CHAPTER 4

TREATMENT

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This chapter summarizes management pattern of patients admitted with acute coronary syndrome registered in the ACS registry 2006.

Admission days

In general the total admission days in hospital is similar across the ACS strata; that is STEMI 6 days ±3, NSTEMI 6 days ± 4 and UA 5 days ± 4. However, there is an increasing trend of total admission days with increasing age (STEMI; young is 5 days ± 2, middle age is 6 days ± 3, elderly is 7 days ± 4 and NSTEMI/UA; young is 5 ± 2 days, middle age is 5 ± 3 days, elderly is 6 ± 4 days).

A similar pattern is also seen in the number of days in CCU where the days spent after STEMI increases as the age increases with a maximum of 21 days in the middle age and 26 days in the elderly age groups, as compared to 10 days in the young age group. A similar pattern is also seen in the number of days spent in intensive care unit (ICU)/ coronary intensive care unit (CICU) post STEMI, with a generally higher number of days for the middle age and elderly age group with a maximum of 17 days, as compared to only 4 days maximum in the young age group. The young age group patients also spent fewer days in CCU/ICU/CICU post NSTEMI/UA (Table 4.3.1).

In general, no differences are seen in total admission days or number of days admitted to CCU between the different ethnic groups presented with ACS. However, a longer admission into ICU/CICU was seen among the Malays (mean 4 days ± 4) following STEMI, as compared to other ethnic groups (Chinese 2 days ± 2, Indian and other ethnic groups 2 days ± 1). In NSTEMI/UA, the Malay group spent the longest time in CCU/ICU/CICU (24 days) while the lowest was in ethnic groups other than Malays, Chinese and Indian (10 days).

Treatment of STEMI (Table 4.1)

Out of the total 1,445 patients with STEMI, 70% received fibrinolytic therapy. The highest proportion of patients who received fibrinolytic therapy was seen in the young age group (aged 20 ≥ X > 40, 78%) versus the middle age (aged 40 ≥ X >60, 75%) and elderly (aged ≥ 60, 62%). The proportion of females treated with fibrinolysis was also lower than males (67% v 71% respectively). Amongst the different ethnic groups, the Malays received the most fibrinolysis treatment (78%) with the lowest proportion being the Indians (66%). However, out of the total of 117 patients who proceeded directly to primary angioplasty, the highest proportion was in the Indian population (13%), followed by Chinese (8%), Malays (7%) and other ethnic groups (6%).

Most of the patients presenting with STEMI were treated conservatively during the same admission with only 308 (21%) having percutaneous coronary intervention (PCI). Most

patients were treated and stabilized medically and referred to a tertiary centre later on as outpatients for further management. There was no difference in the number of PCI among the different age groups. Male patients had a higher proportion of PCI (22%) as compared to the females (16%). When comparing the different ethnic groups that presented with STEMI, the Indian population had the highest proportion of PCI (29%) with the Malay population (18%) accounting for the lowest proportion.

Only a small number (n=10) underwent CABG during the same admission following a STEMI, with mostly in the elderly age group (n=7).

Treatment of NSTEMI/UA

Out of the total of 1,977 patients presenting with NSTEMI/UA, the highest number of patients was in the elderly age group (n=1052), followed by middle age (n=872) and young age group (n=53). The majority of patients were treated medically and only 14% of NSTEMI and 9% of UA patients had PCI. There were more number of younger age group patients (19%) compared to middle age group (14%) and elderly age group (11%) who went for PCI. A small number of middle age (n=13, 1%) and elderly patients (n=22, 2%) were transferred to another centre for further intervention. A small number of middle age (n=25) and elderly (n=32) patients had CABG performed during the same admission.

The number of PCI appeared to be lower in females (n=60, 9%) than male (n=182, 14%). There was no significant difference seen in the proportion of patients undergoing PCI among different ethnic groups. The proportion of patients transferred to another centre was also similar among the different ethnic groups.

Pharmacological treatment of ACS

Aspirin and statins were used in more than 90% of patients in all the ACS groups with no difference seen in STEMI patients of different genders, age groups and ethnic groups. However, there was a downward trend in the use of aspirin during admission with NSTEMI/UA as the age increased (young 94%, middle age 92% and elderly 89%). Female patients who had NSTEMI/UA also received less treatment with aspirin (88%) as compared to male patients (91%). ADP antagonist use was slightly lower in the UA group (50%) as compared to the STEMI (60%) or NSTEMI groups (64%).

Due to religious beliefs, the use of LMWH in the Malay population was the lowest in both ACS strata (28% in STEMI, 55% in NSTEMI/UA) as compared to the rest of the ethnic groups (Table 4.2.3 and 4.3.3). The use of GP receptor inhibitor was very low in all ACS strata, the highest being in STEMI (n=77, 5%), NSTEMI (n=47, 4%) and UA (n=19, 2%).

Hypoglycaemic agents were mostly used among the Indian population for all ACS presentations, reaching 41% in STEMI and 42% in NSTEMI/UA. Similarly insulin therapy in the Indian patients was also the highest (37% in all ACS) as compared to the other ethnic groups. This may reflect the prevalence of diabetes in the different ethnic groups.

In all the ACS groups, diuretics were used the most amongst the elderly age group (STEMI 37% and NSTEMI 42%). The lowest usage of diuretics was seen in the young patients presenting with STEMI (2%). This is in proportion with the high proportion of Killips Class 1 in the young age group as described in the earlier chapter.

Summary Points:

- Patients with ACS stayed an average of 6 days in hospital which included approximately 3 days in CCU. There is an increasing trend of longer duration of hospitalization with increasing age.
- For the STEMI patients 70% received thrombolysis and only 8% proceeded directly to primary angioplasty.
- The highest proportion of patients who received thrombolytic therapy was seen in the young age group, male and Malays.
- Twenty-percent of STEMI patients had PCI during the same admission. Males have a higher proportion of PCI compared to females and Indians have the highest proportion of PCI while Malays had the lowest.
- For NSTEMI/UA, majority of the patients were medically treated. Only 14% of NSTEMI and 9% of UA patients had PCI on the same admission.
- Prescription and utilization of adjunctive proven pharmacological therapy were high in all groups.

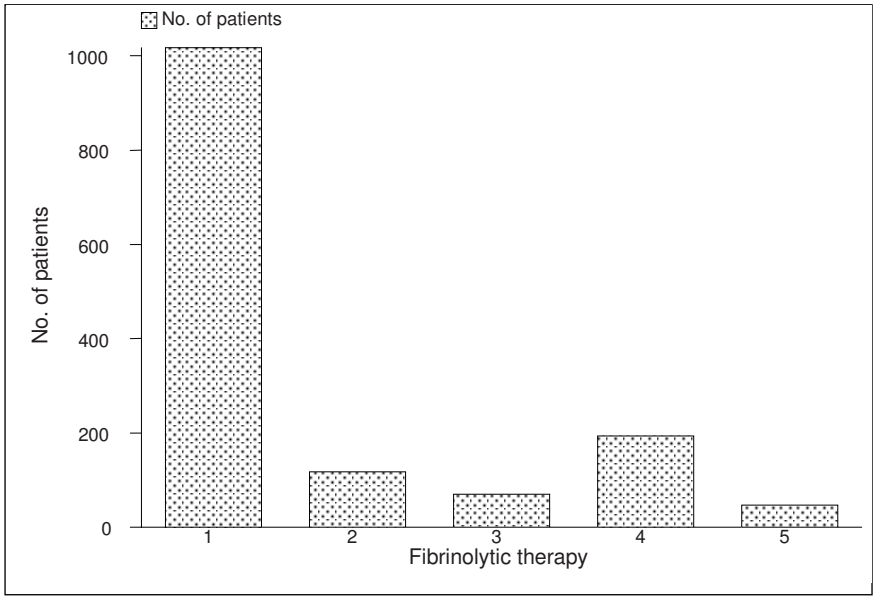
Table 4.1 Summary of treatments for patients with ACS by ACS stratum, Malaysia 2006

	STEMI N=1445	NSTEMI N=1132	UA N=845
Total admission days*			
• N	1420	1104	830
• Mean, SD	6 (3)	6 (4)	5 (4)
• Median, (min, max)	5 (1,28)	5 (1,30)	4 (1,29)
Number of days on CCU			
• N	1093	450	140
• Mean, SD	3 (3)	4 (3)	3 (3)
• Median, (min, max)	3 (1,26)	3 (1,24)	2 (1,20)
Number of days on ICU/CICU			
• N	87	110	27
• Mean, SD	3 (3)	4 (3)	4 (2)
• Median, (min, max)	2 (1,17)	3 (1,23)	4 (1,9)
Fibrinolytic therapy, no. %			
• Given	1018 (70)	NA	NA
• Not given–proceeded directly to primary angioplasty	117 (8)	NA	NA
• Not given-Contraindicated	70 (5)	NA	NA
• Not given–Missed thrombolysis	193 (13)	NA	NA
• Not given–Others**	47 (3)	NA	NA
Cardiac catheterization, no. %			
• Yes	298 (21)	251 (22)	106 (13)
• No	1106 (77)	858 (76)	727 (86)
• Number transferred to another centre	39 (3)	23 (2)	12 (1)
Percutaneous coronary intervention, no. %			
• Yes	308 (21)	162 (14)	80 (9)
• No	1137 (79)	970 (86)	765 (91)
CABG, no. %			
• Yes	10 (1)	42 (4)	15 (2)
• No	1435 (99)	1090 (96)	830 (98)
Pre-admission aspirin use, no. %			
• Yes	227 (16)	465 (41)	372 (44)
• No	965 (67)	468 (41)	257 (30)
• Unknown	253 (18)	199 (18)	216 (26)

	STEMI N=1445	NSTEMI N=1132	UA N=845
Pharmacological therapy given during admission, no. %			
• Aspirin	1368 (95)	1018 (90)	765 (91)
• ADP antagonist	868 (60)	719 (64)	422 (50)
• GP receptor inhibitor	77 (5)	47 (4)	19 (2)
• Unfractionated heparin	181 (13)	203 (18)	197 (23)
• LMWH	446 (31)	767 (68)	537 (64)
• Beta blocker	951 (66)	737 (65)	587 (69)
• ACE inhibitor	865 (60)	597 (53)	510 (60)
• Angiotensin II receptor blocker	66 (5)	131 (12)	70 (8)
• Statin	1333 (92)	1022 (90)	769 (91)
• Other lipid lowering agent	54 (4)	79 (7)	54 (6)
• Diuretics	393 (27)	464 (41)	241 (29)
• Calcium antagonist	94 (7)	253 (22)	195 (23)
• Oral hypoglycaemic agent	373 (26)	364 (32)	236 (28)
• Insulin	379 (26)	320 (28)	183 (22)
• Anti-arrhythmic agent	135 (9)	72 (6)	49 (6)

**Total admission days is derived as Outcome date – Admission date + 1*
***Not given–Others includes missing and refusal*
Note: Percentage is to the nearest decimal point.

Figure 4.1.1 Fibrinolytic therapy for patients with STEMI by ACS stratum, Malaysia 2006



*1. Given, 2. Not given–proceeded directly to primary angioplasty, 3. Not given-Contraindicated, 4. Not given–Missed thrombolysis, 5. Not given–Others***

Figure 4.1.2 Cardiac catheterization for patients with ACS by ACS stratum, Malaysia 2006

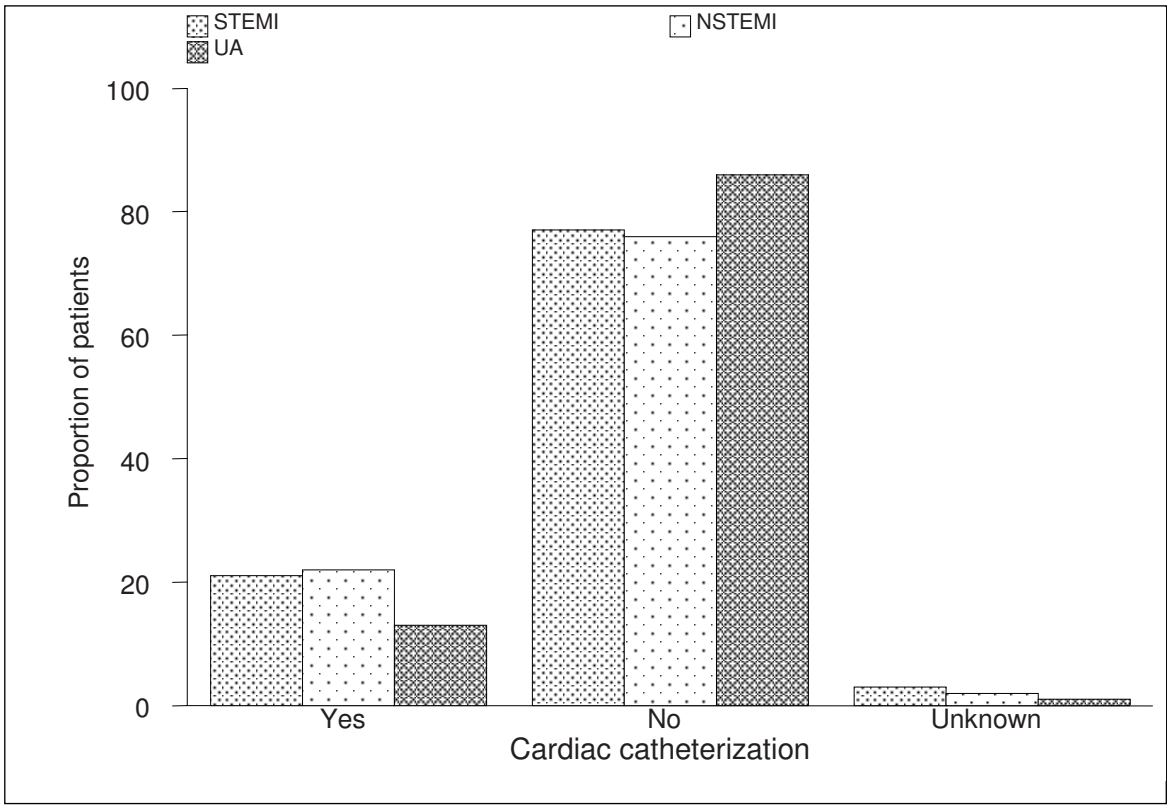


Figure 4.1.3 Percutaneous coronary intervention for patients with ACS by ACS stratum, Malaysia 2006

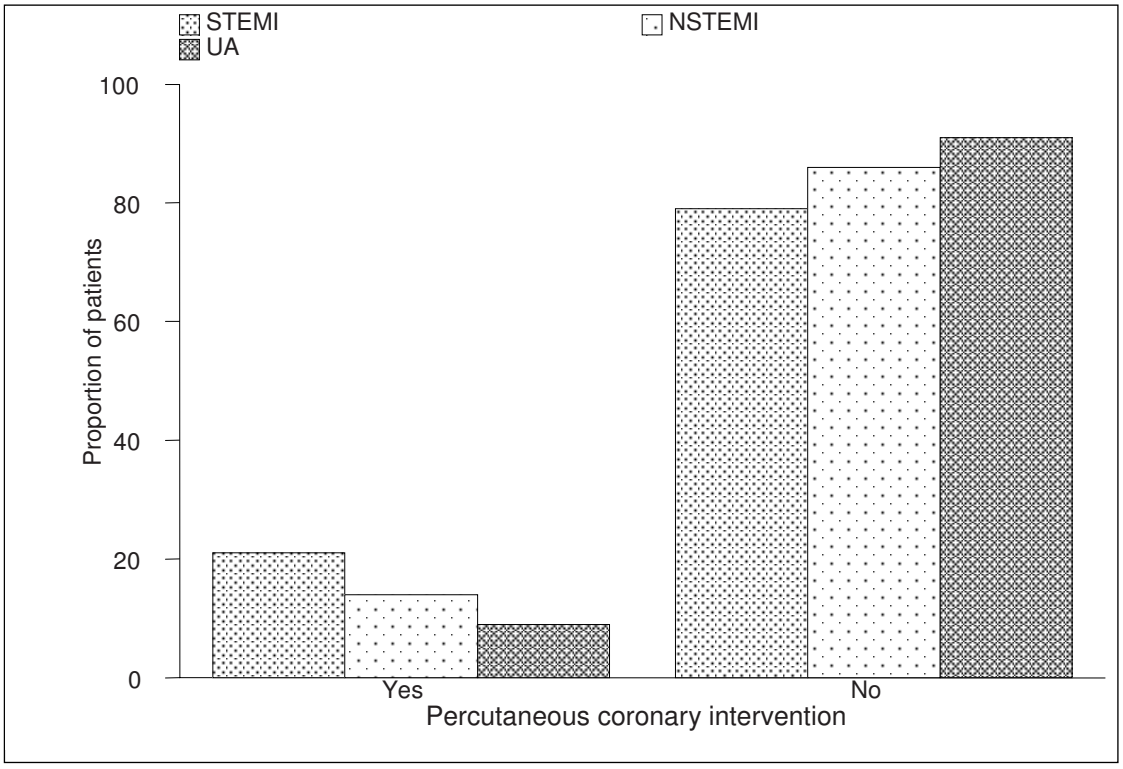


Figure 4.1.4 CABG for patients with ACS by ACS stratum, Malaysia 2006

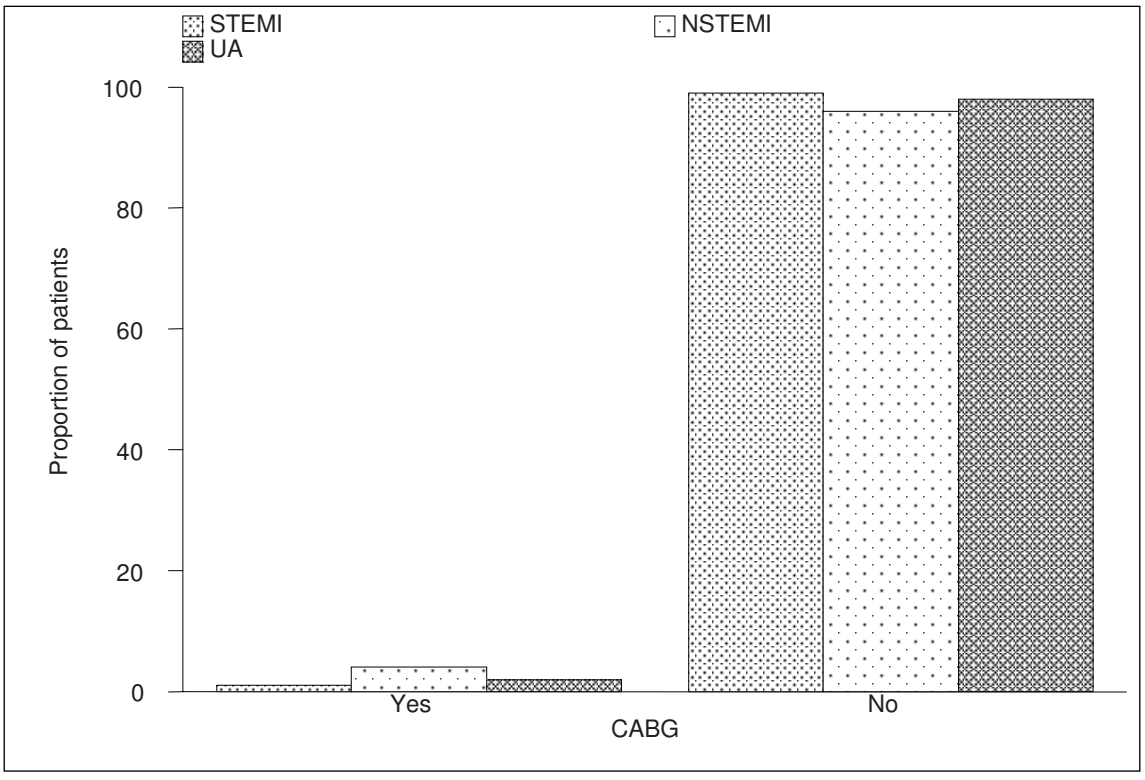


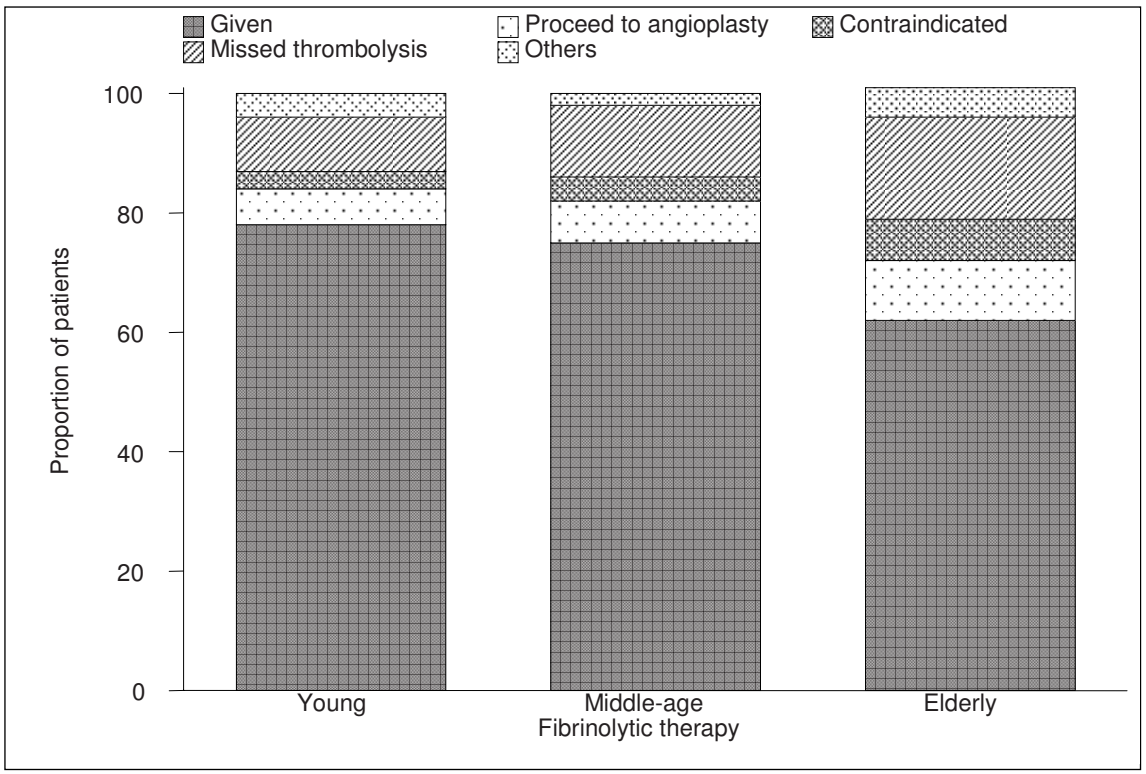
Table 4.2.1 Treatments for patients with STEMI by age group (years), Malaysia 2006

	Age group*		
	Young N=113	**Middle-age N=803**	**Elderly N=529**
Total admission days**			
• N	110	796	514
• Mean, SD	5 (2)	6 (3)	7 (4)
• Median, (min, max)	5 (1,20)	5 (1,28)	5 (1,28)
Number of days on CCU			
• N	86	614	393
• Mean, SD	3 (2)	3 (2)	4 (3)
• Median, (min, max)	3 (1,10)	3 (1,21)	3 (1,26)
Number of days on ICU/CICU			
• N	7	48	32
• Mean, SD	2 (1)	3 (3)	4 (4)
• Median, (min, max)	2 (1,4)	2 (1,17)	3 (1,17)
Fibrinolytic therapy, no. %			
• Given	88 (78)	601 (75)	329 (62)
• Not given–proceeded directly to primary angioplasty	7 (6)	59 (7)	51 (10)
• Not given– Contraindicated	3 (3)	31 (4)	36 (7)
• Not given–Missed thrombolysis	10 (9)	94 (12)	89 (17)
• Not given – Others***	5 (4)	18 (2)	24 (5)
Cardiac catheterization, no. %			
• Yes	27 (24)	171 (21)	100 (19)
• No	81 (72)	612 (76)	413 (78)
• No-Transferred to another centre	5 (4)	19 (2)	15 (3)
Percutaneous coronary intervention, no. %			
• Yes	25 (22)	180 (22)	103 (19)
• No	88 (78)	623 (78)	426 (81)
CABG, no. %			
• Yes	0 (0)	3 (0)	7 (1)
• No	113 (100)	800 (100)	522 (99)
Pre-admission aspirin use, no. %			
• Yes	10 (9)	111 (14)	106 (20)
• No	89 (79)	536 (67)	340 (64)
• Unknown	14 (12)	156 (19)	83 (16)

	Age group*		
	Young N=113	**Middle-age N=803**	**Elderly N=529**
Pharmacological therapy given during admission, no. %			
• ASA	110 (97)	760 (95)	498 (94)
• ADP antagonist	69 (61)	452 (56)	347 (66)
• GP receptor inhibitor	7 (6)	42 (5)	28 (5)
• Unfractionated heparin	10 (9)	105 (13)	66 (12)
• LMWH	44 (39)	232 (29)	170 (32)
• Beta blocker	86 (76)	555 (69)	310 (59)
• ACE inhibitor	68 (60)	506 (63)	291 (55)
• Angiotensin II receptor blocker	6 (5)	39 (5)	21 (4)
• Statin	105 (93)	750 (93)	478 (90)
• Other lipid lowering agent	10 (9)	29 (4)	15 (3)
• Diuretics	13 (12)	184 (23)	196 (37)
• Calcium antagonist	3 (3)	46 (6)	45 (9)
• Oral hypoglycaemic agent	22 (19)	229 (29)	122 (23)
• Insulin	22 (19)	221 (28)	136 (26)
• Anti-arrhythmic agent	7 (6)	71 (9)	57 (11)

**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.*
***Total admission days is derived as Outcome date – Admission date + 1*
****Not given–Others includes missing and refusal*
Note: Percentage is to the nearest decimal point.

Figure 4.2.1a Fibrinolytic therapy for patients with STEMI by age group, Malaysia 2006



*1. Given, 2. Not given–proceeded directly to primary angioplasty, 3. Not given-Contraindicated, 4. Not given–Missed thrombolysis, 5. Not given–Others***

*** Others includes patients who refused the fibrinolytic therapy and missing*

Note: Percentage is to the nearest decimal point.

Figure 4.2.1b Cardiac catheterization for patients with STEMI by age group, Malaysia 2006

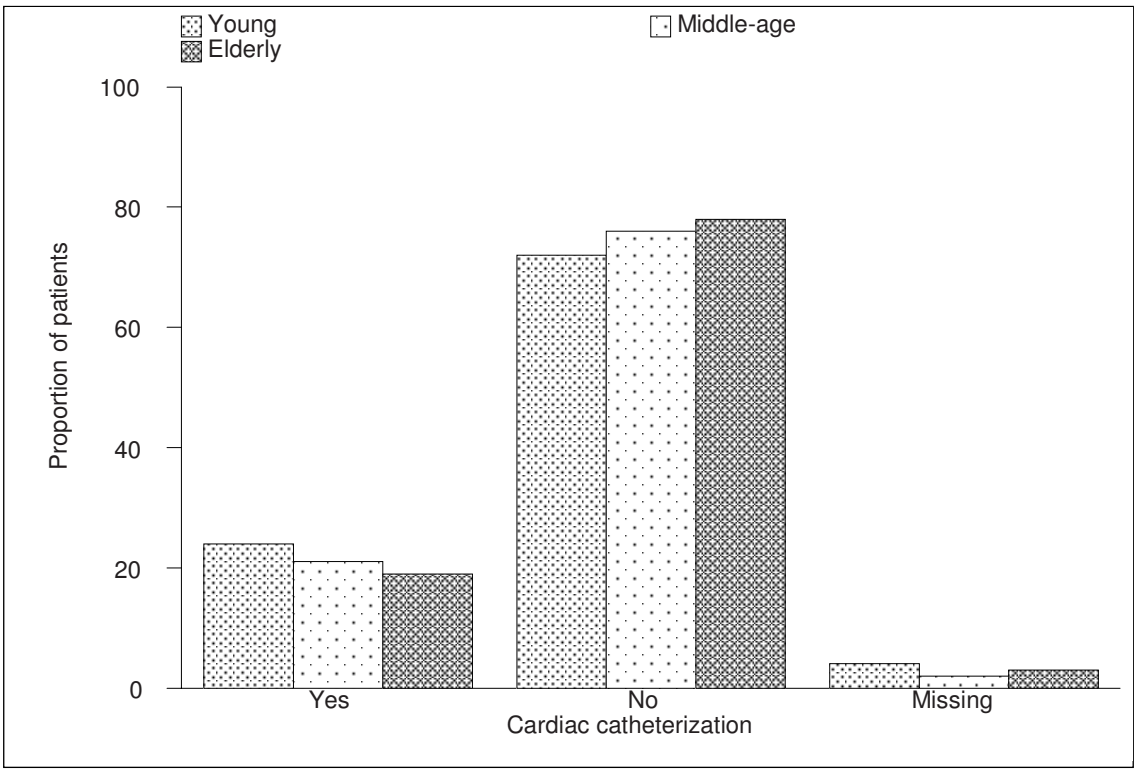


Figure 4.2.1c Percutaneous coronary intervention for patients with STEMI by age group, Malaysia 2006

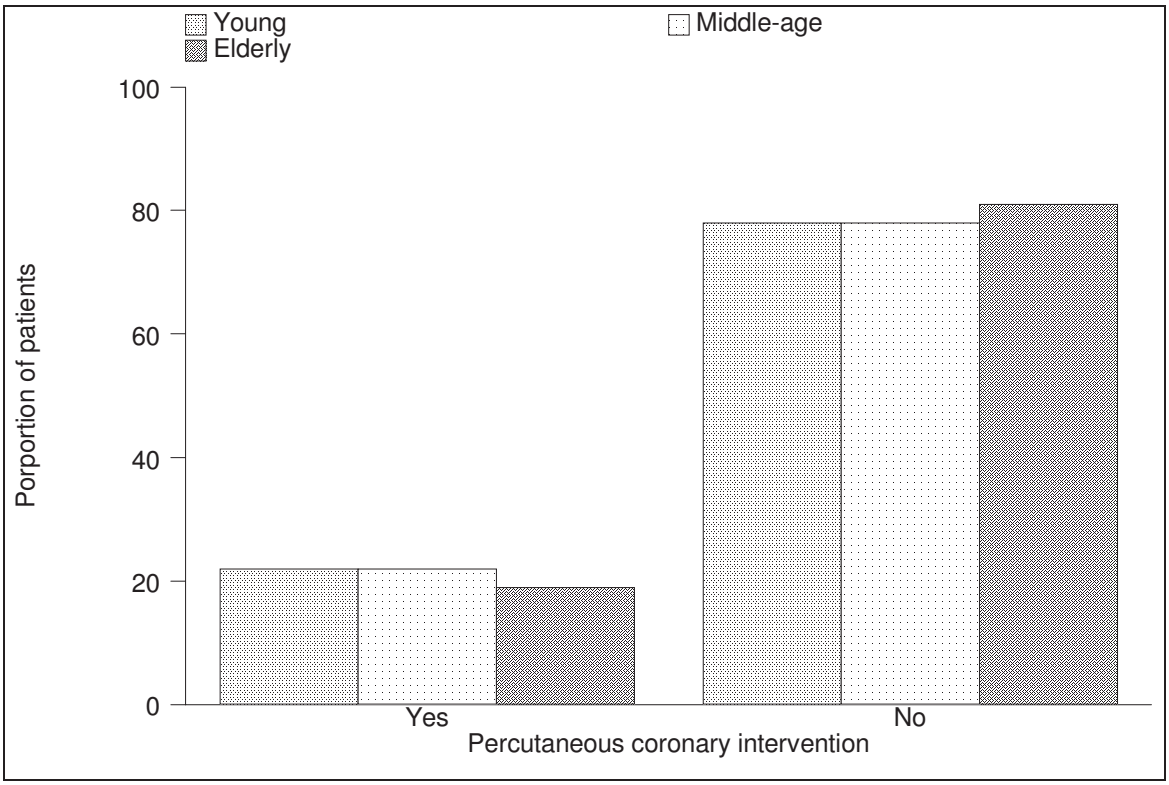


Figure 4.2.1d CABG for patients with STEMI by age group, Malaysia 2006

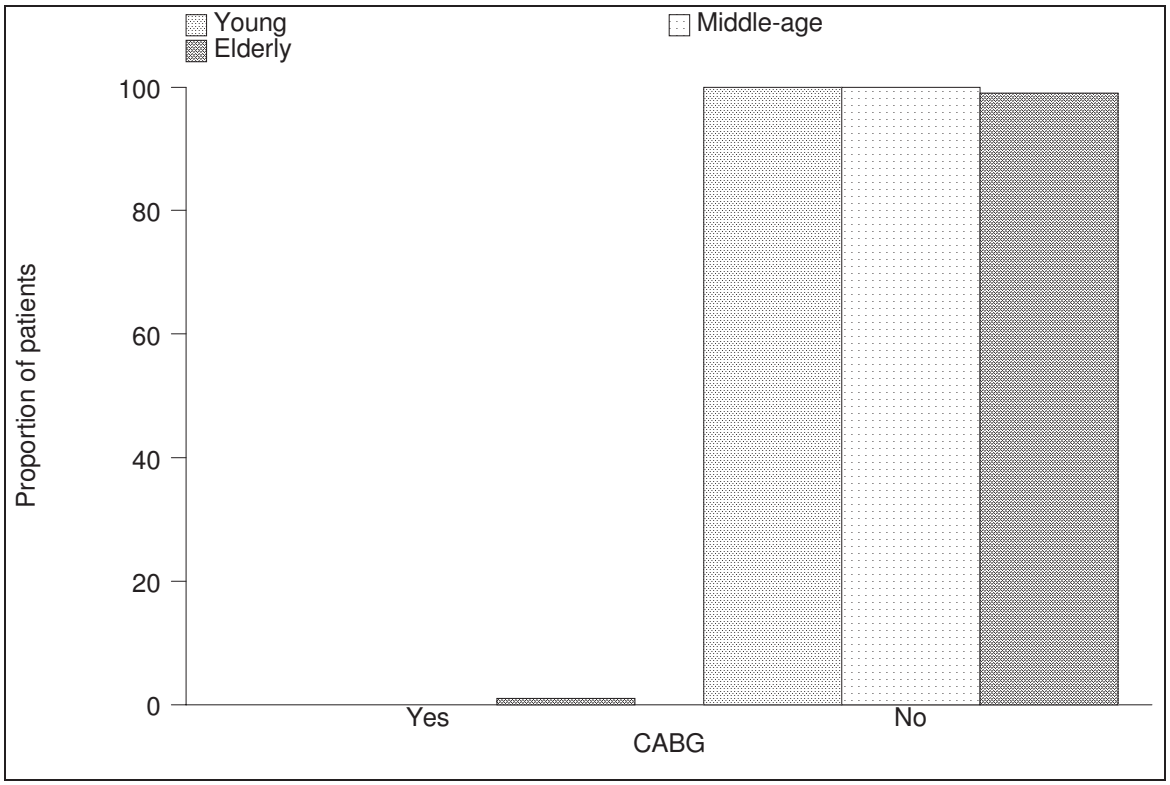


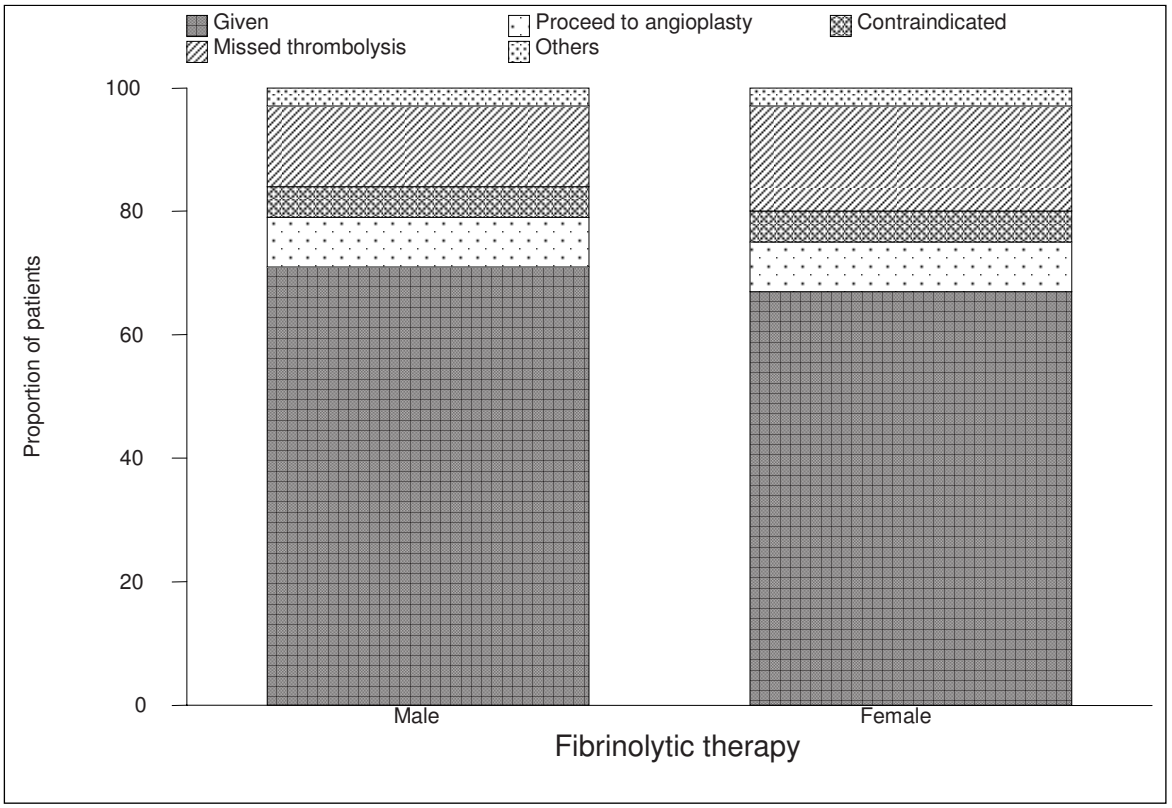
Table 4.2.2 Treatments for patients with STEMI by gender, Malaysia 2006

	Male N=1230	**Female N=215**
Total admission days*		
• N	1211	209
• Mean, SD	6 (3)	7 (4)
• Median, (min, max)	5 (1,28)	5 (1,28)
Number of days on CCU		
• N	936	157
• Mean, SD	3 (3)	4 (3)
• Median, (min, max)	3 (1,26)	3 (1,21)
Number of days on ICU/CICU		
• N	68	19
• Mean, SD	3 (3)	3 (2)
• Median, (min, max)	2 (1,17)	2 (1,7)
Fibrinolytic therapy, no. %		
• Given	875 (71)	143 (67)
• Not given–proceeded directly to primary angioplasty	99 (8)	18 (8)
• Not given-Contraindicated	59 (5)	11 (5)
• Not given-Missed thrombolysis	156 (13)	37 (17)
• Not given–Others**	41 (3)	6 (3)
Cardiac catheterization, no. %		
• Yes	266 (22)	32 (15)
• No	929 (76)	177 (82)
• No-Transferred to another centre	33 (3)	6 (3)
Percutaneous coronary intervention, no. %		
• Yes	273 (22)	35 (16)
• No	957 (78)	180 (84)
CABG, no. %		
• Yes	9 (1)	1 (0)
• No	1221 (99)	214 (100)
Pre-admission aspirin use, no. %		
• Yes	189 (15)	38 (18)
• No	824 (67)	141 (66)
• Unknown	217 (18)	36 (17)

	Male N=1230	Female N=215
Pharmacological therapy given during admission, no. %		
• ASA	1164 (95)	204 (95)
• ADP antagonist	726 (59)	142 (66)
• GP receptor inhibitor	65 (5)	12 (6)
• Unfractionated heparin	156 (13)	25 (12)
• LMWH	371 (30)	75 (35)
• Beta blocker	812 (66)	139 (65)
• ACE inhibitor	759 (62)	106 (49)
• Angiotensin II receptor blocker	56 (5)	10 (5)
• Statin	1136 (92)	197 (92)
• Other lipid lowering agent	45 (4)	9 (4)
• Diuretics	316 (26)	77 (36)
• Calcium antagonist	79 (6)	15 (7)
• Oral hypoglycaemic agent	307 (25)	66 (31)
• Insulin	290 (24)	89 (41)
• Anti-arrhythmic agent	112 (9)	23 (11)

**Total admission days is derived as Outcome date – Admission date + 1*
***Not given–Others includes missing and refusal*
Note: Percentage is to the nearest decimal point.

Figure 4.2.2a Fibrinolytic therapy for patients with STEMI by gender, Malaysia 2006



*1. Given, 2. Not given–proceeded directly to primary angioplasty, 3. Not given-Contraindicated, 4. Not given–Missed thrombolysis, 5. Not given–Others***

*** Others includes patients who refused the fibrinolytic therapy and missing*

Note: Percentage is to the nearest decimal point.

Figure 4.2.2b Cardiac catheterization for patients with STEMI by gender, Malaysia 2006

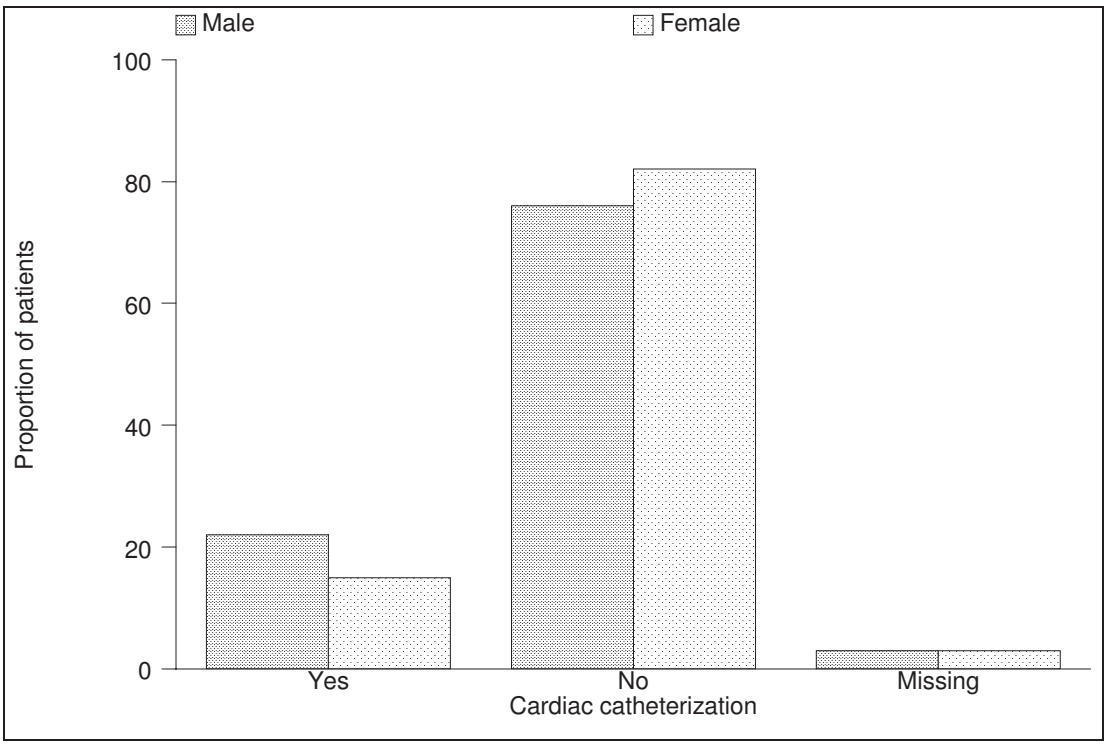


Figure 4.2.2c Percutaneous coronary intervention for patients with STEMI by gender, Malaysia 2006

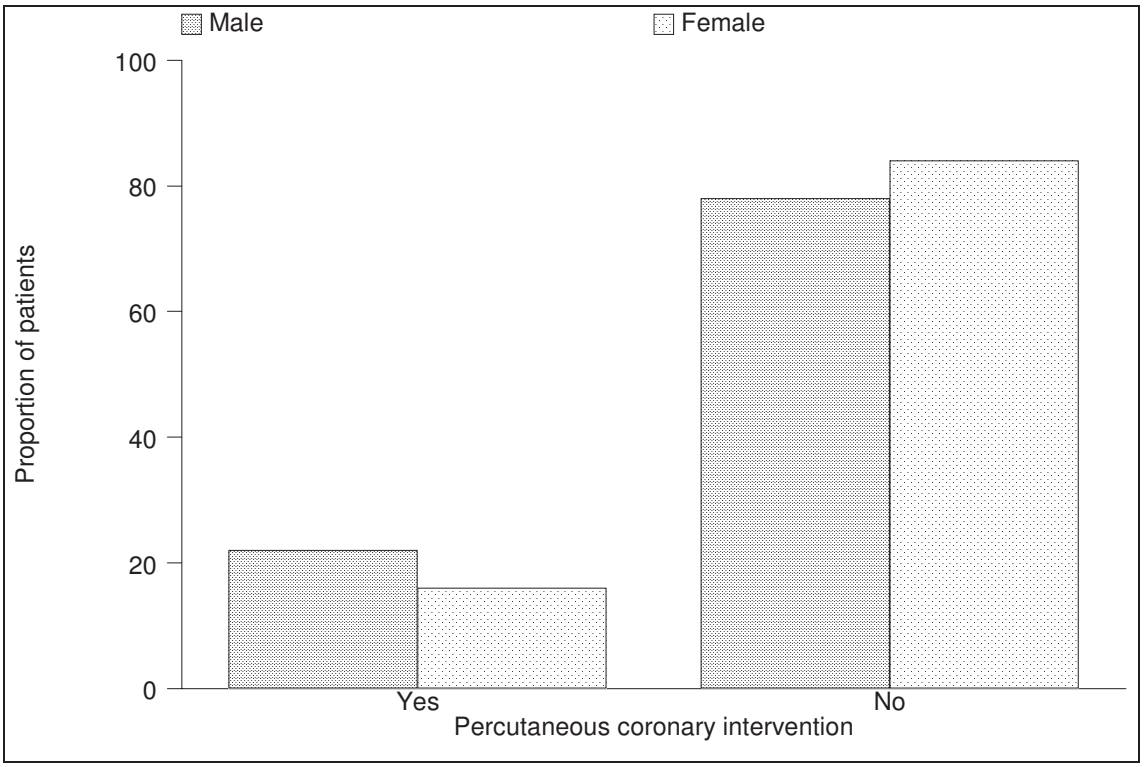


Figure 4.2.2d CABG for patients with STEMI by gender, Malaysia 2006

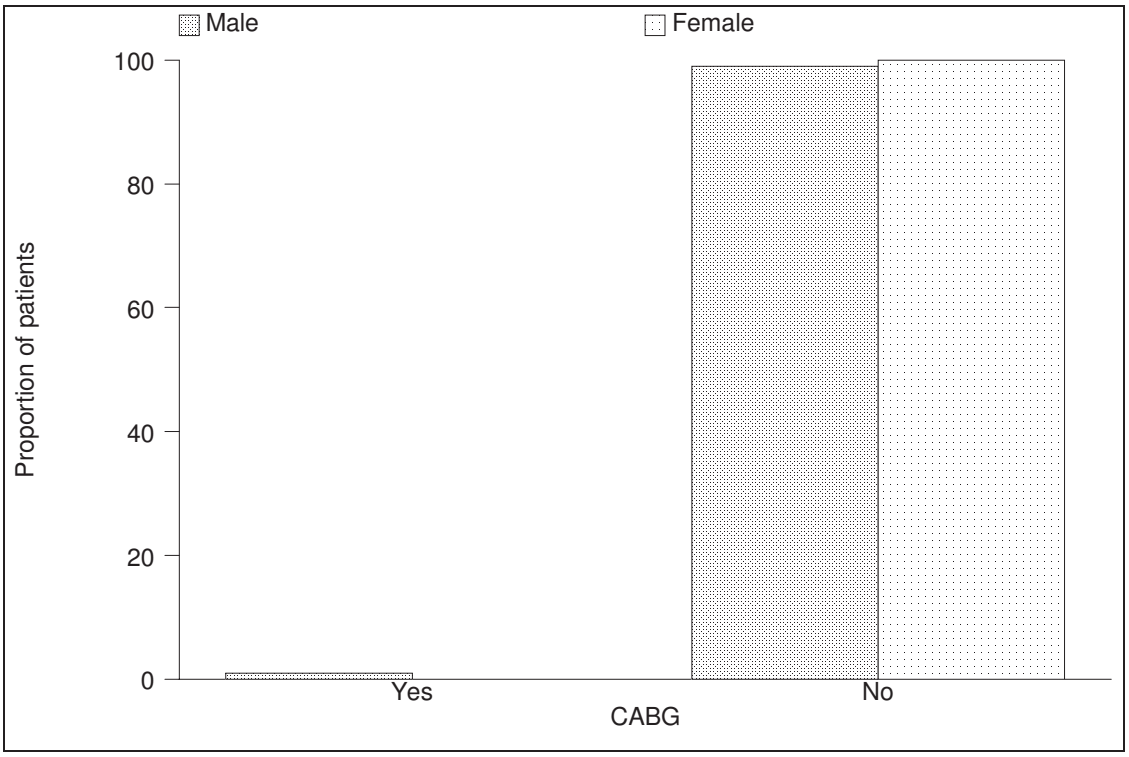


Table 4.2.3 Treatments for patients with STEMI by ethnic group, Malaysia 2006

	Malay N=780	**Chinese N=301**	**Indian N=286**	**Others* N=78**
Total admission days**				
• N	764	294	284	78
• Mean, SD	6 (3)	6 (3)	6 (4)	5 (3)
• Median, (min, max)	5 (1,28)	5 (1,28)	5 (1,27)	5 (1,25)
Number of days on CCU				
• N	614	225	187	67
• Mean, SD	4 (2)	3 (2)	4 (3)	3 (2)
• Median, (min, max)	3 (1,21)	3 (1,15)	3 (1,26)	3 (1,10)
Number of days on ICU/CICU				
• N	43	23	3	18
• Mean, SD	4 (4)	2 (2)	2 (1)	2 (1)
• Median, (min, max)	2 (1,17)	2 (1,8)	2 (1,2)	2 (1,4)
Fibrinolytic therapy, no. %				
• Given	567 (73)	206 (68)	188 (66)	57 (73)
• Not given–proceeded directly to primary angioplasty	52 (7)	24 (8)	36 (13)	5 (6)
• Not given-Contraindicated	39 (5)	14 (5)	11 (4)	6 (8)
• Not given-Missed thrombolysis	99 (13)	43 (14)	42 (15)	9 (12)
• Not given– Others***	23 (3)	14 (5)	9 (3)	1 (1)
Cardiac catheterization, no. %				
• Yes	141 (18)	64 (21)	75 (26)	18 (23)
• No	617 (79)	231 (77)	203 (71)	55 (71)
• No-Transferred to another centre	20 (3)	6 (2)	8 (3)	5 (6)
Percutaneous coronary intervention, no. %				
• Yes	143 (18)	66 (22)	83 (29)	16 (21)
• No	637 (82)	235 (78)	203 (71)	62 (79)
CABG, no. %				
• Yes	8 (1)	2 (1)	0 (0)	0 (0)
• No	772 (99)	299 (99)	286 (100)	78 (100)
Pre-admission aspirin use, no. %				
• Yes	112 (14)	44 (15)	66 (23)	5 (6)
• No	554 (71)	197 (65)	164 (57)	50 (64)
• Unknown	114 (15)	60 (20)	56 (20)	23 (29)

	Malay N=780	Chinese N=301	Indian N=286	Others* N=78
Pharmacological therapy given during admission, no. %				
• ASA	731 (94)	293 (97)	271 (95)	73 (94)
• ADP antagonist	441 (57)	194 (64)	183 (64)	50 (64)
• GP receptor inhibitor	44 (6)	10 (3)	19 (7)	4 (5)
• Unfrac heparin	120 (15)	21 (7)	38 (13)	2 (3)
• LMWH	218 (28)	96 (32)	104 (36)	28 (36)
• Beta blocker	504 (65)	209 (69)	193 (67)	45 (58)
• ACE inhibitor	478 (61)	165 (55)	184 (64)	38 (49)
• Angiotensin II receptor blocker	30 (4)	14 (5)	18 (6)	4 (5)
• Statin	714 (92)	281 (93)	265 (93)	73 (94)
• Other lipid lowering agent	31 (4)	10 (3)	11 (4)	2 (3)
• Diuretics	234 (30)	64 (21)	80 (28)	15 (19)
• Calcium antagonist	55 (7)	10 (3)	21 (7)	8 (10)
• Oral hypoglycaemic agent	178 (23)	69 (23)	116 (41)	10 (13)
• Insulin	184 (24)	73 (24)	107 (37)	15 (19)
• Anti-arrhythmic agent	65 (8)	37 (12)	25 (9)	8 (10)

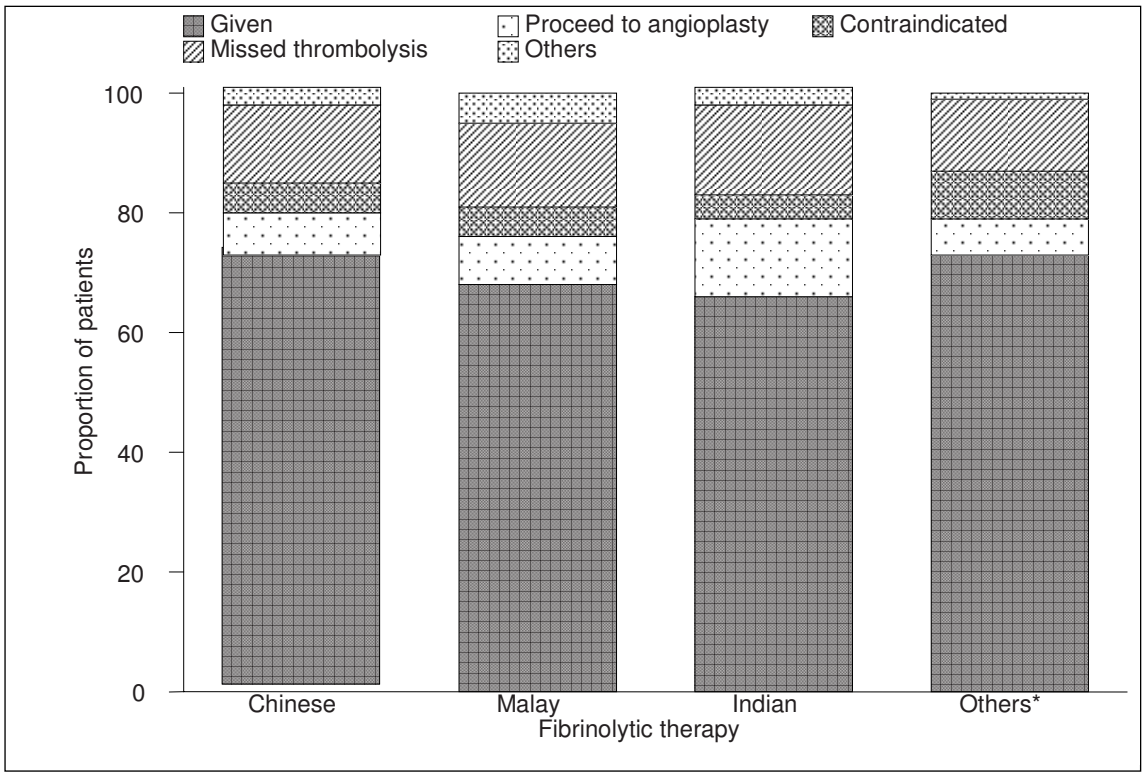
**Others includes Orang asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and foreigner*

***Total admission days is derived as Outcome date – Admission date + 1*

****Not given–Others includes missing and refusal*

Note: Percentage is to the nearest decimal point.

Figure 4.2.3a Fibrinolytic therapy for patients with STEMI by ethnic group, Malaysia 2006



*1. Given, 2. Not given–proceeded directly to primary angioplasty, 3. Not given-Contraindicated, 4. Not given–Missed thrombolysis, 5. Not given–Others***

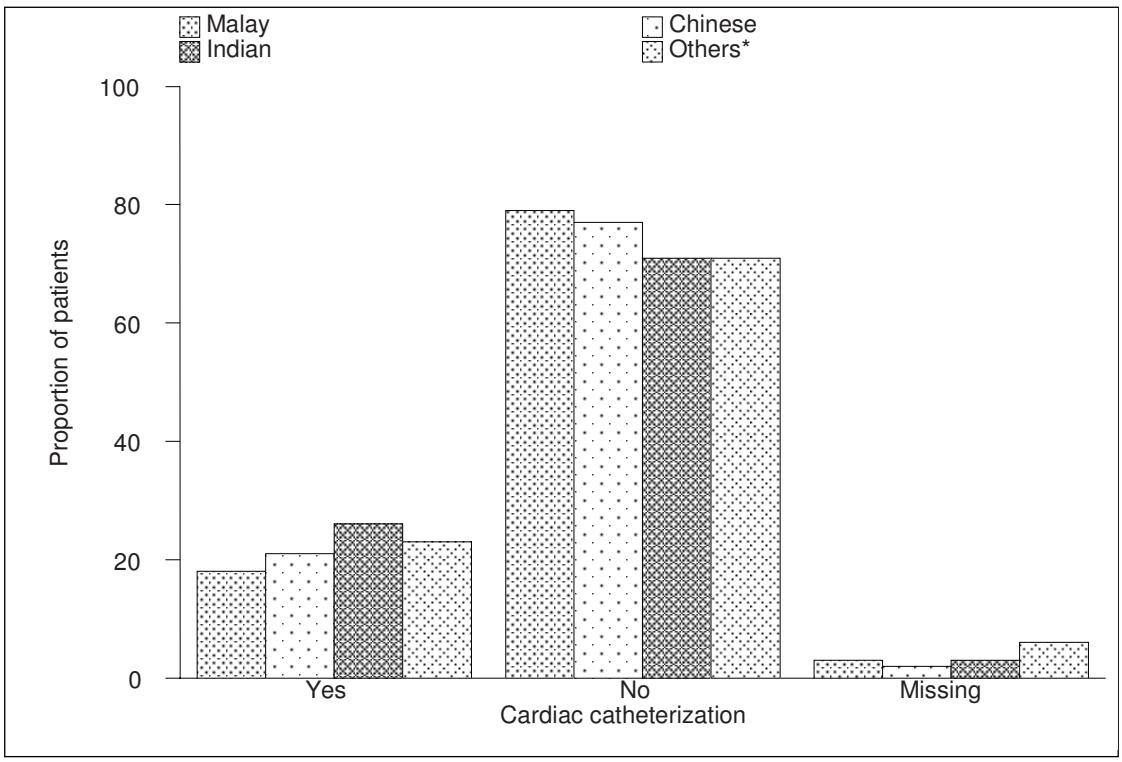
** *Others include Orang asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and foreigner*

Note:

1. Percentage is to the nearest decimal point.

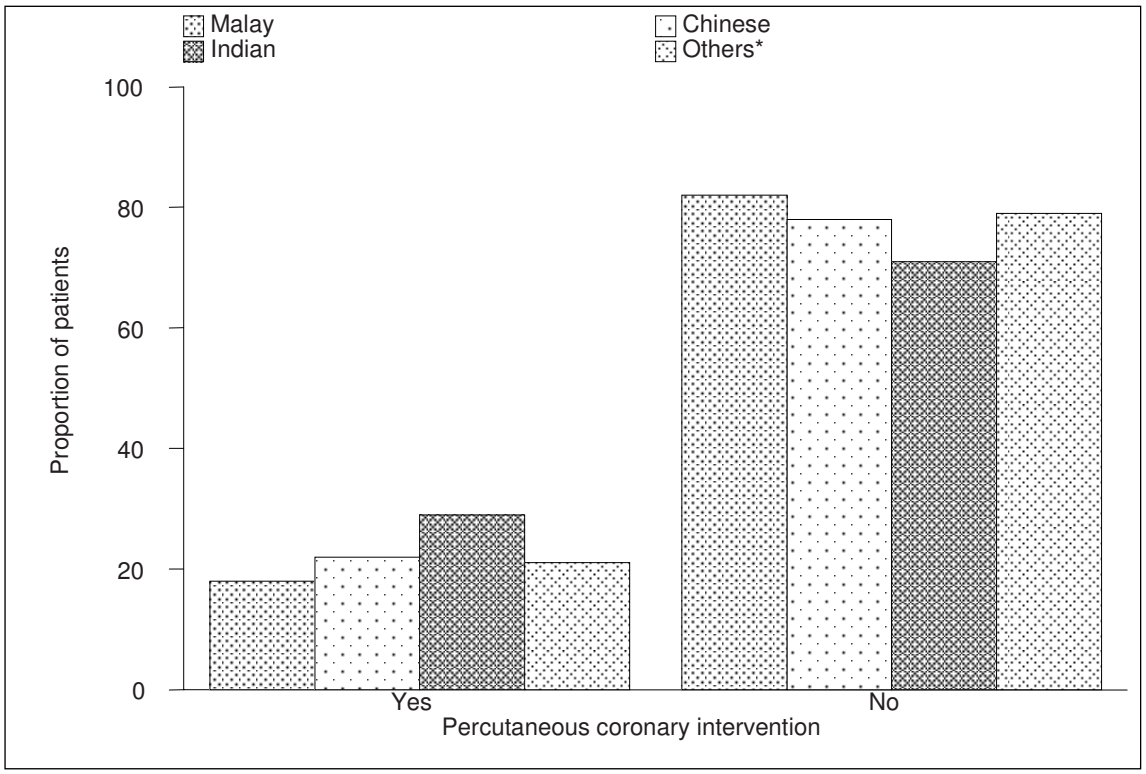
2. Others includes patients who refused the fibrinolytic therapy and missing

Figure 4.2.3b Cardiac catheterization for patients with STEMI by ethnic group, Malaysia 2006



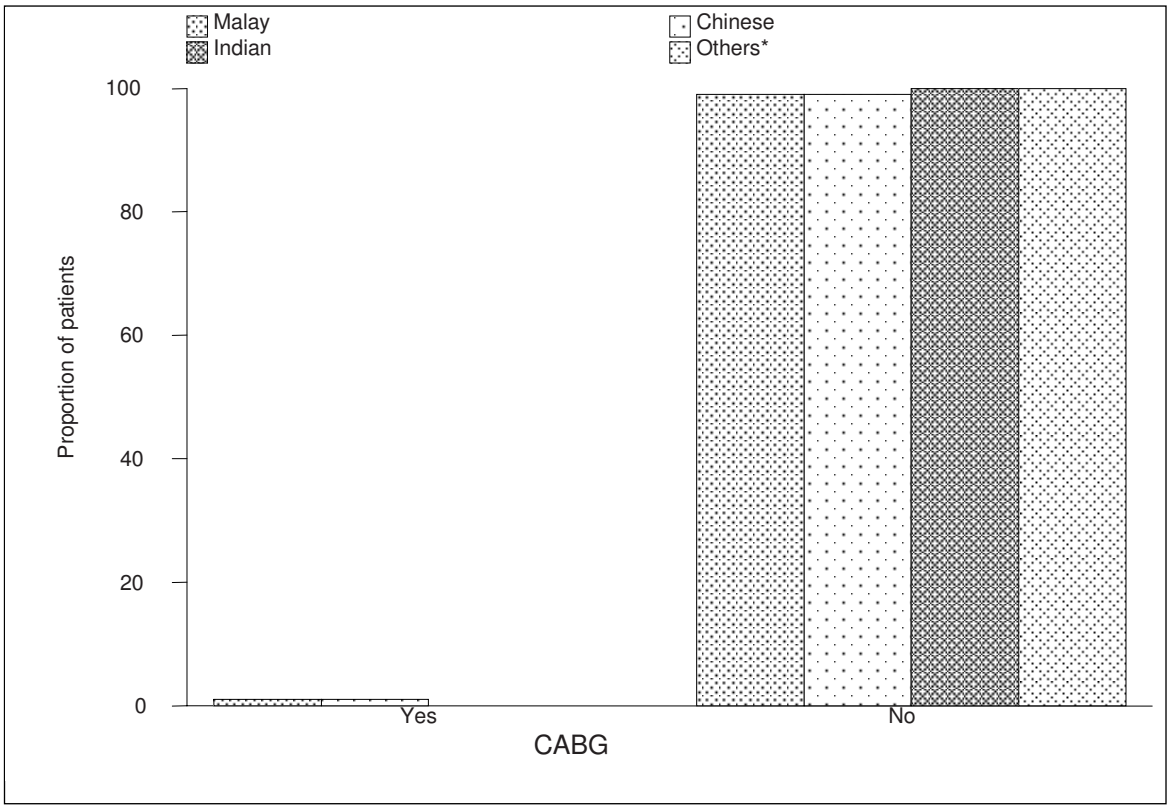
** Others includes Orang asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and foreigner*

Figure 4.2.3c Percutaneous coronary intervention for patients with STEMI by ethnic group, Malaysia 2006



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

Figure 4.2.3d CABG on admission for patients with STEMI by ethnic group, Malaysia 2006



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

Table 4.3.1 Treatments for patients with NSTEMI/UA by age group (years), Malaysia 2006

	Age group*		
	Young N=53	**Middle-age N=872**	**Elderly N=1052**
Total admission days**			
• N	53	856	1025
• Mean, SD	5 (2)	5 (3)	6 (4)
• Median, (min, max)	4 (2,15)	4 (1,27)	5 (1,30)
Number of days on CCU			
• N	14	246	330
• Mean, SD	2 (1)	3 (3)	3 (3)
• Median, (min, max)	2 (1,5)	3 (1,20)	3 (1,24)
Number of days on ICU/CICU			
• N	1	62	74
• Mean, SD	1 (.)	4 (3)	4 (3)
• Median, (min, max)	1 (1,1)	3 (1,12)	3 (1,23)
Cardiac catheterization, no. %			
• Yes	11 (21)	164 (19)	182 (17)
• No	42 (79)	695 (80)	848 (81)
• No-Transferred to another centre	0 (0)	13 (1)	22 (2)
Percutaneous coronary intervention, no. %			
• Yes	10 (19)	120 (14)	112 (11)
• No	43 (81)	752 (86)	940 (89)
CABG, no. %			
• Yes	0 (0)	25 (3)	32 (3)
• No	53 (100)	847 (97)	1020 (97)
Pre-admission aspirin use			
• Yes	13 (25)	341 (39)	483 (46)
• No	25 (47)	343 (39)	357 (34)
• Unknown	15 (28)	188 (22)	212 (20)

	Age group*		
	Young N=53	**Middle-age N=872**	**Elderly N=1052**
Pharmacological therapy given during admission, no. %			
• ASA	50 (94)	801 (92)	932 (89)
• ADP antagonist	28 (53)	493 (57)	620 (59)
• GP receptor inhibitor	0 (0)	27 (3)	39 (4)
• Unfractionated heparin	14 (26)	200 (23)	186 (18)
• LMWH	28 (53)	566 (65)	710 (67)
• Beta blocker	34 (64)	613 (70)	677 (64)
• ACE inhibitor	26 (49)	503 (58)	578 (55)
• Angiotensin II receptor blocker	4 (8)	75 (9)	122 (12)
• Statin	48 (91)	804 (92)	939 (89)
• Other lipid lowering agent	4 (8)	64 (7)	65 (6)
• Diuretics	14 (26)	249 (29)	442 (42)
• Calcium antagonist	9 (17)	156 (18)	283 (27)
• Oral hypoglycaemic agent	8 (15)	262 (30)	330 (31)
• Insulin	12 (23)	218 (25)	273 (26)
• Anti-arrhythmic agent	3 (6)	45 (5)	73 (7)

**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.*
***Total admission days is derived as Outcome date – Admission date + 1*
Note: Percentage is to the nearest decimal point.

Figure 4.3.1a Cardiac catheterization for patients with NSTEMI/UA by age group (years), Malaysia 2006

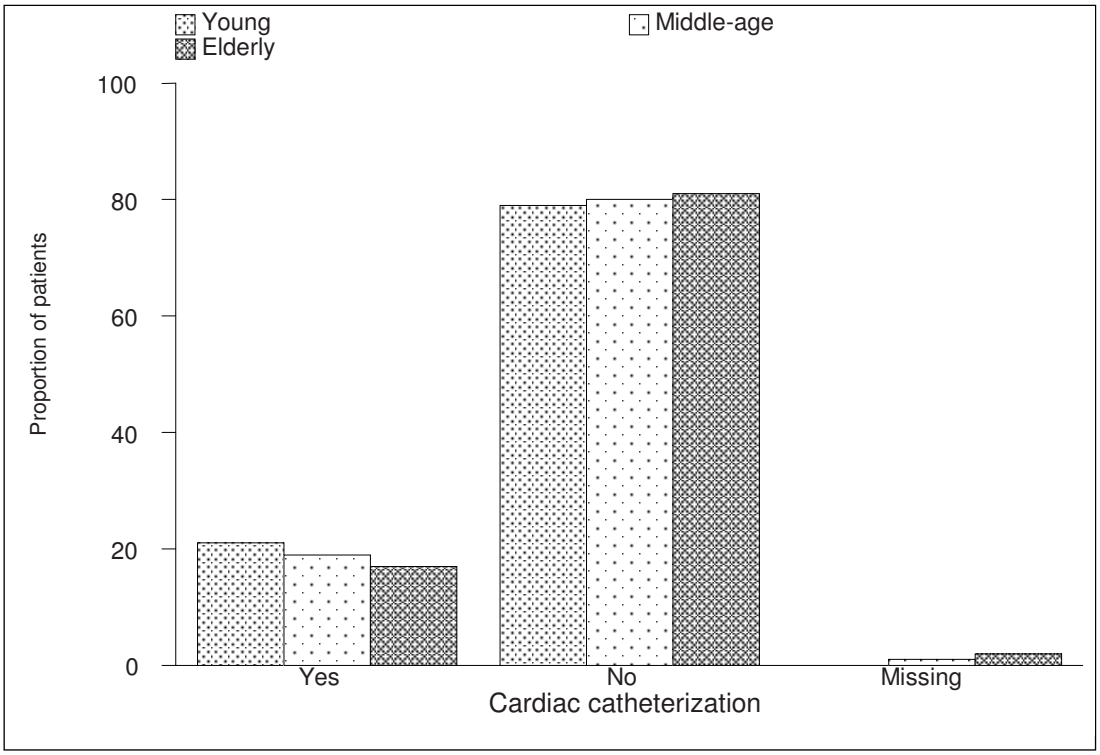


Figure 4.3.1b Percutaneous coronary intervention for patients with NSTEMI/UA by age group (years), Malaysia 2006

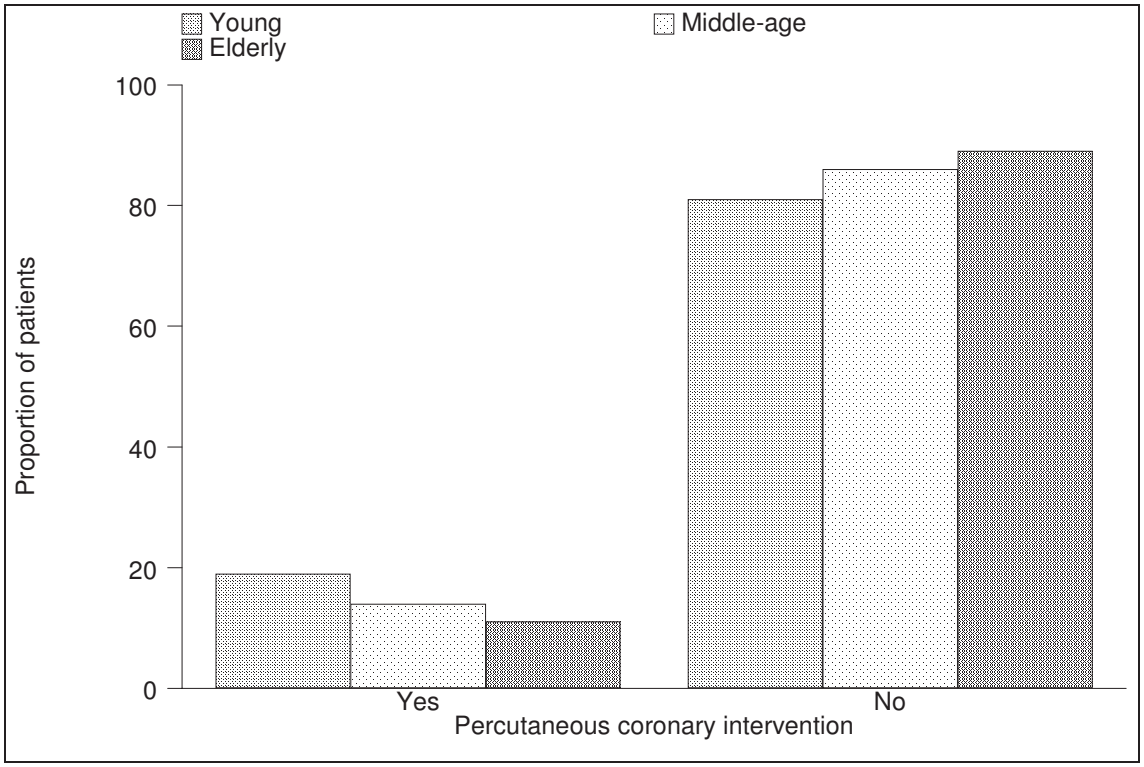


Figure 4.3.1c CABG for patients with NSTEMI/UA by age group (years), Malaysia 2006

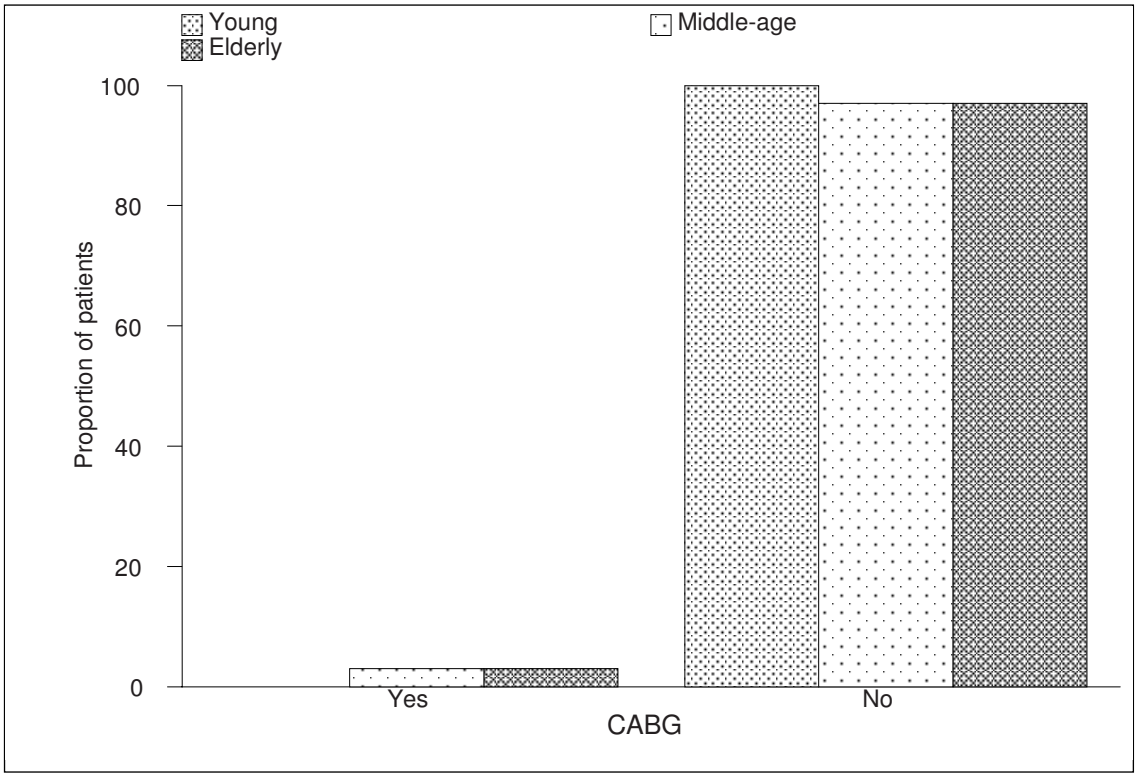


Table 4.3.2 Treatments for patients with NSTEMI/UA by gender, Malaysia 2006

	Male N=1339	**Female N=638**
Total admission day*		
• N	1315	619
• Mean, SD	6 (4)	6 (4)
• Median, (min, max)	4 (1,29)	5 (1,30)
Number of days on CCU		
• N	425	165
• Mean, SD	3 (3)	4 (3)
• Median, (min, max)	3 (1,24)	3 (1,19)
Number of days on ICU/CICU		
• N	96	41
• Mean, SD	3 (2)	5 (4)
• Median, (min, max)	3 (1,11)	4 (1,23)
Cardiac catheterization, no. %		
• Yes	264 (20)	93 (15)
• No	1056 (79)	529 (83)
• No-Transferred to another centre	19 (1)	16 (3)
Percutaneous coronary intervention, no. %		
• Yes	182 (14)	60 (9)
• No	1157 (86)	578 (91)
CABG, no. %		
• Yes	42 (3)	15 (2)
• No	1297 (97)	623 (98)
Pre-admission aspirin use		
• Yes	570 (43)	267 (42)
• No	471 (35)	254 (40)
• Unknown	298 (22)	117 (18)

	Male N=1339	Female N=638
Pharmacological therapy given during admission, no. %		
• ASA	1224 (91)	559 (88)
• ADP antagonist	813 (61)	328 (51)
• GP receptor inhibitor	50 (4)	16 (3)
• Unfractionated heparin	283 (21)	117 (18)
• LMWH	878 (66)	426 (67)
• Beta blocker	902 (67)	422 (66)
• ACE inhibitor	772 (58)	335 (53)
• Angiotensin II receptor blocker	119 (9)	82 (13)
• Statin	1225 (91)	566 (89)
• Other lipid lowering agent	82 (6)	51 (8)
• Diuretics	453 (34)	252 (39)
• Calcium antagonist	263 (20)	185 (29)
• Oral hypoglycaemic agent	381 (28)	219 (34)
• Insulin	319 (24)	184 (29)
• Anti-arrhythmic agent	85 (6)	36 (6)

**Total admission days is derived as Outcome date – Admission date + 1*
Note: Percentage is to the nearest decimal point.

Figure 4.3.2a Cardiac catheterization for patients with NSTEMI/UA by gender, Malaysia 2006

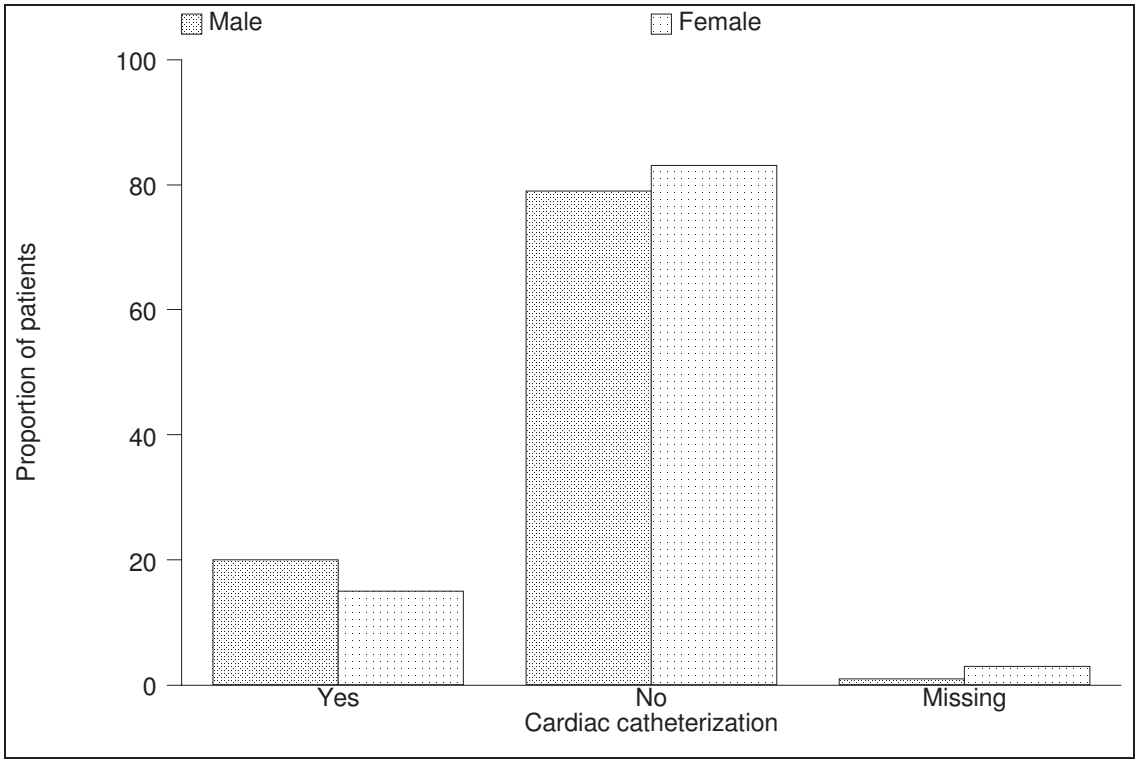


Figure 4.3.2b Percutaneous coronary intervention for patients with NSTEMI/UA by gender, Malaysia 2006

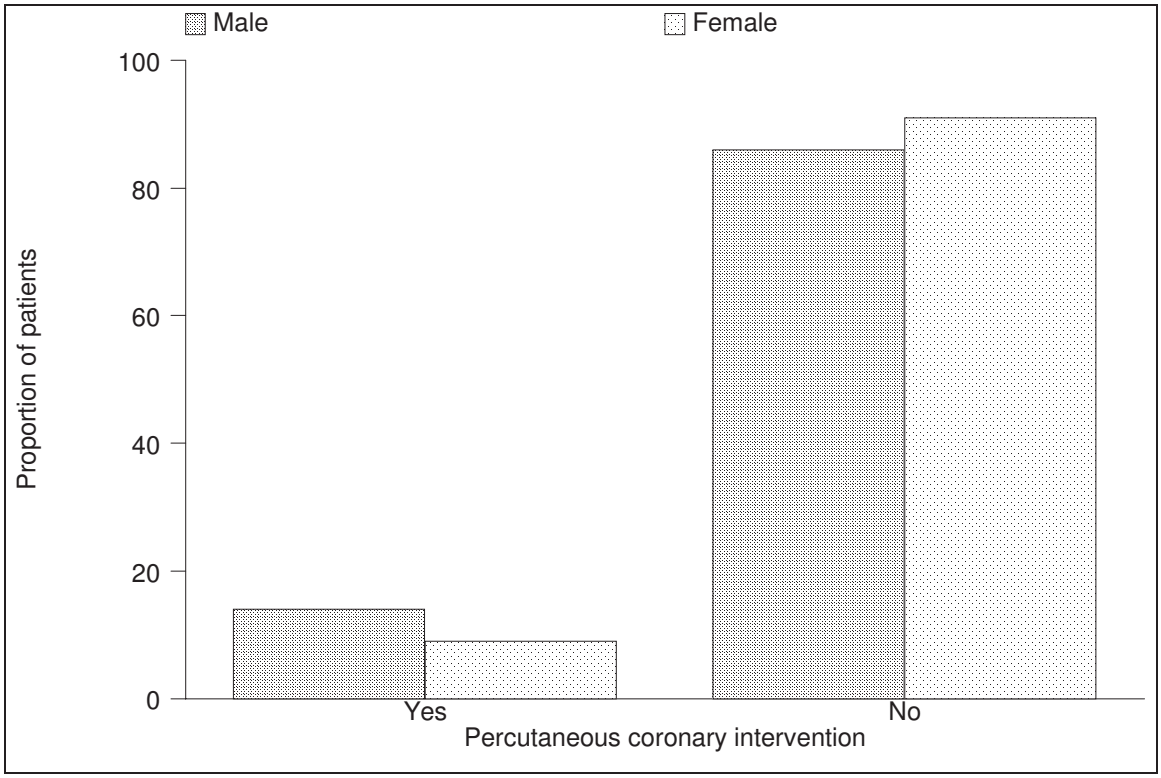


Figure 4.3.2c CABG for patients with NSTEMI/UA by gender, Malaysia 2006

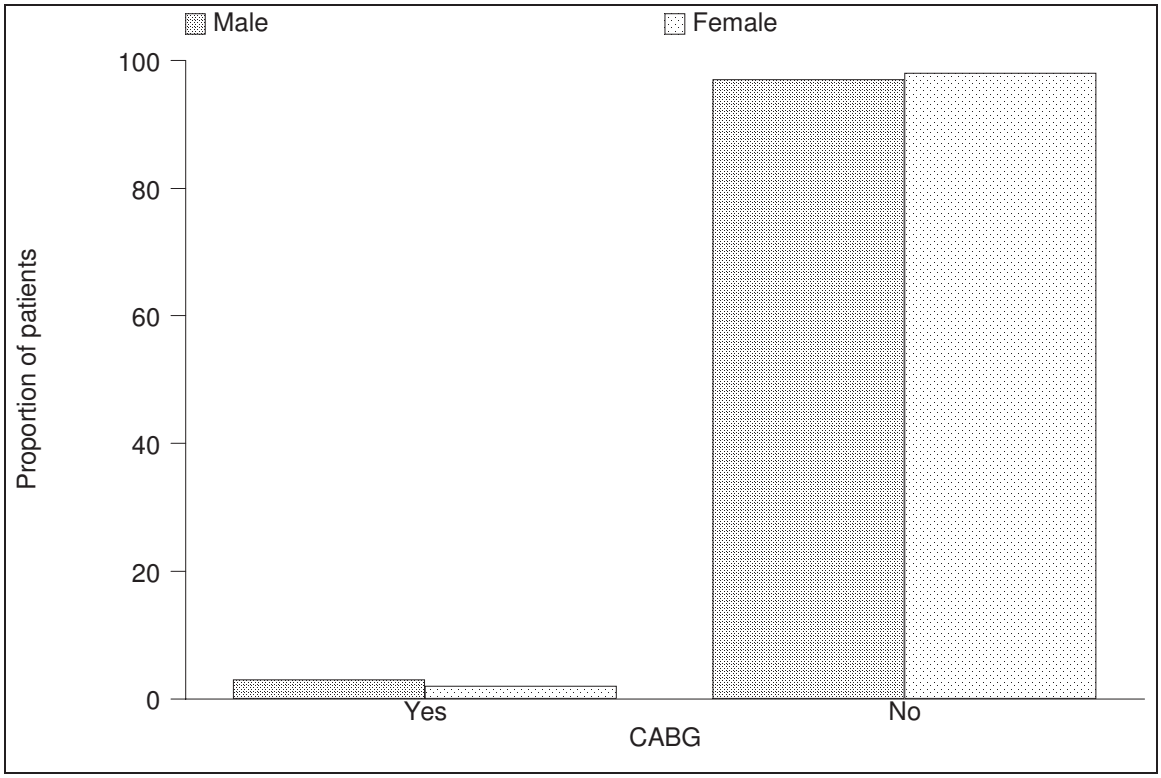


Table 4.3.3 Treatments for patients with NSTEMI/UA by ethnic group, Malaysia 2006

	Malay N=904	**Chinese N=485**	**Indian N=513**	**Others* N=75**
Total admission days**				
• N	879	477	506	72
• Mean, SD	6 (4)	6 (4)	6 (4)	5 (3)
• Median, (min, max)	5 (1,26)	4 (1,30)	5 (1,30)	4 (2,18)
Number of days on CCU				
• N	278	156	115	41
• Mean, SD	4 (3)	3 (2)	4 (3)	3 (2)
• Median, (min, max)	3 (1,24)	2 (1,17)	3 (1,14)	3 (1,9)
Number of days on ICU/CICU				
• N	59	43	17	18
• Mean, SD	4 (3)	3 (3)	4 (3)	3 (3)
• Median, (min, max)	3 (1,23)	3 (1,11)	3 (1,12)	2 (1,10)
Cardiac catheterization, no. %				
• Yes	156 (17)	83 (17)	103 (20)	15 (20)
• No	731 (81)	392 (81)	402 (78)	60 (80)
• No-Transferred to another centre	17 (2)	10 (2)	8 (2)	0 (0)
Percutaneous coronary intervention, no. %				
• Yes	100 (11)	62 (13)	70 (14)	10 (13)
• No	804 (89)	423 (87)	443 (86)	65 (87)
CABG, no. %				
• Yes	29 (3)	16 (3)	11 (2)	1 (1)
• No	875 (97)	469 (97)	502 (98)	74 (99)
Pre-admission aspirin use				
• Yes	401 (44)	183 (38)	233 (45)	20 (27)
• No	335 (37)	194 (40)	155 (30)	41 (55)
• Unknown	168 (19)	108 (22)	125 (24)	14 (19)

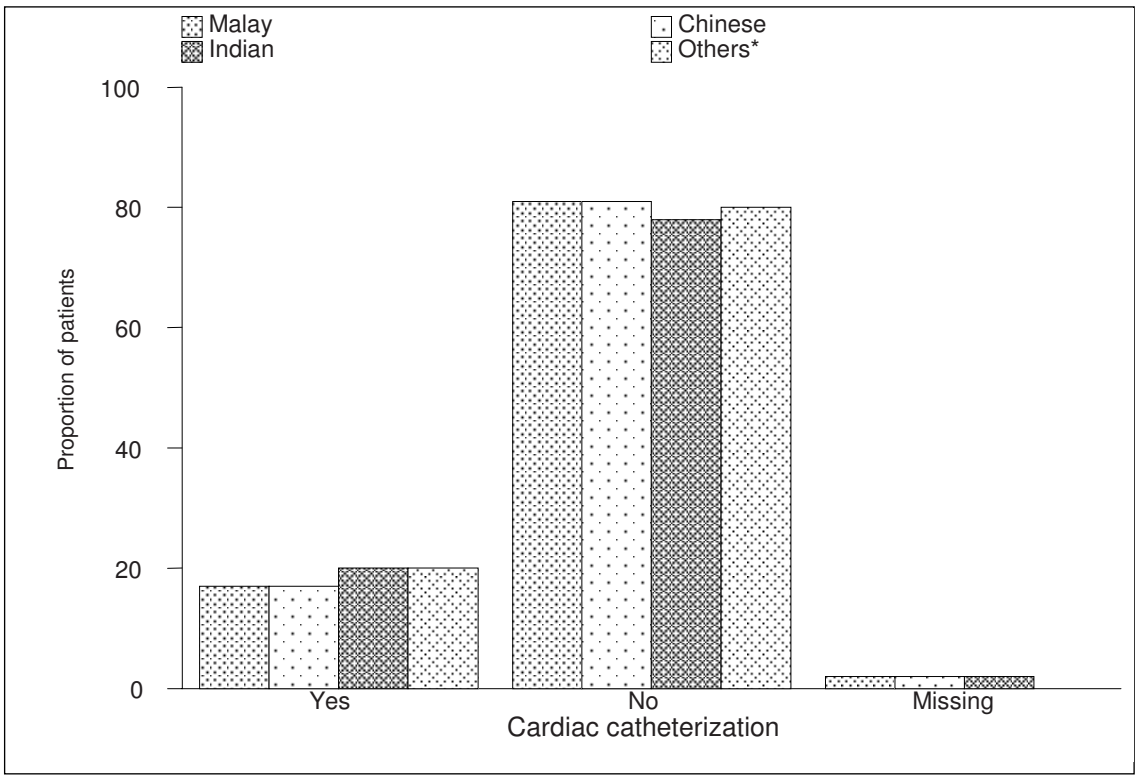
	Malay N=904	Chinese N=485	Indian N=513	Others* N=75
Pharmacological therapy given during admission, no. %				
• ASA	814 (90)	440 (91)	462 (90)	67 (89)
• ADP antagonist	461 (51)	299 (62)	335 (65)	46 (61)
• GP receptor inhibitor	27 (3)	20 (4)	15 (3)	4 (5)
• Unfractionated heparin	284 (31)	47 (10)	64 (12)	5 (7)
• LMWH	495 (55)	369 (76)	390 (76)	50 (67)
• Beta blocker	575 (64)	353 (73)	350 (68)	46 (61)
• ACE inhibitor	510 (56)	259 (53)	303 (59)	35 (47)
• Angiotensin II receptor blocker	82 (9)	49 (10)	63 (12)	7 (9)
• Statin	798 (88)	443 (91)	480 (94)	70 (93)
• Other lipid lowering agent	55 (6)	40 (8)	34 (7)	4 (5)
• Diuretics	330 (37)	172 (35)	181 (35)	22 (29)
• Calcium antagonist	190 (21)	104 (21)	135 (26)	19 (25)
• Oral hypoglycaemic agent	227 (25)	140 (29)	218 (42)	15 (20)
• Insulin	195 (22)	107 (22)	188 (37)	13 (17)
• Anti-arrhythmic agent	60 (7)	34 (7)	22 (4)	5 (7)

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

*** Total admission days is derived as Outcome date – Admission date + 1*

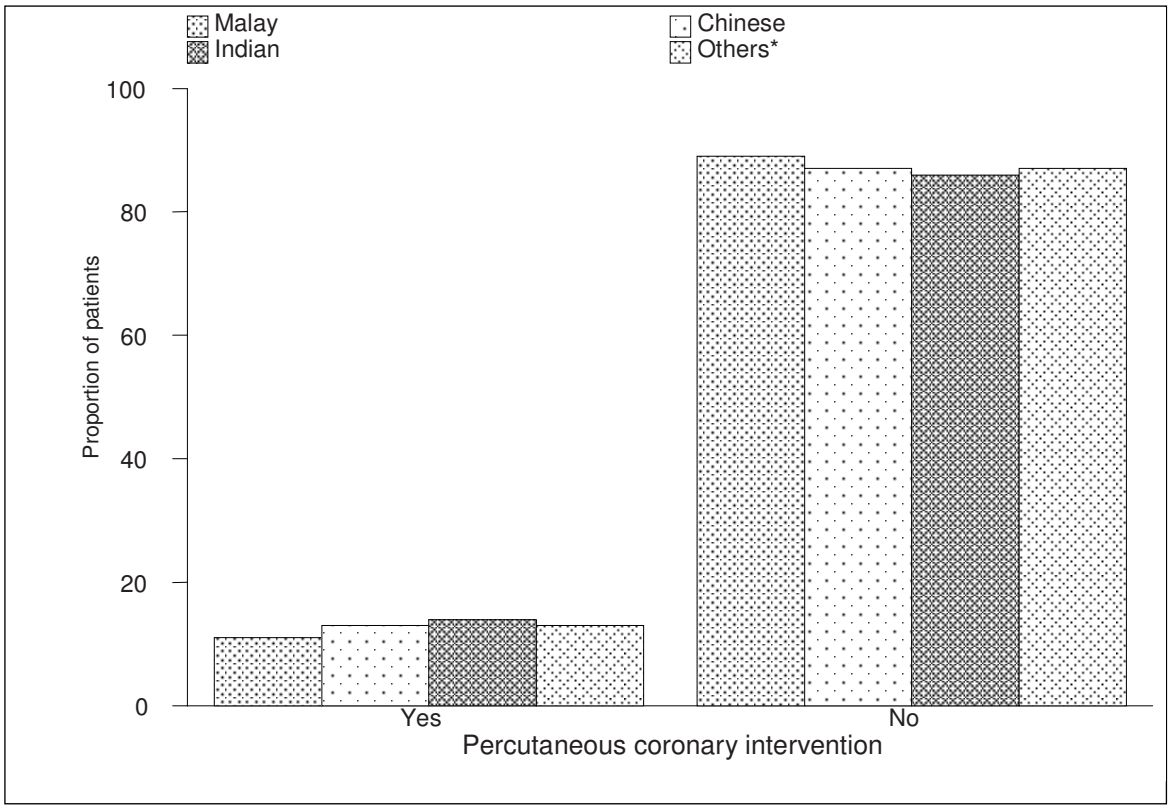
Note: Percentage is to the nearest decimal point.

Figure 4.3.3a Cardiac catheterization for patients with NSTEMI/UA by ethnic group, Malaysia 2006



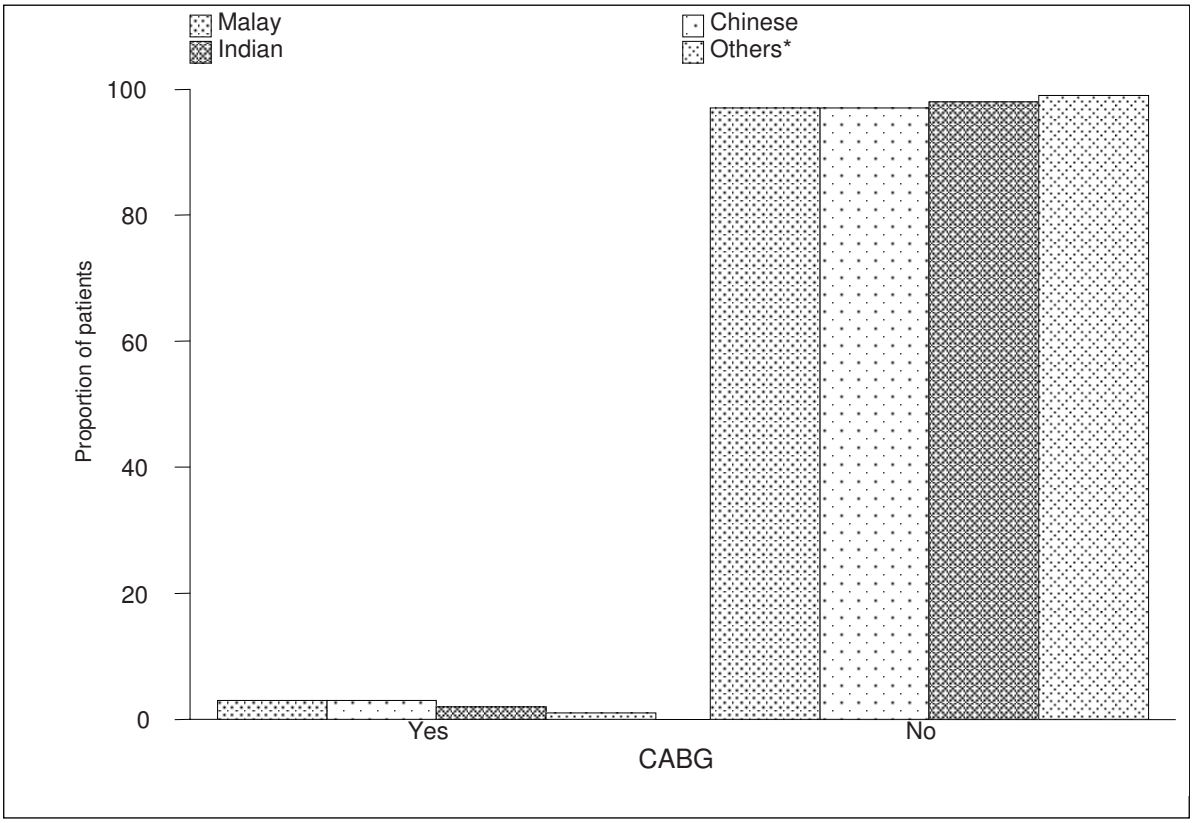
** Others includes Orang asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and foreigner*

Figure 4.3.3b Pecutaneous coronary intervention for patients with NSTEMI/UA by ethnic group, Malaysia 2006



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

Figure 4.3.3c CABG for patients with NSTEMI/UA by ethnic group, Malaysia 2006



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