CHAPTER 5

OUTCOMES

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In-hospital and 30-day outcome (Table 5.1 & 5.3)

The in-hospital mortality for the entire cohort of patients was 7% (229 deaths) while 30-day mortality was 8% (288 deaths) (Table 5.1). Based on the ACS stratum, the in-hospital death rates for patients with STEMI, NSTEMI and UA were 9%, 7% and 3% respectively. At 30 days, the death rates were 11%, 8% and 4% respectively (Table 5.3). As nearly a quarter of the patients were lost to follow-up, the 30-day mortalities were likely to be underestimated.

Similar patterns of mortality – highest in STEMI, followed by NSTEMI and lowest in UA, were observed in other prospective surveys of ACS [2, 3, 5].

The mortality rates in the current survey were similar to other registries in the late 90s. In GRACE study[5], the in-hospital death rates for STEMI, NSTEMI and UA were 7%, 6% and 3% respectively. The National Registry of Myocardial Infarction (NRMI) 3 reported a 9% in-hospital death rate for STEMI[4]. But more recent data from the western countries showed a significant reduction in ACS mortality. In-hospital death rates for STEMI and NSTEMI ACS were 4.6% and 2.2% respectively in GRACE study[2] in year 2005, and 5.3% and 2.5% respectively in the second Euro Heart Survey for ACS[3] in 2004.

Outcome by pre-specified variables (Table 5.2.1 to 5.2.5)

The highest in-hospital and 30-day mortality, 10% and 13% respectively were observed in the elderly age group (Table 5.2.1). The mortalities in the young and middle-age groups were similar. Female patients experienced higher in-hospital and 30-day mortality (8% and 10% respectively) compared to the male patients (6% and 8%) (Table 5.2.2). Patients with pre-morbid diabetes mellitus also had a higher in-hospital and 30-day mortality (7% and 10% respectively) than those without diabetes mellitus (5% and 6%) (Table 5.2.3). The mortality in patients with pre-morbid hypertension was similar to those without hypertension (6% in-hospital and 8% 30-day mortality vs. 7% and 8% respectively) (Table 5.2.4). Interestingly, pre-morbid dyslipidaemia was associated with lower in-hospital and 30-day mortality rates (5% and 6% respectively) compared to those without dyslipidaemia (7% and 9%) (Table 5.2.5).

Outcome of STEMI by treatment (Table 5.4.1 to 5.4.4)

In STEMI, the use of fibrinolysis was associated with lower in-hospital and 30-day mortality rates (7% and 9% respectively vs. 13% and 16%) (Table 5.4.1). On the other hand, mortality of patients who had PCI was similar to those who did not have PCI (Table 5.4.2). PCI was performed in 21% of patients as primary PCI, rescue PCI or PCI for post-infarct angina. Therefore these data do not compare primary PCI with fibrinolysis in STEMI. Only 10 patients had CABG during the admission for STEMI, and all 10 were alive upon discharge and at 30 days (Table 5.4.3).

Outcome of NSTEMI/UA by treatment (Table 5.5.1 to 5.5.3)

In NSTEMI and UA, only 12.3% of the patients in this survey had in-hospital PCI, compared to 37.1% reported in the second Euro Heart Survey on ACS[3], and 28% (in NSTEMI) and 18% (in UA) in GRACE[1]. The in-hospital and 30-day mortalities of patients who had PCI were slightly lower compared to those medically treated (4% vs. 5% and 5% vs. 7% respectively) (Table 5.5.1). In contrast to STEMI, more NSTEMI/UA patients (n=57) underwent CABG during hospitalization for the index event. Both in-hospital and 30-day mortalities were higher in this group of patients (14% for both) compared to those who did not have CABG (5% and 6% respectively) (Table 5.5.2).

Prognostic factors (Table 5.6.1 to 5.6.4)

The following were associated with an increased risk of in-hospital death in patients with STEMI: higher Killip class, higher TIMI risk score, former or current cigarette smoking, family history of premature cardiovascular disease, dyslipidaemia, hypertension and diabetes mellitus. Older age was associated with increased risk of in-hospital death. Prognostic factors for an increased death in 30 days among STEMI patients were almost similar with in-hospital death with the exception of dyslipidemia. In NSTEMI/UA, the following predicts higher in-hospital mortality: higher Killip class, former or current cigarette smoking, diabetes mellitus and heart failure. Older age is again associated with increased risk of death. For 30-day mortality, higher Killip class, cigarette smoking and diabetes mellitus were poor prognostic factors.

Summary Points:

- Total in hospital mortality for patients with ACS was 7% while 30-day mortality was 8%.
- The mortality was higher in STEMI followed by NSTEMI and lowest in UA. Our mortality rates were similar to other Western registries in the late 90s.
- In STEMI, the use of fibrinolysis was associated with lower in-hospital and 30-day mortality rates. In contrast there was no difference in outcome between those who underwent PCI on the same admission and those who did not.
- For STEMI and UA the in-hospital and 30-day mortalities of patients who had PCI were slightly lower compared to medically treated patients.
- Important prognostic factors for STEMI were higher Killip class, higher TIMI risk score and the presence of conventional risk factors. Higher Killip class was also an important prognostic factor for NSTEMI/UA.

References:

1. Fox KAA, Goodman SG, Klein W et al., GRACE investigators. Management of acute coronary syndromes. Variations in practice and outcome. Findings from the Global Registry of Acute Coronary Events (GRACE). *Eur Heart J.* 2002; 23:1177-1189.

2. Fox KAA, Steg PG, Eagle KA et al., GRACE investigators. Decline in rates of death and acute coronary syndromes, 1999-2006. *JAMA* 2007; 297:1892-1900.

3. Mandelzweig L et al., Euro Heart Survey Investigators. The second Euro Heart Survey on acute coronary syndromes: characteristics, treatment, and outcome of patients with ACS in Europe and the Mediterranean Basin in 2004. *Eur Heart J.* 2006; 27,2285-93.

4. Rogers WJ, Canto JG, Lambrew CT et al. Temporal trends in the treatment of over 1.5 million patients with myocardial infarction in the US from 1990 through 1999: the National Registry of Myocardial Infarction 1, 2 and 3. J Am Coll Cardiol 2000; 36: 2056-63.

5. Steg PG, Goldberg RJ, Gore JM et al., GRACE Investigators. Baseline characteristics, management practices, and in-hospital outcomes of patients hospitalized with acute coronary syndromes in the Global Registry of Acute Coronary Events (GRACE). *Am J Cardiol.* 2002; 90(4):358-63.

Table 5.1 Overall outcomes for patients with ACS, Malaysia 2006

Outcome	Overall outcome			
	In-hospital		30-day*	
	No.	%	No.	%
• Discharged / Alive	3186	93	2302	67
• Died	229	7	288	8
• Lost to follow-up	NA	NA	832	24
• Missing	7	0	0	0

**Including patients who died in-hospital*
Note: Percentage is to the nearest decimal point.

Figure 5.1.1 In-hospital outcomes for patients with ACS, Malaysia 2006

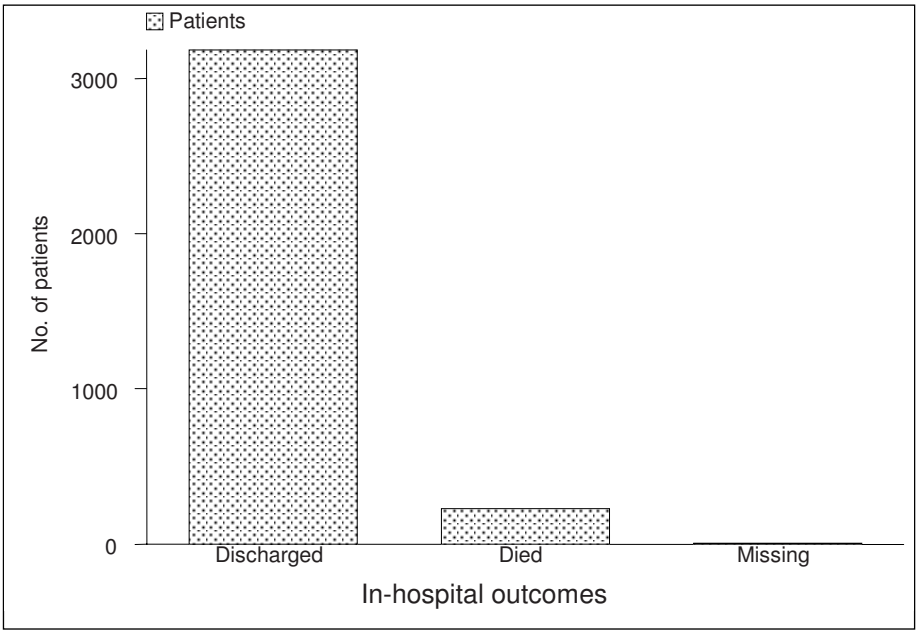

Figure 5.1.2 30-day outcomes for patients with ACS, Malaysia 2006

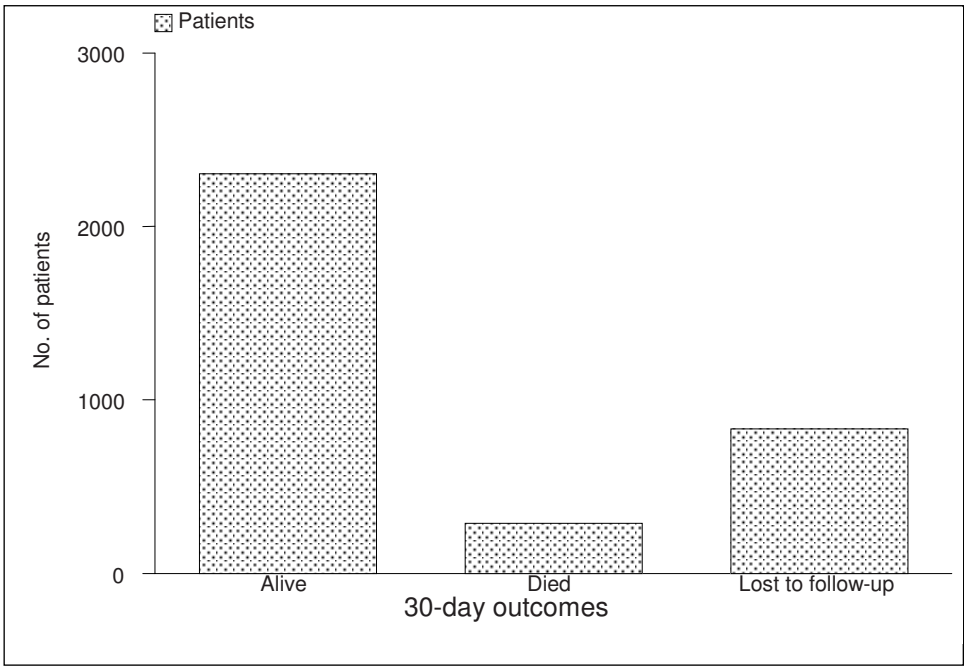

Table 5.2.1 Overall outcomes for patients with ACS by age group (years), Malaysia 2006

Outcome	In-hospital						30-day*					
	Young		Middle-age		elderly		Young		Middle-age		elderly	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	162	98	1610	96	1414	89	117	70	1139	68	1046	66
• Died	4	2	63	4	162	10	6	4	82	5	200	13
• Lost to follow-up	NA	NA	NA	NA	NA	NA	43	26	454	27	335	21
• Missing	0	0	2	0	5	0	0	0	0	0	0	0

**Including patients who died in-hospital.*
Notes:
1. Young is defined as age from 20 to less than 40 years, middle-age is defined as age between 40 to less than 60 years and elderly is defined as 60 years and above.
2. Percentage is to the nearest decimal point.

Figure 5.2.1a In-hospital outcomes for patients with ACS by age group (years), Malaysia 2006

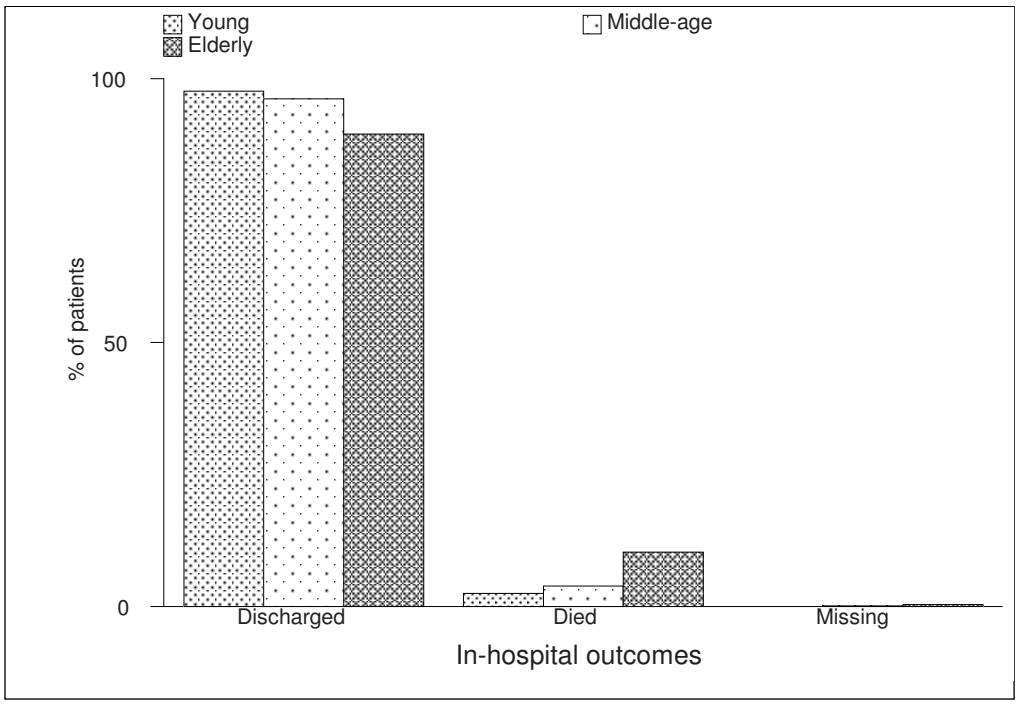

Figure 5.2.1b 30-day outcomes for patients with ACS by age group (years), Malaysia 2006

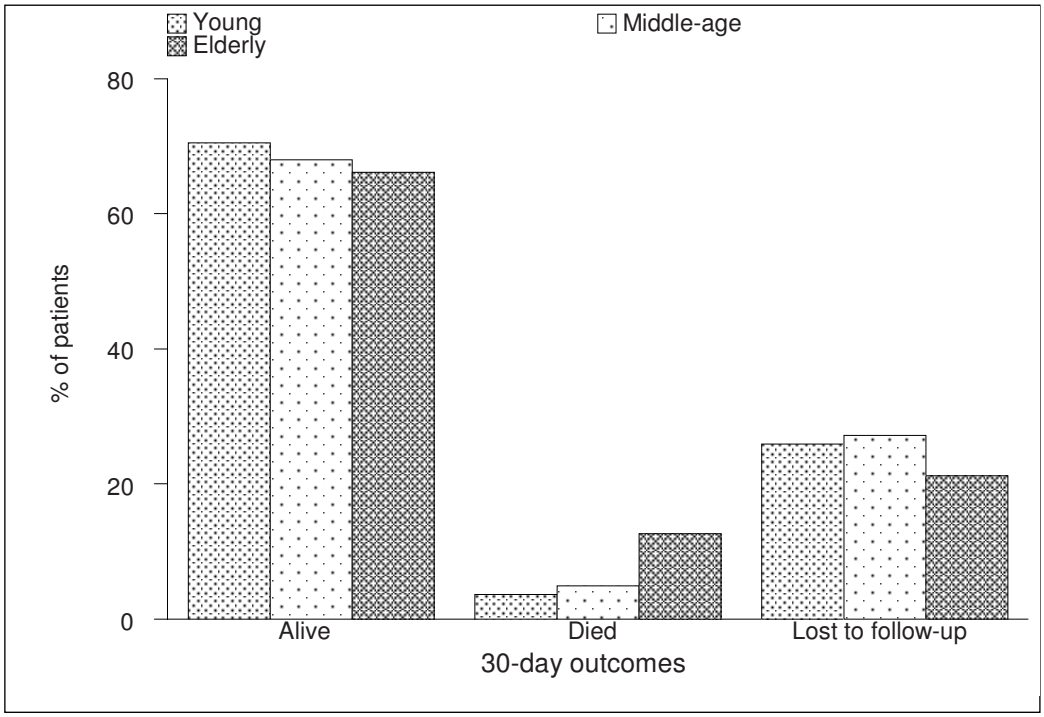

Table 5.2.2 Overall outcomes for patients with ACS by gender, Malaysia 2006

Outcome	In-hospital				30-day*			
	Male		Female		Male		Female	
	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	2401	93	785	92	1752	68	550	64
• Died	164	6	65	8	203	8	85	10
• Lost to follow-up	NA	NA	NA	NA	614	24	218	26
• Missing	4	0	3	0	0	0	0	0

**Including patients who died in-hospital.*
Note: Percentage is to the nearest decimal point.

Figure 5.2.2a In-hospital outcomes for patients with ACS by gender, Malaysia 2006

Figure 5.2.2b 30-day outcomes for patients with ACS by gender, Malaysia 2006

Table 5.2.3 Overall outcomes for patients with ACS by pre-morbid diabetes, Malaysia 2006

Outcome	In-hospital						30-day*					
	Diabetic		Non-diabetic		Not known		Diabetic		Non-diabetic		Not known	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	1388	93	1160	95	638	91	1010	67	817	67	475	68
• Died	108	7	64	5	57	8	143	10	78	6	67	10
• Lost to follow-up	NA	NA	NA	NA	NA	NA	344	23	331	27	157	22
• Missing	1	0	2	0	4	1	0	0	0	0	0	0

**Including patients who died in-hospital.*
Note: Percentage is to the nearest decimal point.

Figure 5.2.3a In-hospital outcomes for patients with ACS by pre-morbid diabetes, Malaysia 2006

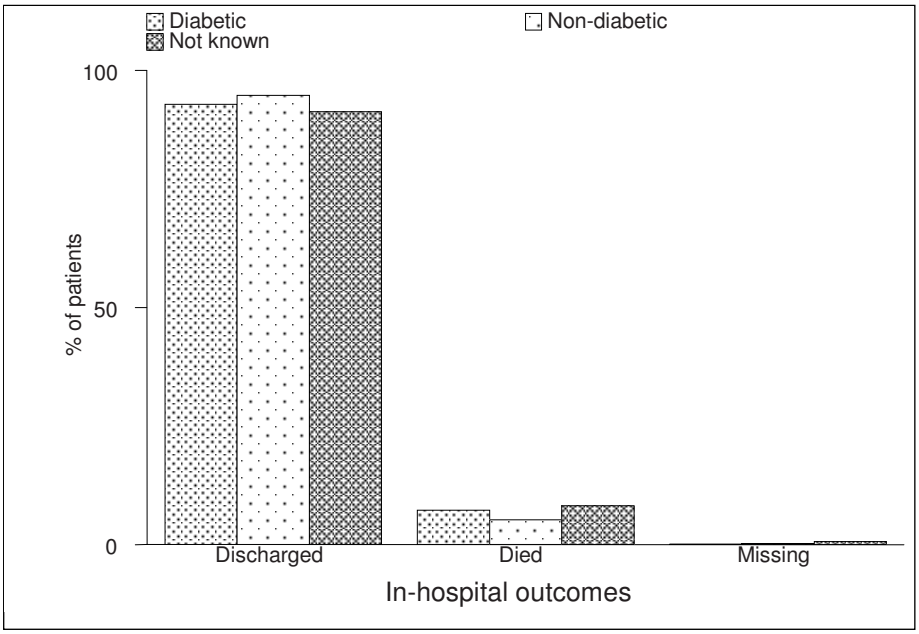

Figure 5.2.3b 30-day outcomes for patients with ACS by pre-morbid diabetes, Malaysia 2006

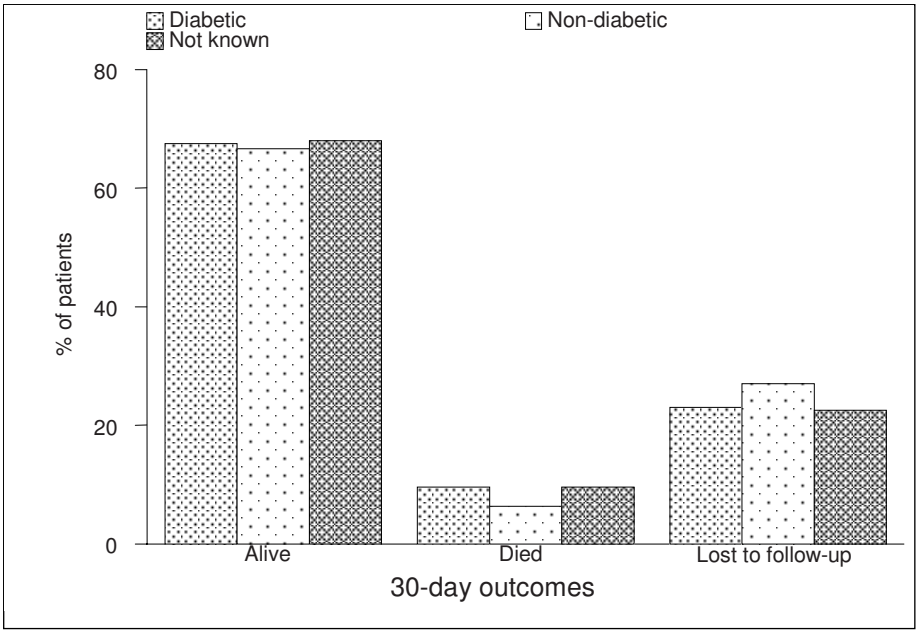

Table 5.2.4 Overall outcomes for patients with ACS by pre-morbid hypertension, Malaysia 2006

Outcome	In-hospital						30-day*					
	Hypertensive		Non-hypertensive		Not known		Hypertensive		Non-hypertensive		Not known	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	1947	93	733	93	506	92	1425	68	510	65	367	66
• Died	134	6	52	7	43	8	171	8	63	8	54	10
• Lost to follow-up	NA	NA	NA	NA	NA	NA	488	23	213	27	131	24
• Missing	3	0	1	0	3	1	0	0	0	0	0	0

**Including patients who died in-hospital.*
Note: Percentage is to the nearest decimal point.

Figure 5.2.4a In-hospital outcomes for patients with ACS by pre-morbid hypertension, Malaysia 2006

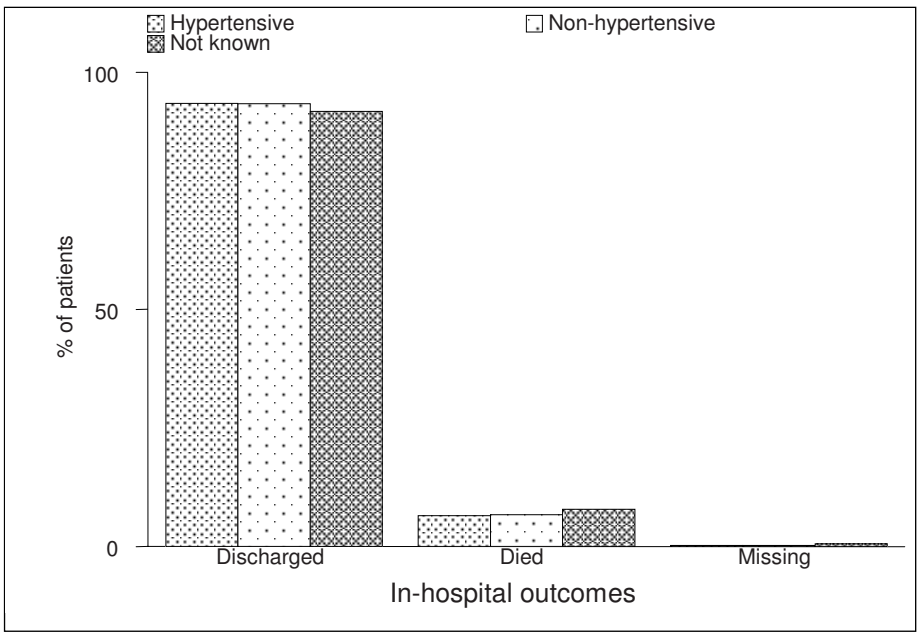

Figure 5.2.4b 30-day outcomes for patients with ACS by pre-morbid hypertension, Malaysia 2006

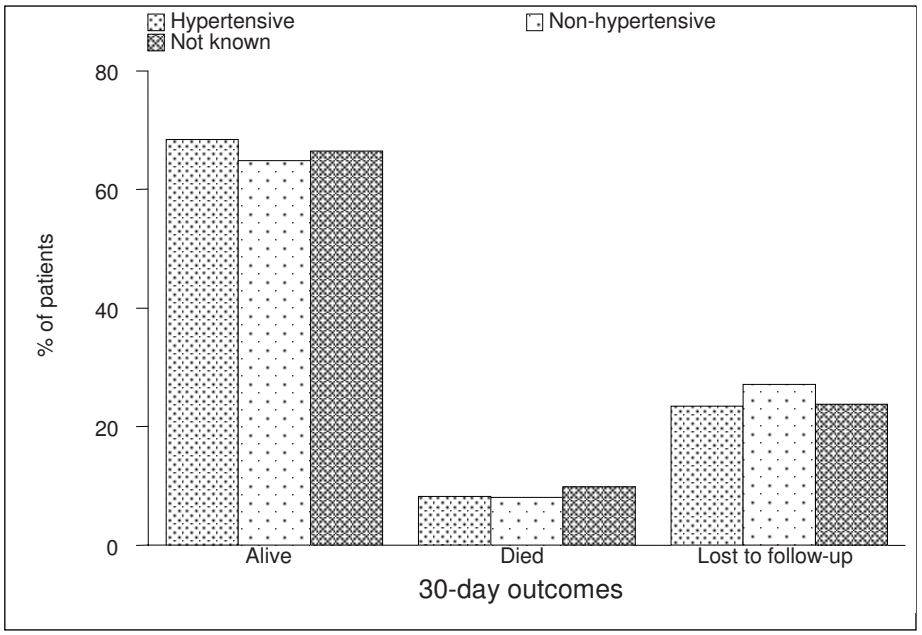

Table 5.2.5 Overall outcomes for patients with ACS by pre-morbid dyslipidaemia, Malaysia 2006

Outcome	In-hospital						30-day*					
	Dyslipidaemia						Dyslipidaemia					
	Yes		No		Not known		Yes		No		Not known	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	1075	95	838	93	1273	92	843	75	546	61	913	66
• Died	55	5	63	7	111	8	70	6	82	9	136	10
• Lost to follow-up	NA	NA	NA	NA	NA	NA	218	19	274	30	340	24
• Missing	1	0	1	0	5	0	0	0	0	0	0	0

**Including patients who died in-hospital.*
Note: Percentage is to the nearest decimal point.

Figure 5.2.5a In-hospital outcomes for patients with ACS by pre-morbid dyslipidaemia, Malaysia 2006

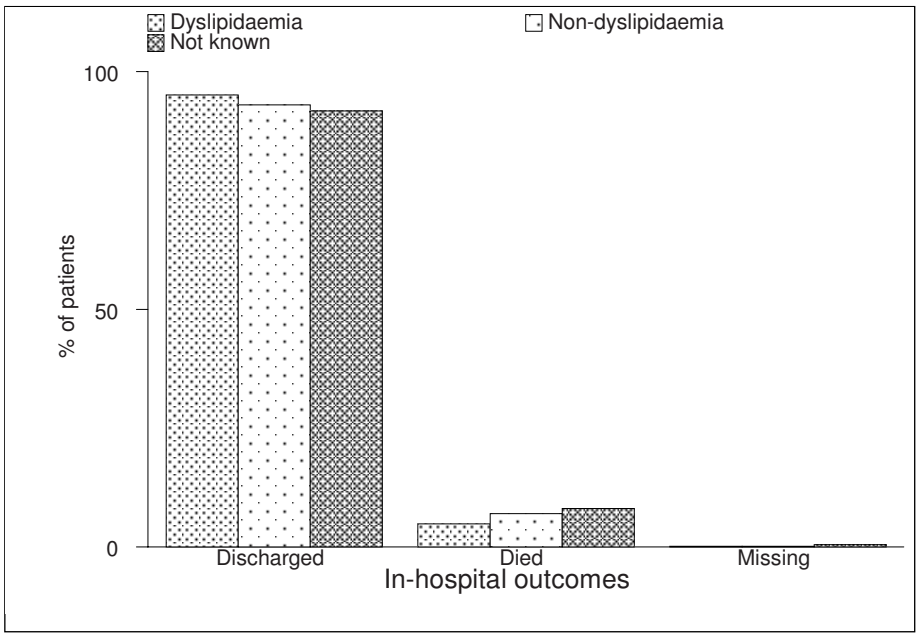

Figure 5.2.5b 30-day outcomes for patients with ACS by pre-morbid dyslipidaemia, Malaysia 2006

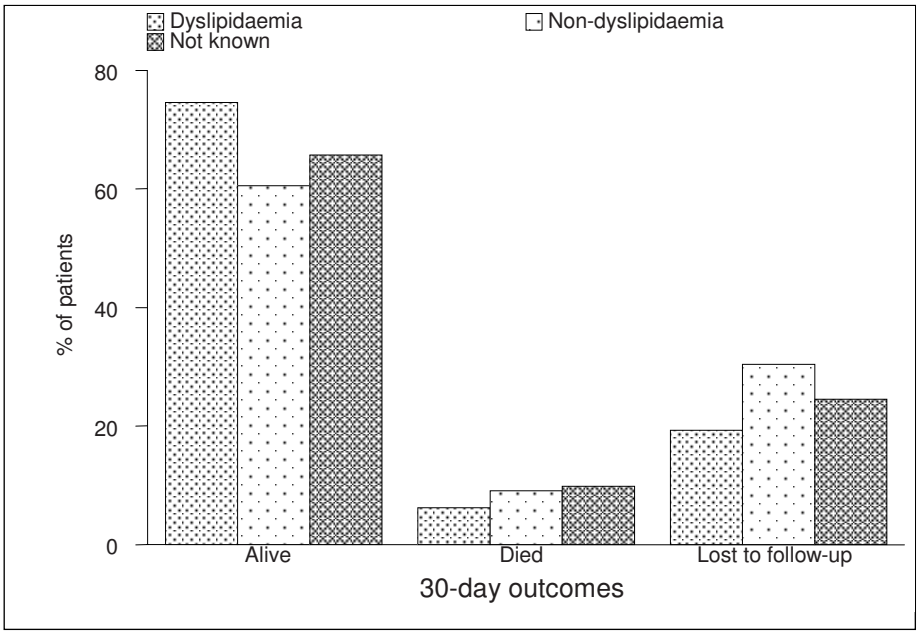

Table 5.3 Overall outcomes for patients with ACS by ACS stratum, Malaysia 2006

Outcome	In-hospital						30-day*					
	STEMI		NSTEMI		UA		STEMI		NSTEMI		UA	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	1312	91	1056	93	818	97	939	65	796	70	567	67
• Died	129	9	75	7	25	3	158	11	92	8	38	4
• Lost to follow-up	NA	NA	NA	NA	NA	NA	348	24	244	22	240	28
• Missing	4	0	1	0	2	0	0	0	0	0	0	0

**Including patients who died in-hospital.*
Note: Percentage is to the nearest decimal point.

Figure 5.3.1 In-hospital outcomes for patients with ACS by ACS stratum, Malaysia 2006

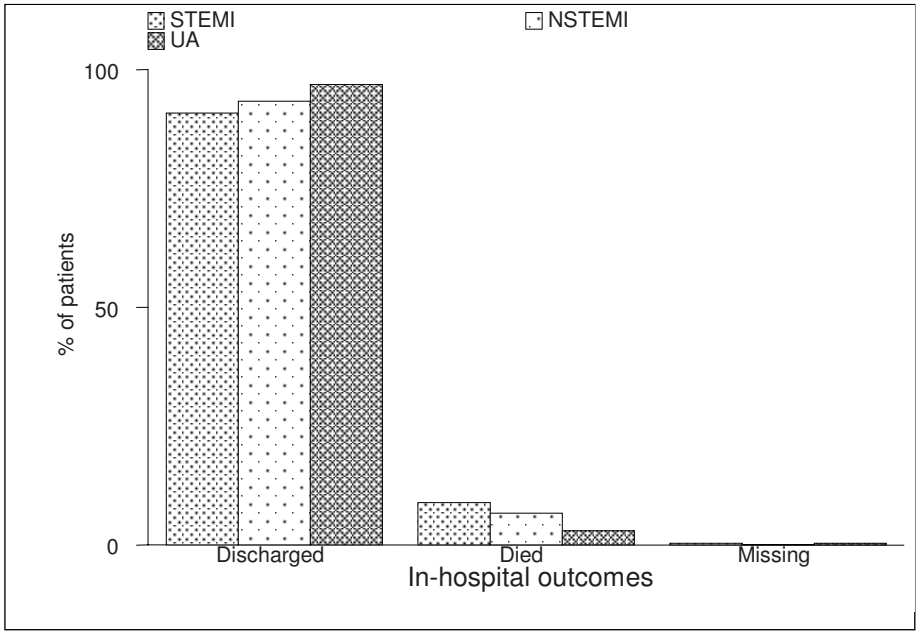

Figure 5.3.2 30-day outcomes for patients with ACS by ACS stratum, Malaysia 2006

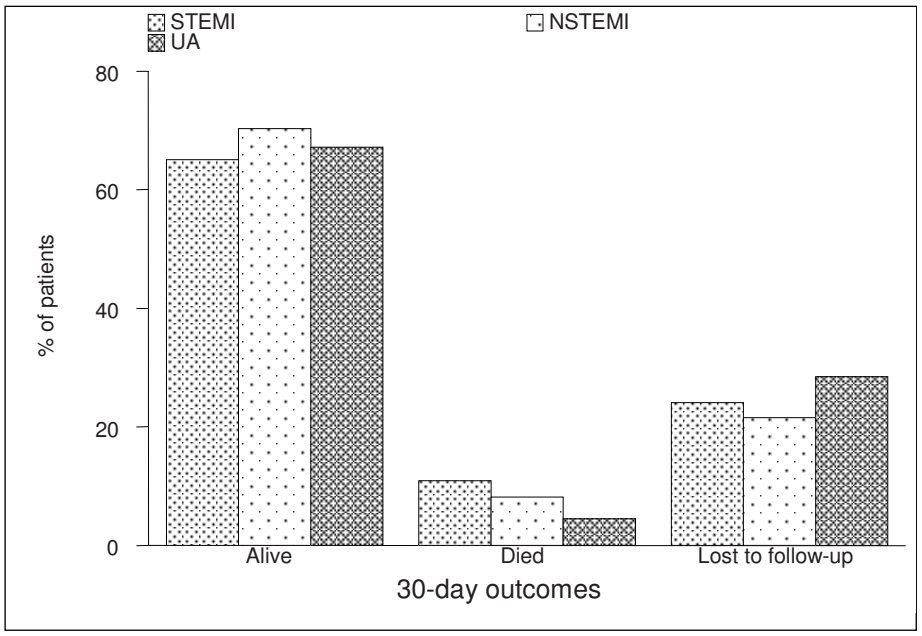

Table 5.4.1 Overall outcomes for patients with STEMI by fibrinolytic therapy, Malaysia 2006

Outcome	In-hospital				30-day*			
	Fibrinolytic therapy				Fibrinolytic therapy			
	Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	940	92	372	87	686	67	253	59
• Died	74	7	55	13	90	9	68	16
• Lost to follow-up	NA	NA	NA	NA	242	24	106	25
• Missing	4	0	0	0	0	0	0	0

**Including patients who died in-hospital.*
Note: Percentage is to the nearest decimal point.

Figure 5.4.1a In-hospital outcomes for patients with STEMI by fibronolytic therapy, Malaysia 2006

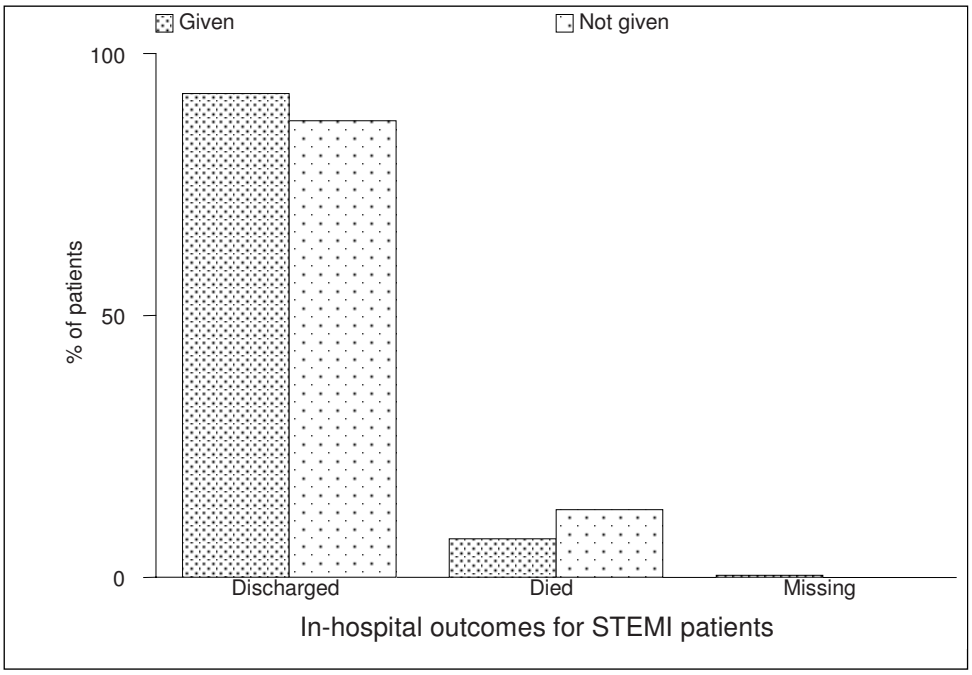

Figure 5.4.1b 30-day outcomes for patients with STEMI by fibronolytic therapy, Malaysia 2006

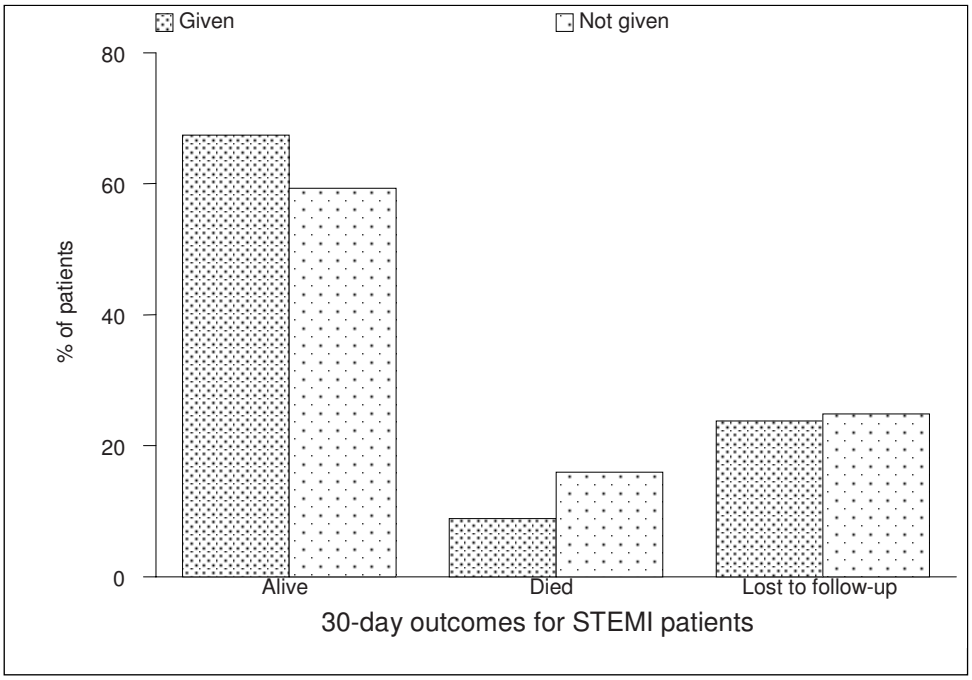

Table 5.4.2 Overall outcomes for patients with STEMI by percutaneous coronary intervention at admission, Malaysia 2006

Outcome	In-hospital				30-day*			
	Percutaneous coronary intervention				Percutaneous coronary intervention			
	Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	283	92	1029	91	242	79	697	61
• Died	25	8	104	9	34	11	124	11
• Lost to follow-up	NA	NA	NA	NA	32	10	316	28
• Missing	0	0	4	0	0	0	0	0

**Including patients who died in-hospital.*
Notes:
1. Percentage is to the nearest decimal point.
2. Percutaneous Coronary Intervention includes primary, rescue and facilitated intervention

Figure 5.4.2a In-hospital outcomes for patients with STEMI by percutaneous coronary intervention at admission, Malaysia 2006

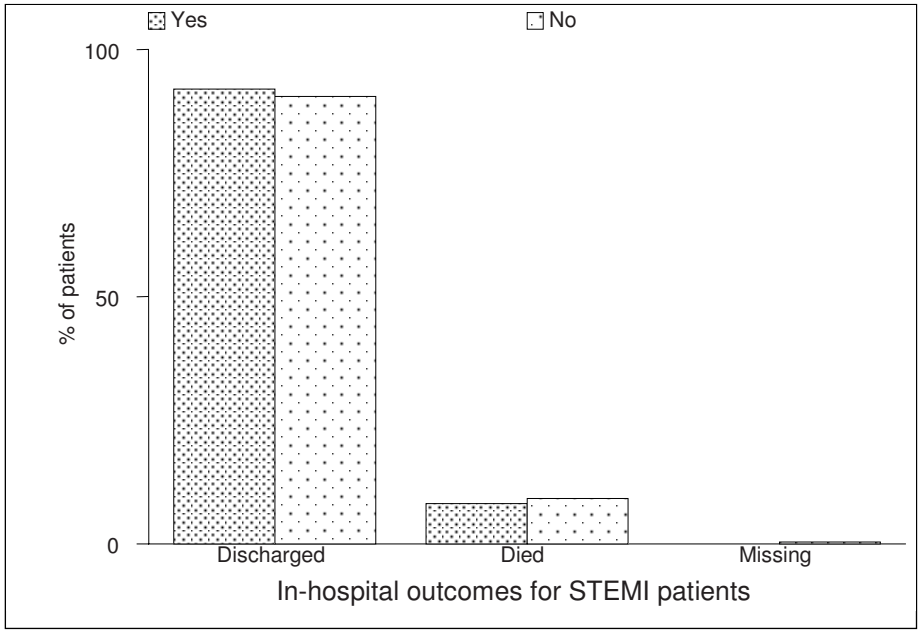

Figure 5.4.2b 30-day outcomes for patients with STEMI by percutaneous coronary intervention at admission, Malaysia 2006

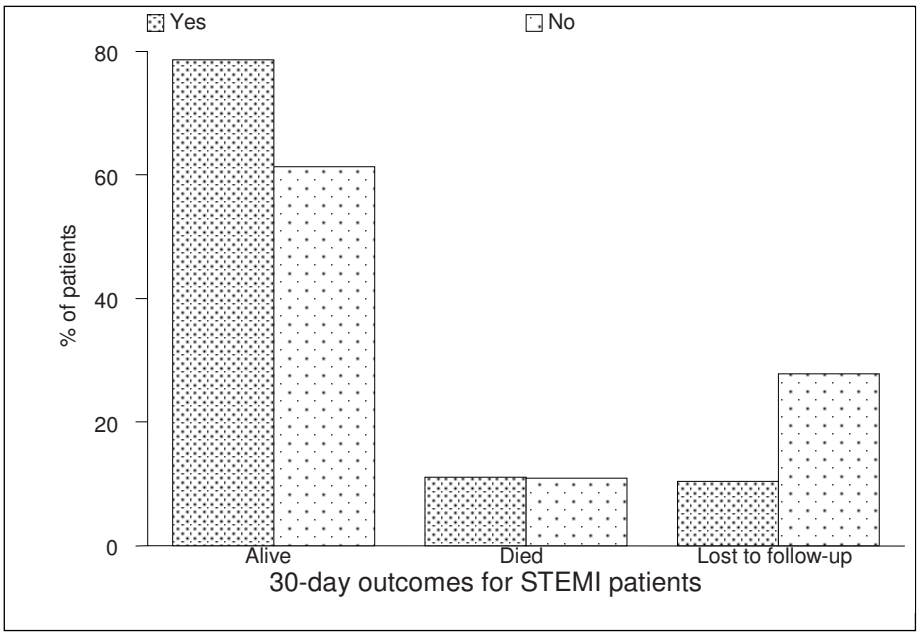

Table 5.4.3 Overall outcomes for patients with STEMI by CABG at admission, Malaysia 2006

Outcome	In-hospital				30-day*			
	CABG				CABG			
	Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	10	100	1302	91	10	100	929	65
• Died	0	0	129	9	0	0	158	11
• Lost to follow-up	NA	NA	NA	NA	0	0	348	24
• Missing	0	0	4	0	0	0	0	0

**Including patients who died in-hospital.*

Note: Percentage is to the nearest decimal point.

Figure 5.4.3a In-hospital outcomes for patients with STEMI by CABG at admission, Malaysia 2006

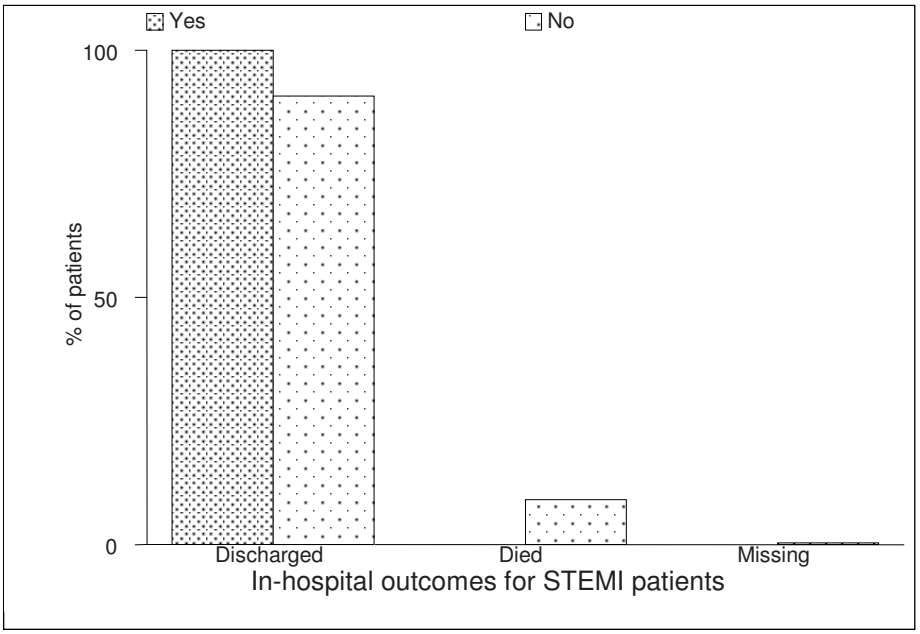

Figure 5.4.3b 30-day outcomes for patients with STEMI by CABG at admission, Malaysia 2006

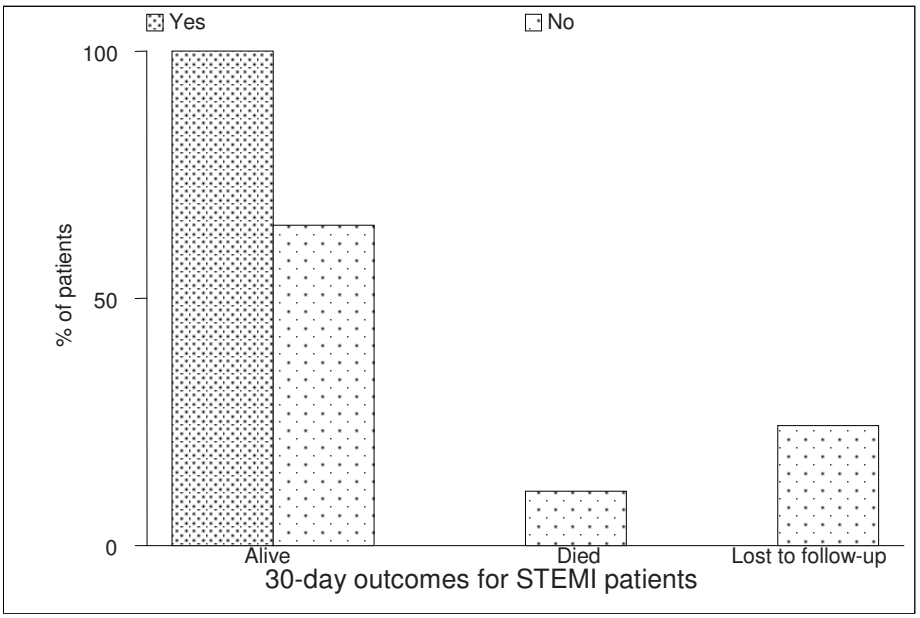

Table 5.4.4 Overall outcomes for patients with STEMI by pre-admission aspirin use, Malaysia 2006

Outcome	In-hospital						30-day*					
	Pre-admission aspirin use						Pre-admission aspirin use					
	Yes		No		Unknown		Yes		No		Unknown	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	200	88	885	92	227	90	128	56	660	68	151	60
• Died	27	12	76	8	26	10	33	15	95	10	30	12
• Lost to follow-up	NA	NA	NA	NA	NA	NA	66	29	210	22	72	28
• Missing	0	0	4	0	0	0	0	0	0	0	0	0

**Including patients who died in-hospital.*

Note: Percentage is to the nearest decimal point.

Figure 5.4.4a In-hospital outcomes for patients with STEMI by pre-admission aspirin use, Malaysia 2006

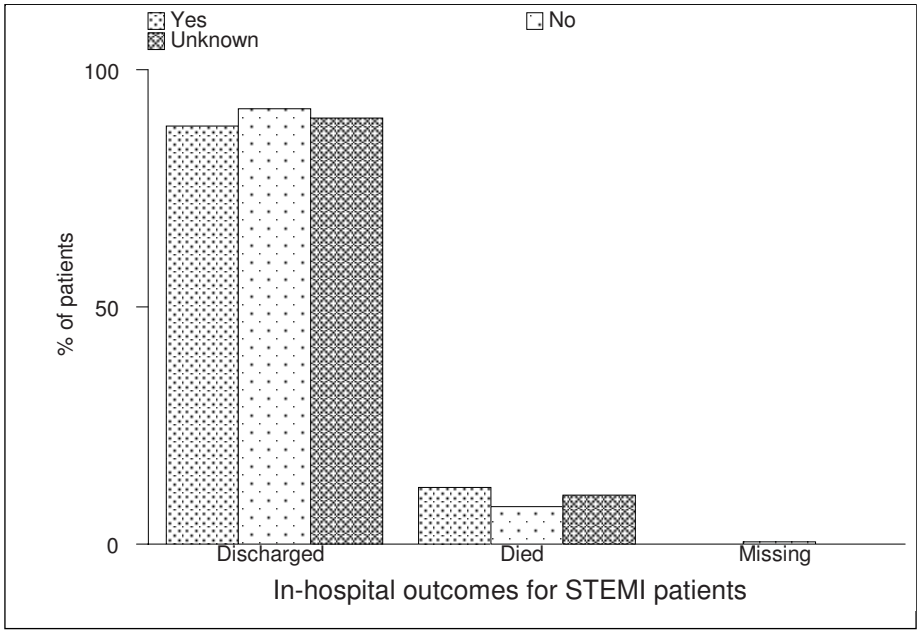

Figure 5.4.4b 30-day outcomes for patients with STEMI by pre-admission aspirin use, Malaysia 2006

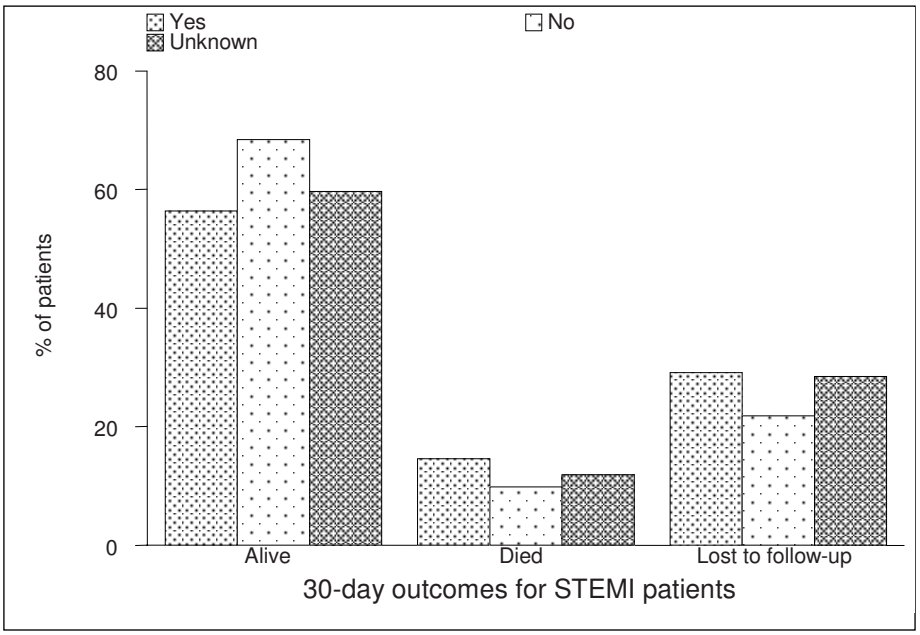

Table 5.5.1 Overall outcomes for patients with NSTEMI/UA by percutaneous coronary intervention, Malaysia 2006

Outcome	In-hospital				30-day*			
	Percutaneous coronary intervention				Percutaneous coronary intervention			
	Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	233	96	1641	95	207	86	1156	67
• Died	9	4	91	5	12	5	118	7
• Lost to follow-up	NA	NA	NA	NA	23	10	461	27
• Missing	0	0	3	0	0	0	0	0

**Including patients who died in-hospital.*

Note: Percentage is to the nearest decimal point.

Figure 5.5.1a In-hospital outcomes for patients with NSTEMI/UA by percutaneous coronary intervention, Malaysia 2006

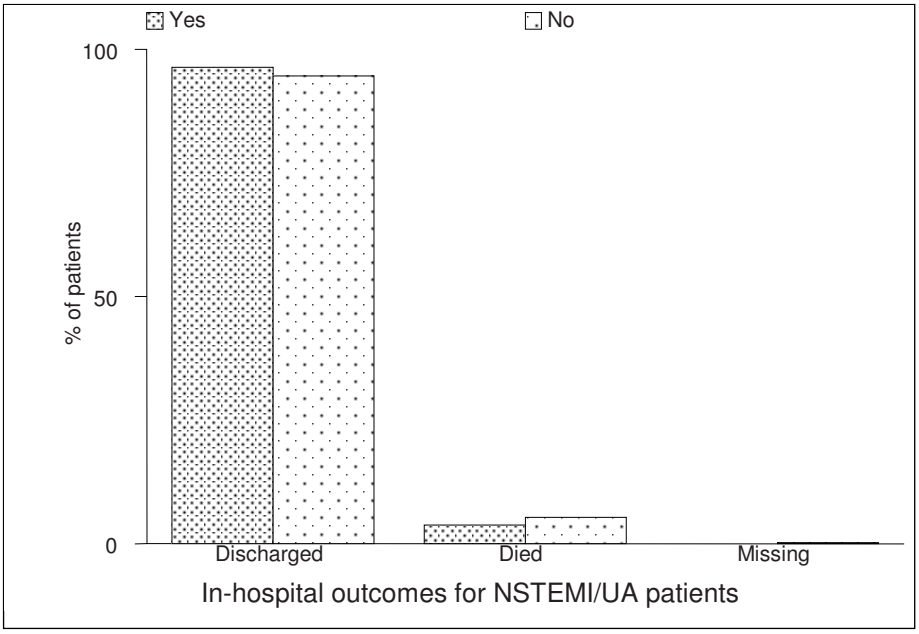

Figure 5.5.1b 30-day outcomes for patients with NSTEMI/UA by percutaneous coronary intervention, Malaysia 2006

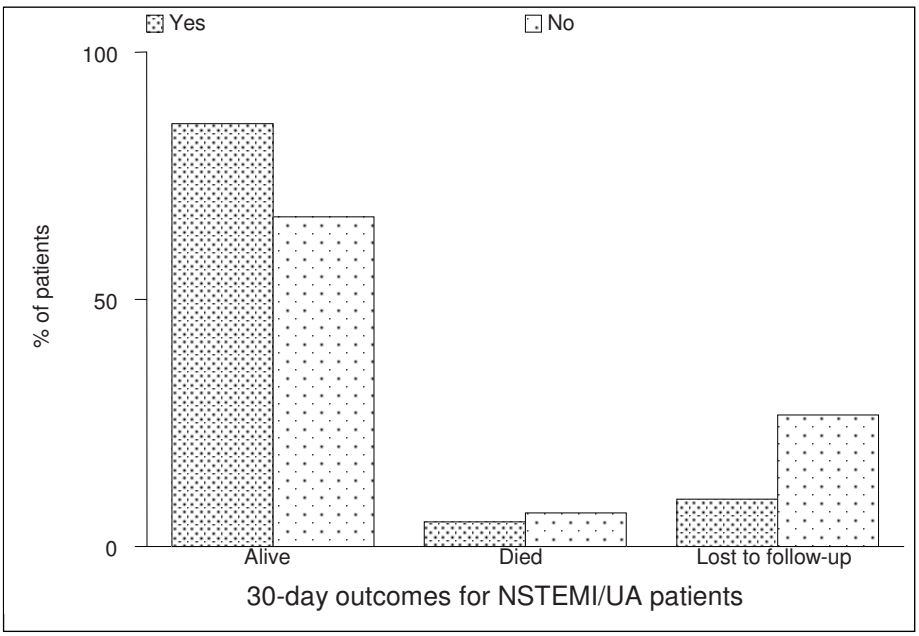

Table 5.5.2 Overall outcomes for patients with NSTEMI/UA by CABG, Malaysia 2006

Outcome	In-hospital				30-day*			
	CABG				CABG			
	Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	49	86	1825	95	47	82	1316	69
• Died	8	14	92	5	8	14	122	6
• Lost to follow-up	NA	NA	NA	NA	2	4	482	25
• Missing	0	0	3	0	0	0	0	0

**Including patients who died in-hospital.*

Note: Percentage is to the nearest decimal point.

Figure 5.5.2a In-hospital outcomes for patients with NSTEMI/UA by CABG, Malaysia 2006

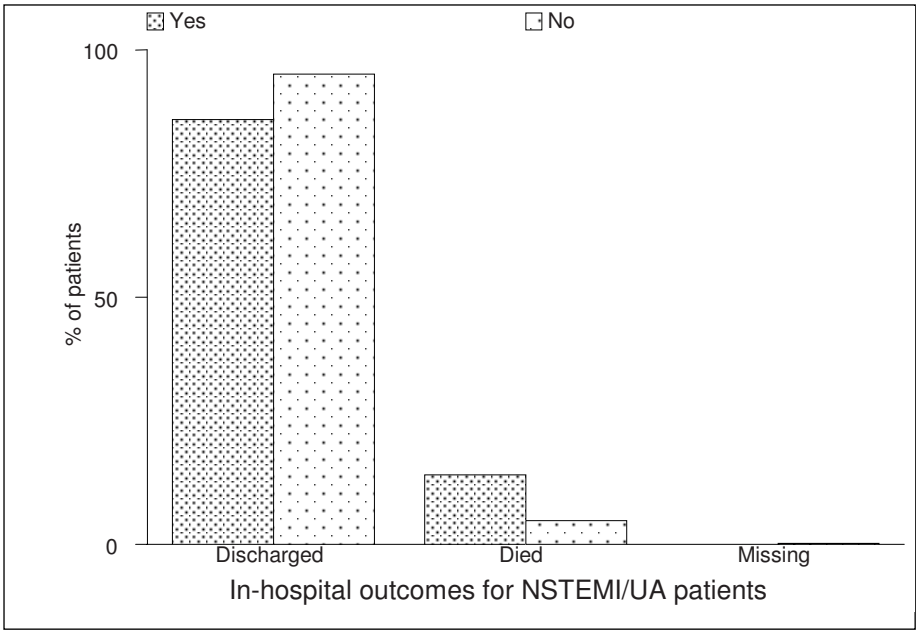

Figure 5.5.2b 30-day outcomes for patients with NSTEMI/UA by CABG, Malaysia 2006

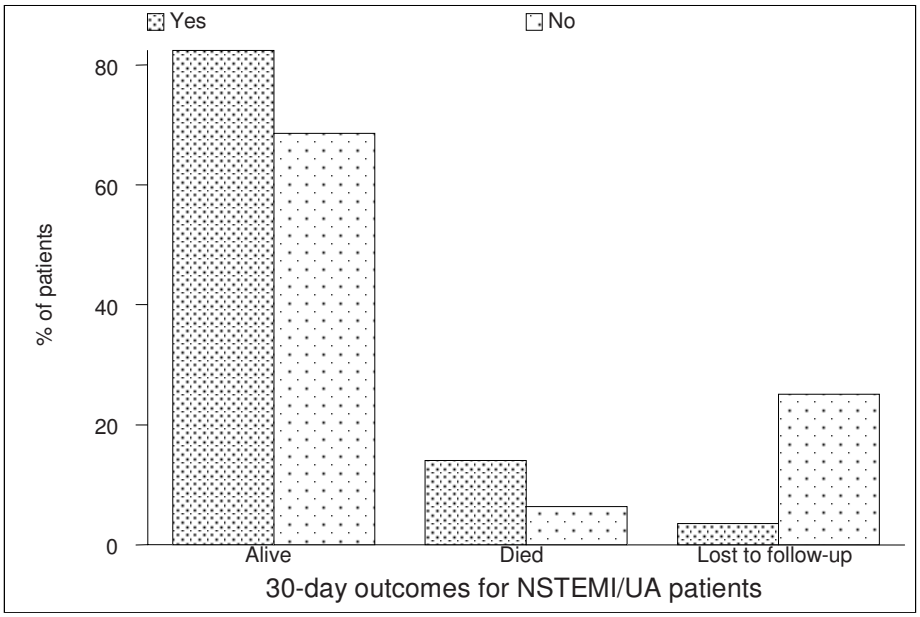

Table 5.5.3 Overall outcomes for patients with NSTEMI by pre-admission aspirin use, Malaysia 2006

Outcome	In-hospital						30-day*					
	Pre-admission aspirin use						Pre-admission aspirin use					
	Yes		No		Unknown		Yes		No		Unknown	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
• Discharged / Alive	796	95	688	95	390	94	582	70	501	69	280	67
• Died	41	5	34	5	25	6	56	7	44	6	30	7
• Lost to follow-up	NA	NA	NA	NA	NA	NA	199	24	180	25	105	25
• Missing	0	0	3	0	0	0	0	0	0	0	0	0

**Including patients who died in-hospital.*

Note: Percentage is to the nearest decimal point.

Figure 5.5.3a In-hospital outcomes for patients with NSTEMI/UA by pre-admission aspirin use, Malaysia 2006

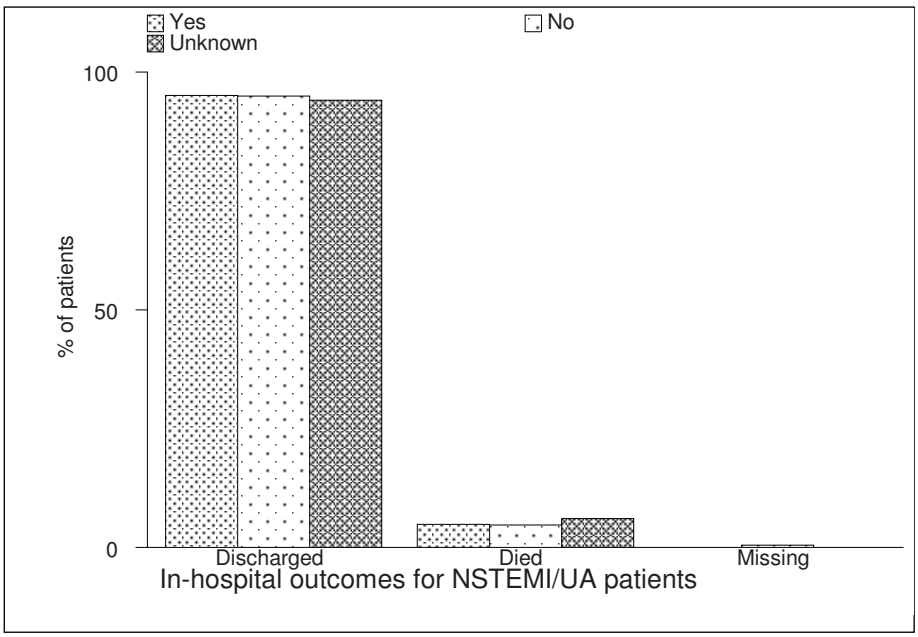

Figure 5.5.3b 30-day outcomes for patients with NSTEMI/UA by pre-admission aspirin use, Malaysia 2006

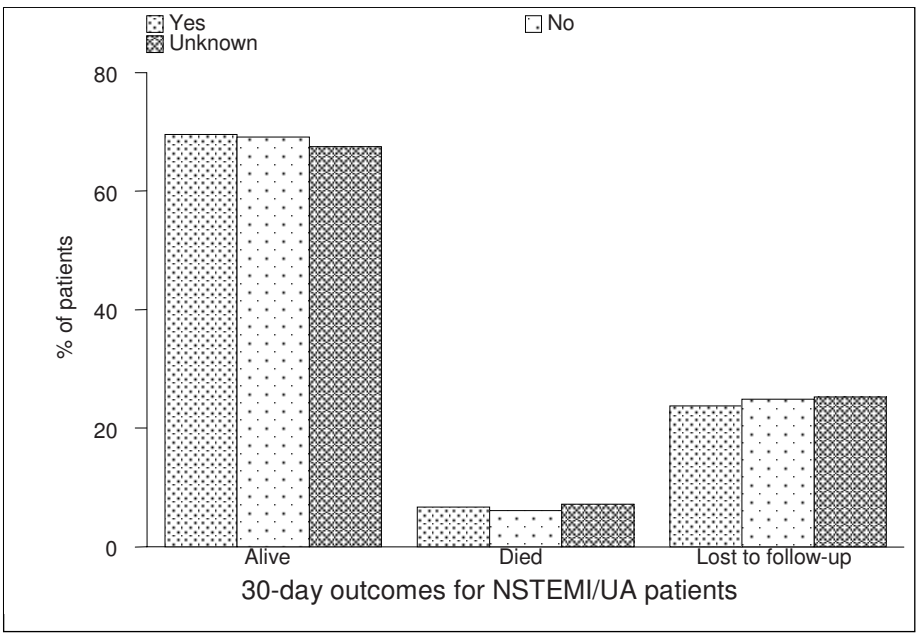

Table 5.6.1 Prognostic factors for death in hospital among STEMI patients, Malaysia 2006

Factors	N	Odd ratio	95% CI	P-value
Age group, years				
• 20 - <40 (ref)	113	1.00	-	-
• 40 - < 60	801	1.02	(0.29, 3.67)	0.97
• > =60	527	1.93	(0.53, 0.70)	0.32
Gender				
• Male (ref)	1226	1.00	-	-
• Female	215	1.23	(0.64, 2.39)	0.53
Ethnic group*				
• Malay	777	0.82	(0.32, 2.13)	0.69
• Chinese	300	0.81	(0.29, 2.35)	0.68
• Indian	286	0.72	(0.26, 2.01)	0.53
• Others (ref)	78	1.00	-	-
Killip classification code				
• I (ref)	891	1.00	-	-
• II	288	2.02	(1.17. 3.50)	0.01
• III	62	3.37	(1.54, 7.37)	0.002
• IV	66	8.50	(4.18, 17.27)	<0.001
• Not stated/ inadequately described	134	0.77	(0.30, 2.01)	0.59
Percutaneous coronary intervention				
• Yes	308	0.94	(0.39, 2.26)	0.88
• No (ref)	1133	1.00	-	-
Cardiac catheterization				
• Yes	298	0.84	(0.34, 2.09)	0.71
• No (ref)	1143	1.00	-	-
TIMI risk score				
• 0-2 (ref)	641	1.00	-	-
• 3-4	375	1.09	(0.55, 2.18)	0.80
• 5-7	337	2.03	(1.09, 3.78)	0.03
• >7	88	6.78	(3.22, 14.28)	<0.001
Fibrinolytic therapy				
• Given	1014	0.67	(0.43, 1.05)	0.08
• Not given (ref)	427	1.00	-	-

Factors	N	Odd ratio	95% CI	P-value
Smoking				
• Never (ref)	417	1.00	-	-
• Former (quit >30 days)	270	4.43	(1.89, 10.40)	0.001
• Current (any tobacco use within last 30 days)	721	3.37	(1.46, 7.82)	0.01
• Unknown	33	2.37	(0.80, 7.02)	0.12
Family history of premature cardiovascular disease				
• Yes	168	3.28	(1.23, 8.76)	0.02
• No (ref)	742	1.00	-	-
• Unknown	531	0.75	(0.40, 1.38)	0.35
Dyslipidaemia				
• Yes	278	2.56	(1.06, 6.15)	0.04
• No (ref)	458	1.00	-	-
• Unknown	705	1.20	(0.67, 2.18)	0.53
Hypertension				
• Yes	680	5.15	(2.24, 11.84)	<0.001
• No (ref)	433	1.00	-	-
• Unknown	328	1.00	(0.43, 2.32)	0.99
Diabetes				
• Yes	525	6.16	(2.82, 13.45)	<0.001
• No (ref)	538	1.00	-	-
• Unknown	378	1.57	(0.73, 3.39)	0.25
Heart failure				
• Yes	48	0.99	(0.38, 2.57)	0.99
• No (ref)	1008	1.00	-	-
• Unknown	385	1.30	(0.58, 2.92)	0.53
Coronary artery disease**				
• Yes	779	1.06	(0.48, 2.36)	0.88
• No (ref)	356	1.00	-	-
• Unknown	306	1.15	(0.46, 2.90)	0.77

**Others include Orang asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and foreigner.*

***Coronary artery disease is defined as "Yes" on any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks).*

Table 5.6.2 Prognostic factors for death in hospital among NSTEMI/UA patients, Malaysia 2006

Factors	N	Odd ratio	95% CI	P-value
Age group, years				
• 20 - <40 (ref)	53	1.00	-	-
• 40 - < 60	871	1.37	(0.16, 11.95)	0.78
• > =60	1050	3.80	(0.45, 32.15)	0.22
Gender				
• Male (ref)	1339	1.00	-	-
• Female	635	0.98	(0.56, 1.71)	0.93
Ethnic group*				
• Malay	901	1.56	(0.44, 5.51)	0.49
• Chinese	485	0.91	(0.24, 3.39)	0.89
• Indian	513	0.88	(0.23, 3.36)	0.85
• Others (ref)	75	1.00	-	-
Killip classification code				
• I (ref)	1247	1.00	-	-
• II	304	2.27	(1.27, 4.04)	0.01
• III	91	4.56	(2.16, 9.60)	<0.001
• IV	34	11.74	(4.81, 28.63)	<0.001
• Not stated/ inadequately described	298	0.78	(0.36, 1.67)	0.52
Percutaneous coronary intervention				
• Yes	242	0.64	(0.26, 1.63)	0.36
• No (ref)	1732	1.00	-	-
Cardiac catheterization				
• Yes	357	1.84	(0.88, 3.85)	0.10
• No (ref)	1617	1.00	-	-
TIMI risk score				
• 0-2 (ref)	1137	1.00	-	-
• 3-4	689	0.72	(0.43, 1.19)	0.20
• 5-7	148	1.94	(0.88, 4.27)	0.10

Factors	N	Odd ratio	95% CI	P-value
Smoking				
• Never (ref)	951	1.00	-	-
• Former (quit >30 days)	533	3.30	(1.52, 7.16)	0.002
• Current (any tobacco use within last 30 days)	414	2.46	(1.03, 5.89)	0.04
• Unknown	76	2.79	(1.09, 7.12)	0.03
Family history of premature cardiovascular disease				
• Yes	236	1.11	(0.37, 3.33)	0.86
• No (ref)	939	1.00	-	-
• Unknown	799	1.30	(0.74, 2.30)	0.36
Dyslipidaemia				
• Yes	852	1.22	(0.53, 2.79)	0.64
• No (ref)	443	1.00	-	-
• Unknown	679	0.64	(0.32, 1.26)	0.19
Hypertension				
• Yes	1401	1.57	(0.70, 3.53)	0.28
• No (ref)	352	1.00	-	-
• Unknown	221	0.37	(0.14, 1.01)	0.05
Diabetes				
• Yes	971	3.03	(1.40, 6.55)	0.01
• No (ref)	686	1.00	-	-
• Unknown	317	2.39	(1.02, 5.60)	0.05
Heart failure				
• Yes	236	2.15	(1.18, 3.91)	0.01
• No (ref)	1278	1.00	-	-
• Unknown	460	1.68	(0.81, 3.52)	0.17
Coronary artery disease**				
• Yes	1419	1.72	(0.82, 3.61)	0.15
• No (ref)	331	1.00	-	-
• Unknown	224	1.79	(0.66, 4.84)	0.25

**Others include Orang asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and foreigner.*

***Coronary artery disease is defined as "Yes" on any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks).*

Table 5.6.3 Prognostic factors for death in 30 days among STEMI patients, Malaysia 2006

Factors	N	Odd ratio	95% CI	P-value
Age group, years				
• 20 - <40 (ref)	88	1.00	-	-
• 40 - < 60	581	1.18	(0.39, 3.59)	0.78
• > =60	428	1.88	(0.61, 5.84)	0.28
Gender				
• Male (ref)	927	1.00	-	-
• Female	170	1.45	(0.78, 2.70)	0.24
Ethnic group*				
• Malay	588	1.35	(0.51, 3.58)	0.54
• Chinese	246	0.93	(0.33, 2.60)	0.88
• Indian	209	1.12	(0.39, 3.18)	0.83
• Others (ref)	54	1.00	-	-
Killip classification code				
• I (ref)	707	1.00	-	-
• II	223	1.40	(0.84, 2.34)	0.20
• III	49	2.64	(1.20, 5.79)	0.02
• IV	53	6.64	(3.15, 14.00)	<0.001
• Not stated/ inadequately described	65	0.78	(0.30, 2.06)	0.63
Percutaneous coronary intervention				
• Yes	276	0.66	(0.31, 1.42)	0.29
• No (ref)	821	1.00	-	-
Cardiac catheterization				
• Yes	270	1.09	(0.50, 2.38)	0.82
• No (ref)	827	1.00	-	-
Fibrinolytic therapy				
• Given	776	0.54	(0.35, 0.84)	0.01
• Not given (ref)	321	1.00	-	-
TIMI risk score				
• 0-2 (ref)	492	1.00	-	-
• 3-4	270	1.61	(0.90, 2.89)	0.11
• 5-7	263	2.26	(1.26, 4.04)	0.01
• >7	72	7.70	(3.62, 16.40)	<0.001
Smoking				
• Never (ref)	314	1.00	-	-
• Former (quit >30 days)	200	5.19	(2.33, 11.56)	<0.001
• Current (any tobacco use within last 30 days)	560	3.18	(1.45, 6.97)	0.01
• Unknown	23	1.74	(0.55, 5.44)	0.34

Factors	N	Odd ratio	95% CI	P-value
Family history of premature cardiovascular disease				
• Yes	127	4.23	(1.76, 10.20)	0.02
• No (ref)	583	1.00	-	-
• Unknown	387	0.96	(0.53, 1.74)	0.89
Dyslipidaemia				
• Yes	225	1.87	(0.81, 4.29)	0.14
• No (ref)	331	1.00	-	-
• Unknown	541	1.11	(0.64, 1.93)	0.71
Hypertension				
• Yes	534	4.92	(2.24, 10.79)	<0.001
• No (ref)	308	1.00	-	-
• Unknown	255	1.11	(0.49, 2.47)	0.81
Diabetes				
• Yes	390	5.62	(2.70, 11.71)	<0.001
• No (ref)	399	1.00	-	-
• Unknown	308	0.95	(0.46, 2.00)	0.90
Heart failure				
• Yes	37	2.12	(0.84, 5.37)	0.11
• No (ref)	780	1.00	-	-
• Unknown	280	1.57	(0.71, 3.46)	0.27
Coronary artery disease**				
• Yes	599	0.86	(0.40, 1.87)	0.71
• No (ref)	258	1.00	-	-
• Unknown	240	1.28	(0.53, 3.10)	0.59

**Others include Orang asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and foreigner.*

***Coronary artery disease is defined as "Yes" on any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks).*

Table 5.6.4 Prognostic factors for death in 30 days among NSTEMI/UA patients, Malaysia 2006

Factors	N	Odd ratio	95% CI	P-value
Age group, years				
• 20 - <40 (ref)	35	1.00	-	-
• 40 - < 60	639	0.65	(0.13, 3.20)	0.60
• > =60	819	1.97	(0.41, 9.52)	0.40
Gender				
• Male (ref)	1028	1.00	-	-
• Female	465	0.97	(0.59, 1.58)	0.89
Ethnic group*				
• Malay	631	1.13	(0.41, 3.12)	0.82
• Chinese	403	0.62	(0.21, 1.79)	0.37
• Indian	400	0.75	(0.26, 2.18)	0.59
• Others (ref)	59	1.00	-	-
Killip classification code				
• I (ref)	967	1.00	-	-
• II	266	1.88	(1.13, 3.11)	0.02
• III	82	3.20	(1.60, 6.40)	0.001
• IV	28	6.96	(2.82, 17.21)	<0.001
• Not stated/ inadequately described	150	1.07	(0.55, 2.06)	0.84
Percutaneous coronary intervention				
• Yes	219	0.64	(0.29, 1.43)	0.28
• No (ref)	1274	1.00	-	-
Cardiac catheterization				
• Yes	334	1.43	(0.75, 2.70)	0.28
• No (ref)	1159	1.00	-	-
TIMI risk score				
• 0-2 (ref)	806	1.00	-	-
• 3-4	554	0.76	(0.48, 1.18)	0.22
• 5-7	133	1.53	(0.76, 3.05)	0.23
Smoking				
• Never (ref)	714	1.00	-	-
• Former (quit >30 days)	428	2.43	(1.25, 4.72)	0.01
• Current (any tobacco use within last 30 days)	298	1.84	(0.85, 3.926)	0.12
• Unknown	53	1.63	(0.65, 4.12)	0.30

Factors	N	Odd ratio	95% CI	P-value
Family history of premature cardiovascular disease				
• Yes	176	1.29	(0.51, 3.31)	0.59
• No (ref)	699	1.00	-	-
• Unknown	618	1.28	(0.77, 2.12)	0.34
Dyslipidaemia				
• Yes	688	0.95	(0.47, 1.93)	0.90
• No (ref)	297	1.00	-	-
• Unknown	508	0.57	(0.31, 1.05)	0.07
Hypertension				
• Yes	1062	1.38	(0.67, 2.86)	0.38
• No (ref)	265	1.00	-	-
• Unknown	166	0.51	(0.20, 1.26)	0.14
Diabetes				
• Yes	763	3.12	(1.58, 6.16)	0.001
• No (ref)	496	1.00	-	-
• Unknown	234	1.70	(0.78, 3.71)	0.18
Heart failure				
• Yes	195	1.70	(0.98, 2.96)	0.06
• No (ref)	955	1.00	-	-
• Unknown	343	1.95	(1.02, 3.71)	0.04
Coronary artery disease**				
• Yes	1089	1.78	(0.92, 3.46)	0.09
• No (ref)	247	1.00	-	-
• Unknown	157	1.64	(0.67, 4.01)	0.28

**Others include Orang asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and foreigner.*

***Coronary artery disease is defined as "Yes" on any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD >50% stenosis, 3) Chronic angina (onset more than 2 weeks ago), 4) New onset angina (less than 2 weeks).*