☐ 5 2-3 ° AV block ☐ 6 Other: ____

QRS: ☐ 1 Normal ☐ 2 Pacemaker ☐ 3 LBBB ☐ 4 RBBB ☐ 5 Other _____ ☐ 6 Unknown

ECG Pattern: *tick only one*

○ 0 Normal ☐ 1 ST-elevation ☐ 2 ST-depression ☐ 3 T inversion only
☐ 4 No new ST- T changes ☐ 5 Undetermined ECG findings *(LBBB, Pacing, Severe LVH)*

4. Primary Reperfusion Therapy in STE-ACS or new LBBB Patients:

Primary Reperfusion: ○0 No ☐1 Yes *(specify one below)*

Type of Reperfusion: ☐1 Thrombolysis

☐2 Angiography **Followed by**: ☐1 Primary PCI ☐2 Urgent CABG

Date and Time: |__|__| / |__|__| /2010 ⏲|__|__| :|__|__| *(Angio/PCI-Complete No. of vessels in section 5)*
day month hour min

I. Thrombolytic Therapy (TLx):

TLx Agent : ☐1 STK ☐2 tPA **Dose**: ☐1 Full dose ☐2 Half dose

Date: |__|__| / |__|__| / 2010 ⏲ |__|__|:|__|__| **Pre-hospital?** ○0 No ☐1 Yes
Day month hour minutes

Was TLx judged to be clinically successful? ○0 No ☐1 Yes

II. Primary PCI : *Performed within 12 hours from symptom onset. If performed later (>12h) enter data on paragraph 5.*

Vascular access: ☐1 Femoral ☐1 Radial

Infarct Related Artery *(check one)*: ☐1 LMCA ☐2 LAD ☐3 LCx ☐4 RCA ☐5 SVG ☐6 Unknown

PCI for Additional Lesions: ○0 Not required
☐1 In same procedure ☐2 Separate procedure ☐3 After discharge
(Complete details in section 5)

TIMI grade flow –before revascularization *(First injection)*: 0 1 2 3

Pre/Peri procedure preparation with use of:
☐ IV fluids ☐ Siran ☐ Bicarbonate ☐ Statin loading

Primary PCI With Use of:

☐ **IIb/IIIa Antagonist:** ☐1 Reopro ☐2 Integrilin ☐3 Aggrastat
Date & time: |__|__| / |__|__| /2010 |__|__| :|__|__|
day month hour min
Started: ☐1 Before PCI ☐2 During/after PCI

☐ **Clopidogrel:** → **Loading Dose:** → |__|__|__| *mg*
Date & time: |__|__| /|__|__|/2010 |__|__| :|__|__|
day month hour min
Started: ☐1 Before PCI ☐2 During/after PCI

☐ **Prasugrel**: **Loading Dose:** |__|__|__| *mg*
☐1 Before PCI ☐2 During/after PCI

☐ **Bivalirudin** (Angiomax)

☐ **Stent:** **Nº of Bare metal:** |__| **Nº of Drug Eluting:** |__|

☐ **Protective/Aspiration Device**

TIMI grade flow -following the procedure: 0 1 2 3

Center | Ward | Patient

Reasons for not Performing Primary Reperfusion *(TLx or PCI)* **for ST Elevation or New LBBB**

(check all that apply):

- ☐ Spontaneous reperfusion
- ☐ Late arrival at hospital
- ☐ Misdiagnosis
- ☐ Contraindication to TLx
- ☐ Contraindication to PCI
- ☐ Considered not indicated
- ☐ Died before decision
- ☐ Patient refusal
- ☐ Other *specify* _____

5. Additional Cardiac Interventions and Procedures in CCU/Cardiology:

Coronary Angiography *(**excluding** primaryPCI):* ○ 0 No ☐ 1 Yes

***If yes specify**:* ☐ 1 Event Driven ☐ 2 Ward policy **Date:** |__|__| / |__|__| / 2010 (clock) |__|__|:|__|__|
day *month* *hour* *minutes*

***If no specify the reason for not performing coronary angiography**:*

☐ 1 Contraindicated ☐ 2 Not indicated ☐ 3 Patient's refusal ☐ 4 Scheduled post discharge

Was Coronary Angiography Followed by Intervention? ○ 0 No ☐ 1 Yes (*specify below)*

☐ **PCI** *(**excluding** primary)* **To** *(check all)*: ☐ LM ☐ LAD ☐ LCX ☐ RCA ☐ SVG ☐ Unknown

Pre/Peri procedure preparation with use of:

☐ IV fluids ☐ Siran ☐ Bicarbonate ☐ Statin loading

With Use of:

☐ **IIb/IIIa Antagonist:** ☐ 1 Reopro ☐ 2 Integrilin ☐ 3 Aggrastat
Started: ☐ 1 Before PCI ☐ 2 During/after PCI

☐ **Clopidogrel:** → **Loading Dose:** →|__|__|__| *mg*
Started: ☐ 1 Before PCI ☐ 2 During/after PCI

☐ **Prasugrel**: **Loading Dose:** → |__|__|__| *mg*
Started: ☐ 1 Before PCI ☐ 2 During/ after PCI

☐ **Bivalirudin** (Angiomax)

☐ **Stent:** **Nº of Bare:** |__| **Nº of Drug Eluting:** |__|

☐ **Protective/Aspiration Device**

☐ **CABG** **Date:** |__|__| / |__|__| / 2010

Number of Diseased Vessels *(according to any angiography)*: |__|__| *(0=None, 1, 2, 3, 99=Unknown)*

Other Procedures:

	No	Yes		No	Yes		No	Yes
DC shock ……	○ 0	☐ 1	AICD/CRT ……..	○ 0	☐ 1	Permanent pacemaker	○ 0	☐ 1
Resuscitation (CPR)…	○ 0	☐ 1	Echo ……..	○ 0	☐ 1	Temporary pacemaker	○ 0	☐ 1
Ventilation ……..…	○ 0	☐ 1	EPS ……	○ 0	☐ 1	Hypothermia for anoxic brain damage	○ 0	☐ 1
IA Balloon …….	○ 0	☐ 1	Stress test /SPECT.	○ 0	☐ 1			

Center	Ward	Patient
|___|	|___|	|____|

EF Determined? ○ 0 No ☐ 1 Yes *specify* **Date**: |__|__| / |__|__| / 2010 ⊕ |__|__|:|__|__|
day *month* *hour* *minutes*

By: ☐ 1 Echo ☐ 2 Ventriculography ☐ 3 Radionuclear scan

EF: |__|__| % ☐ 1 Normal (≥50%) ☐ 2 Mild (40-49%) ☐ 3 Moderate (30-39%) ☐ 4 Severe (<30%)

6. In Hospital Complications:

	No	Yes		No	Yes
CHF mild-moderate *(Killip-2)…..	○ 0	☐ 1	High degree (2-3°) AVB ……..	○ 0	☐ 1
Pulmonary edema *(Killip-3) …..	○ 0	☐ 1	Sustained VT *(>125 bpm)* …….	○ 0	☐ 1
Cardiogenic shock *(Killip-4) …...	○ 0	☐ 1	Primary VF ……..	○ 0	☐ 1
Hemodynamically significant RVI...	○ 0	☐ 1	Secondary VF ……..	○ 0	☐ 1
Re-MI ……..….	○ 0	☐ 1	AF (new onset) ……..	○ 0	☐ 1
Post MI angina/re-ischemia …..…..	○ 0	☐ 1	Asystole ……	○ 0	☐ 1
Stent thrombosis …….....	○ 0	☐ 1	TIA ……..……..	○ 0	☐ 1
Free wall rupture …….....	○ 0	☐ 1	Stroke: …….	○ 0	☐ 1
Pericarditis ……	○ 0	☐ 1	☐ Hemorrhagic		
Tamponade ……..…	○ 0	☐ 1	☐ Ischemic		
VSD ……	○ 0	☐ 1	Acute renal failure ……	○ 0	☐ 1
MR Moderate – severe ……..……	○ 0	☐ 1	Major bleeding …….	○ 0	☐ 1
RBBB (new onset) …….	○ 0	☐ 1	☐ Blood transfusions		
LBBB (new onset) ……	○ 0	☐ 1	Infection ……	○ 0	☐ 1
			Other …….	○ 0	☐ 1

** Specify worst Killip Class*

7. Laboratory Tests *(maximal values)*

CK: …… |__|__|__|__|__| *IU/L* **Elevated** ? ○ 0 No ☐ 1 Yes △ 2 NA

CK-MB% ……..……|__|__|

CK-MB Mass Value *(max)*: |__|__|__|__| *ng/ml* **Elevated** ? ○ 0 No ☐ 1 Yes △ 2 NA

Troponin I *(max)*: ……..|__|__|__|__| *ng/ml* **Elevated** ? ○ 0 No ☐ 1 Yes △ 2 NA

Troponin T *(max)*: ……|__|__|__|__| *ng/ml* **Elevated** ? ○ 0 No ☐ 1 Yes △ 2 NA

Creatinine……|__|__|__| *Unit :* ____

***First Measurements of*:**

Cholesterol-: **Total**..|__|__|__| *Unit:* ____ **LDL**|__|__|__| *Unit:* ____ **HDL** |__|__|. |__| *Unit:* ____

Triglycerides……|__|__|__| *Unit:* ____ **CRP**|__|__|__| *Unit:* ___ ☐ high-sensitive test

Glucose: |__|__|__| *Unit:* ____ **Hb**… |__|__|.|__| *g/dL* **WBC:** |__|__|__|__|__| *Unit:*

Participation in a Clinical Trial: ○ 0 No ☐ 1 Yes **Type:** ☐ 1 ACS ☐ 2 HF ☐ 3 Arrhythmia ☐ 4 Device

Name of Trial : _____

Center | Ward | Patient

8. Medical Treatment *List all drugs administered in hospital and/or recommended at discharge. Exclude clinical trial drugs.*

	Pre Hospital / ER	In Hospital			At discharge		
	No Yes	No Yes	Trade name	Total Daily Dose *mg*	No Yes	Trade name	Total Daily Dose *mg*
Aspirin	O0 ☐1	O0 ☐1			O0 ☐1		
Anticoagulants							
Warfarin or other oral anticoagulants	O0 ☐1	O0 ☐1			O0 ☐1		
UF Heparin	O0 ☐1	O0 ☐1					
LMW heparin	O0 ☐1	O0 ☐1			O0 ☐1		
Bivalirudin (Angiomax)	O0 ☐1	O0 ☐1					
Fondaparinux	O0 ☐1	O0 ☐1					
Clopidogrel (Plavix)	O0 ☐1	O0 ☐1			O0 ☐1		
Prasugrel	O0 ☐1	O0 ☐1			O0 ☐1		
Other antiplatelets	O0 ☐1	O0 ☐1					
IIbIIIa GP	O0 ☐1	O0 ☐1					
ACE-I	O0 ☐1	O0 ☐1			O0 ☐1		
ARB	O0 ☐1	O0 ☐1			O0 ☐1		
Beta blockers	O0 ☐1	O0 ☐1			O0 ☐1		
IV inotropic agent	O0 ☐1	O0 ☐1					
Digoxin	O0 ☐1	O0 ☐1			O0 ☐1		
Amiodarone	O0 ☐1	O0 ☐1			O0 ☐1		
Other antiarrhythmics	O0 ☐1	O0 ☐1			O0 ☐1		
Narcotics	O0 ☐1	O0 ☐1			O0 ☐1		
Diuretic	O0 ☐1	O0 ☐1	1.		O0 ☐1	1.	
			2.			2.	
Aldosterone receptor antagonist	O0 ☐1	O0 ☐1			O0 ☐1		
Insulin	O0 ☐1	O0 ☐1			O0 ☐1		
Hypoglycemic drugs (Oral)	O0 ☐1	O0 ☐1	1.		O0 ☐1	1.	
			2.			2.	
Statins	O0 ☐1	O0 ☐1			O0 ☐1		
Fibrate	O0 ☐1	O0 ☐1			O0 ☐1		
Ezetimibe	O0 ☐1	O0 ☐1			O0 ☐1		
Calcium channel blocker	O0 ☐1	O0 ☐1			O0 ☐1		
Nitrates	O0 ☐1	O0 ☐1			O0 ☐1		
PPI	O0 ☐1	O0 ☐1			O0 ☐1		
H_2 blockers	O0 ☐1	O0 ☐1			O0 ☐1		
Other	O0 ☐1	O0 ☐1	1.		O0 ☐1	1.	
			2.			2.	
			3.			3.	

Center | Ward | Patient

9. Discharge from Reporting Department (CCU/Cardiology or Internal Medicine)

Note: information after the patient was discharged from the reporting department or transferred to another ward or another hospital should be recorded on the 30 day follow-up page

During Hospitalization in the Reporting Department:

☐ 0 Patient was conscious at least some of the time

☐ 1 Patient was admitted unconscious and did not regain consciousness

Status at Discharge from Reporting Department:

☐ 0 Alive → **Discharge Date:** |__|__| / |__|__| /2010

Discharged to: ☐ 1 Internal Medicine ☐ 2 Cardiology ☐ 3 Cardiothoracic Surgery ☐ 4 Other Ward ☐ 5 Convalescence facility/unit ☐ 6 Home ☐ 7 Other

Plavix recommended: **Dose**: |__|__|__| mg **for number of months:** |__|__|.|__|

Dose: |__|__|__| mg **for number of months:** |__|__|.|__|

☐ 1 Deceased → **Date of Death:** |__|__| / |__|__| /2010

Cause of Death: ☐ 0 Non-cardiac ☐ 1 Cardiac

Death was: ☐ 0 Non-sudden ☐ 1 Sudden

Discharge Diagnosis: ☐ 1 Primary ☐ 2 Secondary

☐ 1 STE MI ☐ 2 NSTEMI ☐ 3 UAP

Type of AMI: |__|__|

Type 1	Spontaneous MI related to ischemia due to primary coronary event such as plaque erosion and /or rupture, fissuring or dissection	**Type 4a**	MI associated with PCI
Type 2	MI secondary to ischemia due to either increased oxygen demand or decreased supply., e.g coronary artery spam, coronary embolism, anemia, arrhythmias, hypertension or hypotension	**Type 4b**	MI associated with stent thrombosis as documented by angiography or at autopsy
Type 3	Sudden unexpected cardiac death, including cardiac arrest, often with symptoms suggestive of myocardial ischemia, accompanied by presumably new ST elevation or new LBBB, or evidence of fresh thrombus in a coronary artery by angiography and/or at autopsy, but death occurring before blood samples could be obtained, or at a time before the appearance of cardiac biomarkers in the blood	**Type 5**	MI associated with CABG

ECG Findings *(index event)*:

Location: ☐ Anterior ☐ Inferior ☐ Right ventricle ☐ Lateral ☐ Posterior ☐ Undetermined

Q-Waves: ○ 0 No ☐ 1 Yes **Rhythm**: ☐ 1 NSR ☐ 2 AF ☐ 3 Pacemaker

Comments: _____

Name of Physician: _____ **Signature:** _____

Date: |__|__| / |__|__| /2010

Center | Ward | Patient

האיגוד הישראלי לרפואה פנימית
Israel Society of Internal Medicine

The Working Group on Intensive Cardiac Care- Israel Heart Society
***In cooperation with*: the Working group on Inverventional Cardiology**
and the Israel Society for Internal Medicine

Acute Coronary Syndrome Israeli Survey - 2010

30-Day Follow-up *(from 1st day of admission)*

Do not record on this form events/ procedures that took place during the index hospitalization and were already recorded on the main form

Date of Contact: |__|__| / |__|__| / 2010
day *month*

At the Time of Contact Patient was:

☐ 1 Still in hospital ☐ 2 Discharged from hospital *(specify below)* ☐ 3 Deceased in hospital

Date hospital Discharge: |__|__| / |__|__| /2010
day *month*

Re-Hospitalization Within 30 Days from Admission: ○ 0 No ☐ 1 Yes *(specify below)*

Date of First Re-Hospitalization: |__|__| / |__|__| / 2010
day *month*

First Re-Hospitalization was: ☐ 1 Scheduled ☐ 2 Cardiac event driven ☐ 3 Non cardiac hospitalization

Events and Procedures after Discharge from the Reporting Department:
(CCU/Cardiology or Internal Medicine)

Events: *(Check all that apply)*

	No Yes	Day/Month	Re-Hospitalization No Yes
Re- UAP…	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
Re-MI……	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
Angina ….	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
CHF …….	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
Arrhythmia	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
	Specify: _____		
Stent thrombosis	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
Pericarditis	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
Other…….	○ 0 ☐ 1	*Specify* _____	

Procedures: *(Check all that apply)*

	No Yes	Day/Month	Urgent No Yes
Cor. angiography	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
PCI……...	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
CABG ……	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
EPS……..	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
New pacemaker ..	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
New AICD ……..	○ 0 ☐ 1	____ / ____	○ 0 ☐ 1
Other……	○ 0 ☐ 1	*Specify* _____	

Referral to Rehabilitation Program: ○ 0 No ☐ 1 Yes

Participating in a Rehabilitation Program: ○ 0 Not participating ☐ 1 Currently participating
☐ 2 Enrolled to participate

Center | Ward | Patient

30-Day Follow-up evidence based Treatment:

List of drugs used at 30-days:

	No Yes	Trade Name *(specify one per line)*	Total daily Dose *mg*
Aspirin……..……	○0 □1		
Clopidogrel ……..	○0 □1		
Other antiplatelets ……	○0 □1		
ACE-I ……...…	○0 □1		
ARB …….	○0 □1		
Beta blockers……	○0 □1		
Antiarrhythmic ……	○0 □1		
Statins ……..	○0 □1		
PPI ……	○0 □1		
H_2 blockers ……..	○0 □1		

Status at the End of 30 days from the First Day of Hospitalization*:

****For events that occurred during hospitalization for another reason – 30 days from event onset***

□0 Alive

□1 Deceased *specify:* **Date of Death:** |__|__| / |__|__| **/2010**

Cause of Death: □1 Cardiac □0 Non-cardiac □ Unknown

Death was: □1 Sudden □0 Non-sudden □ Unknown

Name of Physician: _____ **Signature:** _____

Date: |__|__| / |__|__| /2010

THE WORKING GROUP ON INTENSIVE CARDIAC CARE - ISRAEL HEART SOCIETY
In Cooperation with THE WORKING GROUP ON INTERVENTIONAL CARDIOLOGY

ACSIS 2010 - CCU Registry

*This form should be completed for **each patient admitted to CCU** from 1.3.2010 – 30.04.2010*

Center	Ward	Patient

Hospitalization #: |__|

Initials: : |__|__| **Family, 1st**

ID *(last 4 digits):* |__|__|__|__|

Year of birth: |__|__|__|__| **Sex:** ☐ 1 M ☐ 2 F **Date of Hospitalization:** |__|__| / |__|__| /2010

2. Type of admission: ☐ 1 Urgent ☐ 2 Elective

3. Patient arrived to CCU from: *(tick only one)*

- ☐ 1 ER
- ☐ 2 Internal Medicine Ward
- ☐ 3 Intermediate / Cardiology
- ☐ 4 Cardiothoracic Surgery Department
- ☐ 5 Operation room
- ☐ 6 Cath. Lab
- ☐ 7 Other Department – specify_____
- ☐ 8 Other Hospital – specify _____
- ☐ 9 Residence/Work/Public place

4. Reason for admission to CCU: (*tick the main reason)*

- ☐ 1 ACS
- ☐ 2 Chest pain for observation
- ☐ 3 Pulmonary emboli
- ☐ 4 Heart failure / Pulmonary Edema
- ☐ 5 Valve disease
- ☐ 6 EPS / Ablation
- ☐ 7 Arrhythmia, syncope
- ☐ 8 Pacemaker implantation
- ☐ 9 S/P procedure complication, specify _____
- ☐ 10 ICD/CRT implantation
- ☐ 11 S/P prolonged CPR – dead on arrival
- ☐ 12 Coronary angiography /PCI
- ☐ 13 Other – specify _____

5. Main discharge diagnosis: ☐ 1 ACS *Go to ACSIS main questionaire* ☐ 2 Other *Specify below*:

Diagnoses and procedures during hospitalization:

- ☐ Stable AP
- ☐ CVA
- ☐ COPD
- ☐ Non-specific chest pain
- ☐ CHF/Cardiogenic shock
- ☐ Pulmonary emboli
- ☐ Peri-myocarditis
- ☐ Sepsis
- ☐ Pneumonia
- ☐ Multiorgan failure
- ☐ Renal failure: ☐ Hemodialysis
- ☐ Other infect. disease: _____
- ☐ Other: _____

☐ Arrhythmia/Conduction disturbances, *specify management:*

- ☐ Pacemaker implantation
- ☐ Antiarrhythmic treatment
- ☐ AICD/CRT implantation
- ☐ Cardioversion
- ☐ PAF/SVT
- ☐ EPS/Ablation
- ☐ VT
- ☐ Other _____

Elective: ☐ CABG ☐ PCI ☐ Valve replacement

6. Status on discharge: ☐ 0 Alive ☐ 1 Deceased

Date of discharge from CCU/death: |__|__| / |__|__| /2010

Name of Physician: _____ **Signature:** _____

Date: |__|__| / |__|__| /2010

THE WORKING GROUP ON INTENSIVE CARDIAC CARE - ISRAEL HEART SOCIETY
In Cooperation with THE WORKING GROUP ON INTERVENTIONAL CARDIOLOGY

Acute Coronary Syndrome Israeli Survey - 2010

Coronary Procedures: Coronary Angiography, PCI and CABG

Complete 1 form for every procedure done during the total duration of the index hospitalization

Center |___|___|___| *Ward |___|___| Patient # |___|___|___|___|

Procedure #: |___| **Initials:** |___|___|

ID *(last 4 digits):* |___|___|___|___| 1st family

1. Coronary Angiography *during hospitalization:*

Date: |___|___| / |___|___| / 2010 (t) |___|___|:|___|___|
day *month* *hour* *minutes*

Complete details in main ACSIS form and specify additional details below

Details:

Vascular access: ☐1 Femoral ☐2 Radial ☐3 Brachial

Largest Catheter size: ☐1 4F ☐2 5F ☐3 6F ☐4 >6F ☐5 Unknown

Closure device: ○0 None ☐1 Angioseal ☐2 Perclose ☐3 Other

Normal coronary angiogram: ○0 No *specify below* ☐1 Yes

Territory:

	LMCA	LAD	LCx	RCA	graft
Total Occlusion	☐	☐ *specify*: ☐ prox ☐ mid ☐ distal ☐ diag	☐	☐	☐
≥50% to <100% stenosis	☐	☐ *specify*: ☐ prox ☐ mid ☐ distal ☐ diag	☐	☐	☐
>0% to <50% stenosis	☐	☐ *specify*: ☐ prox ☐ mid ☐ distal ☐ diag	☐	☐	☐
Coronary spasm	☐	☐ *specify*: ☐ prox ☐ mid ☐ distal ☐ diag	☐	☐	☐
Culprit artery	☐	☐ *specify*: ☐ prox ☐ mid ☐ distal ☐ diag	☐	☐	☐

Initial: TIMI flow on culprit artery: 0 1 2 3 **MBG: on culprit artery:** 0 1 2 3

2. PCI: ○0 No ☐1 Yes *specify* **Date:** |___|___| / |___|___| / 2010 (t) |___|___|:|___|___|
day *month* *hour* *minutes*

☐ **ST-elevation ACS or STEMI** *specify type:*

- ☐ Primary PCI
- ☐ Rescue PCI for failed thrombolysis
- ☐ Routine PCI after successful thrombolysis
- ☐ Late systematic PCI *(if primary reperfusion not performed)*
- ☐ PCI for recurrent symptoms
- ☐ PCI for documented myocardial ischaemia

☐ **NST-elevation ACS** *specify type:*

- ☐ PCI for severe symptoms, arrhythmias, or hemodynamic compromise
- ☐ Routine systematic PCI
- ☐ PCI for recurrent symptoms
- ☐ PCI for documented myocardial ischaemia

Center | Ward | Patient #

Lesion # 1 (*Culprit lesion*):

Vessel: ☐ LMCA…... ☐ LAD……. ☐ LCx…….. ☐ RCA... ☐ graft. ☐ NA
Location: ☐ Ostial……. ☐ Prox ……. ☐ Mid…….. ☐ Distal
Type: ☐ De Novo… ☐ ISR of BMS. ☐ ISR of DES ☐ Stent thrombosis
Morphology: ☐ Bifurcation. ☐ Calcified…... ☐ Chronic total occlusion ☐ Other

Procedure details:

Pre-dilation: ○ 0 No ☐ 1 Yes

Total number of stents: |__| **Maximal- Stent diameter**: |__|.|__||__| *mm* **stent length**: |__|__| *mm*

Stent type: ☐ Bare Metal ☐ Drug eluting *specify* **Trade name**: ☐ Cypher ☐ Taxus ☐ Endeavor ☐ Xience ☐ Biomatrix ☐ Nobori ☐ Other

Post-dilation: ○ 0 No ☐ 1 Yes
Use of distal protective device: ○ 0 No ☐ 1 Yes
IVUS: ○ 0 No ☐ 1 Yes
Fractional flow reserve: ○ 0 No ☐ 1 Yes *specify:* |__| .|__|__|

Lesion # 2:

Vessel: ☐ LMCA…... ☐ LAD……. ☐ LCx…….. ☐ RCA... ☐ graft. ☐ NA
Location: ☐ Ostial……. ☐ Prox ……. ☐ Mid…….. ☐ Distal
Type: ☐ De Novo… ☐ ISR of BMS. ☐ ISR of DES ☐ Stent thrombosis
Morphology: ☐ Bifurcation. ☐ Calcified…... ☐ Chronic total occlusion ☐ Other

Procedure details:

Pre-dilation: ○ 0 No ☐ 1 Yes

Total number of stents: |__| **Maximal- Stent diameter**: |__|.|__||__| *mm* **stent length**: |__|__| *mm*

Stent type: ☐ Bare Metal ☐ Drug eluting *specify* **Trade name**: ☐ Cypher ☐ Taxus ☐ Endeavor ☐ Xience ☐ Biomatrix ☐ Nobori ☐ Other

Post-dilation: ○ 0 No ☐ 1 Yes
Use of distal protective device: ○ 0 No ☐ 1 Yes
IVUS: ○ 0 No ☐ 1 Yes
Fractional flow reserve: ○ 0 No ☐ 1 Yes *specify:* |__| .|__|__|

Lesion # 3

Vessel: ☐ LMCA…... ☐ LAD……. ☐ LCx…….. ☐ RCA... ☐ graft. ☐ NA
Location: ☐ Ostial……. ☐ Prox ……. ☐ Mid…….. ☐ Distal
Type: ☐ De Novo… ☐ ISR of BMS. ☐ ISR of DES ☐ Stent thrombosis
Morphology: ☐ Bifurcation. ☐ Calcified…... ☐ Chronic total occlusion ☐ Other

Procedure details:

Pre-dilation: ○ 0 No ☐ 1 Yes

Total number of stents: |__| **Maximal- Stent diameter**: |__|.|__||__| *mm* **stent length**: |__|__| *mm*

Stent type: ☐ Bare Metal ☐ Drug eluting *specify* **Trade name**: ☐ Cypher ☐ Taxus ☐ Endeavor ☐ Xience ☐ Biomatrix ☐ Nobori ☐ Other

Post-dilation: ○ 0 No ☐ 1 Yes
Use of distal protective device: ○ 0 No ☐ 1 Yes
IVUS: ○ 0 No ☐ Yes
Fractional flow reserve: ○ 0 No ☐ 1 Yes *specify:* |__| .|__|__|

Center | Ward | Patient #

Lesion # 4

Vessel: ☐ LMCA…... ☐ LAD……. ☐ LCx…….. ☐ RCA... ☐ graft. ☐ NA

Location: ☐ Ostial……. ☐ Prox ……. ☐ Mid…….. ☐ Distal

Type: ☐ De Novo… ☐ ISR of BMS. ☐ ISR of DES ☐ Stent thrombosis

Morphology: ☐ Bifurcation. ☐ Calcified…... ☐ Chronic total occlusion ☐ Other

Procedure details:

Pre-dilation: ○ 0 No ☐ 1 Yes

Total number of stents: |__| **Maximal- Stent diameter**: |__|.|__||__| *mm* **stent length**: |__|__| *mm*

Stent type: ☐ Bare Metal ☐ Drug eluting *specify*

Trade name: ☐ Cypher ☐ Taxus ☐ Endeavor ☐ Xience ☐ Biomatrix ☐ Nobori ☐ Other

Post-dilation: ○ 0 No ☐ 1 Yes

Use of distal protective device: ○ 0 No ☐ 1 Yes

IVUS: ○ 0 No ☐ Yes

Fractional flow reserve: ○ 0 No ☐ 1 Yes *specify:* |__| .|__|__|

Additional details for primary PCI:

Restoration of flow after guidewire: ○ No ☐ Yes

Use of aspiration device: ○ No ☐ Yes

Restoration of flow after aspiration: ○ No ☐ Yes

Successful stenting: ○ No ☐ Yes

Final MBG: 0 1 2 3

ST resolution >70% at 1st ECG after PCI: ○ No ☐ Yes

Use of IABP: ○ No ☐ Yes *specify when*: ☐ pre PCI ☐ Post PCI

Procedural complication:

	No	Yes
Closure of side branch: .	○ 0	☐ 1
Dissection: ……..	○ 0	☐ 1 *specify*
repaired ?	○ 0	☐ 1
Perforation: …….	○ 0	☐ 1

	No	Yes
No reflow: …….	○ 0	☐ 1
CPR during procedure	○ 0	☐ 1
Urgent CABG:……	○ 0	☐ 1

---

3. Cardiac Surgery*:*

CABG: ○ 0 No ☐ 1 Yes *specify* **Date**: |__|__| / |__|__| / 2010 *day* *month*

After Clopidogrel/Prasugel withdrawal: ○ No ☐ Yes

Grafts: ☐ SVG *specify* n° of SVG: |__| ☐ LIMA ☐ RIMA ☐ Other

---

Other Cardiac Surgery: ○ 0 No ☐ 1 Yes *specify* **Date**: |__|__| / |__|__| / 2010 *day* *month*

Type: ☐ Valvular surgery ☐ for Mechanical complication ☐ Other: _____

Effient™
(prasugrel) tablets

Effient plus ASA provides Stronger Protection against CV events

vs. clopidogrel plus ASA in ACS-PCI

עליית מדרגה בעיכוב טסיות
יעיל יותר, מהיר יותר, עקבי יותר[1,2,3]

למידע מלא נא עיין בעלון לרופא כפי שאושר ע"י משרד הבריאות
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Effient, co-administered with acetylsalicylic acid (ASA), is indicated for the prevention of atherothrombotic events in patients with acute coronary syndrome (i.e. unstable angina, non-ST segment elevation myocardial infarction [UA/NSTEMI] or ST segment elevation myocardial infarction [STEMI]) undergoing primary or delayed percutaneous coronary intervention (PCI).
The increased efficacy should be balanced with the increased risk in patients with bleeding tendency in those who had TIA/CVA in the past and in those above the age of 75 and a weight below 60 kg3.

Ref:
1. Brandt JT, Payne cd, wiviott SD, el al. a comparison of prasugrel and clopidogrel loading doses on platelet function: magni tude of latelet inhibition is related to active metabolite formation. Am Heart J 2007;153:66.e9-66-e16.
2. Payne CD, Li YG, Small DS, et al. Increased active metabolite formation explains the greater plate et inhibition with prasugrel compared to high-dose clopidogrel. J Cardiovasc Pharmacol 2007;50:555-562.
3. Wiviott, S. D. et al. Prasugrel Versus Clopidogrel in Patients with Acute Coronary Syndromes The New England Journal of Medicine. 2007; 357(20): 2001-2015.

EF041107

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