CHAPTER 2 :
PATIENT CHARACTERISTICS

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Pusat Jantung Hospital Umum Sarawak

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Summary

1. The STEMI subgroup of ACS appears to be on the rise, with a corresponding drop in NSTEMI.

2. ACS patients are younger than non-Asian counterparts in the GRACE Registry, in particular among the STEMI subgroup.

3. The prevalence of coronary risk factors amongst patients presenting with ACS was similar between the years.

This chapter details the patient characteristics of patients admitted with acute coronary syndrome (ACS) between 2006 and 2010. During this five year period, 16,872 patients were admitted to 17 tertiary hospitals in Malaysia.

Patient demographics

We noted that amongst Malaysian patients with ACS, the mean age was 59 years (SD 12), with 24% under the age of 50 years. We noted 76% of patients were male. Amongst males, 28% were under the age of 50 years, while amongst females, 12% were under the age of 50 years. [Table 2.1]

The patients were distributed amongst these three major ethnic groups: 49% Malay, 22% Chinese and 23% Indian. We noted that 29% amongst the Malays, 19% amongst the Chinese, 31% amongst the Indians, were male patients under the age of 50 years. We also noted that 12% amongst the Malays, 4% amongst the Chinese, 15% amongst the Indians, were female patients under the age of 50 years. [Table 2.1]

Coronary risk factors

Of patients with ACS, we noted 33% were active smokers, 22% were former smokers, while 39% never smoked. We noted that 33% were previously diagnosed with dyslipidaemia, 61% with hypertension, 43% with diabetes and 11% had a family history of premature coronary artery disease. [Table 2.1]

We noted 19% had a prior myocardial infarction; 17% had documented coronary artery disease > 50% stenosis; 11% had chronic stable angina, while 55% had new onset angina; 7% had a prior history of heart failure, 7% had prior renal disease; 4% had prior cerebrovascular disease and 1% peripheral vascular disease. We noted 75% of patients had an elevated BMI of >23 kg/m^2. Of these patients, 95% had at least one coronary risk factor when admitted with an ACS event. [Table 2.1]

ACS stratum: STEMI, NSTEMI and unstable angina

Between 2006 and 2010, 48% of patients presented with STEMI, 29% with NSTEMI and 22% with unstable angina. [Table 2.7]

The mean age of presentation for the different ACS presentations were as follows: 56 years (SD 12) for STEMI; 62 years (SD 12) for NSTEMI and 61 years (SD 12) for unstable angina. About 31% of STEMI presentations, 15% of NSTEMI and 18% of unstable angina were aged less than 50 years at presentation with ACS. Male patients accounted for 85% of STEMI, 70% for NSTEMI and 65% for unstable angina. Malay patients accounted for 55% of STEMI, 46% for NSTEMI and 42% for unstable angina. [Table 2.7]

Current smokers made up 47% of patients with STEMI, 23% with NSTEMI and 16% with unstable angina. For a known history of dyslipidaemia, 25% were found to have this in the STEMI group, 29% in the NSTEMI, and

44% in the unstable angina groups. For a known history of hypertension, the prevalence was 49% in the STEMI; 71% in the NSTEMI and 75% in the unstable angina groups. For diabetes, the prevalence was 37% in the STEMI, 50% in the NSTEMI and 48% in the unstable angina groups. [Table 2.1]

Discussion

Compared with the large, multicenter GRACE Registry[1] and other Western registries, patients in Malaysia were younger (mean age in GRACE for STEMI: 65 years; NSTEMI: 68 years; unstable angina 66 years) and had more males (prevalence of males in GRACE for STEMI: 70%; NSTEMI: 66%; unstable angina: 64%). Malaysian patients with ACS had more risk factors than patients in the GRACE Registry (GRACE hypertension prevalence were 52% for STEMI, 62% for NSTEMI and 66% for unstable angina; GRACE dyslipidaemia prevalence was 38% in STEMI, 47% for NSTEMI and 54% for unstable angina; GRACE diabetes prevalence was 21% for STEMI, 28% for NSTEMI and 26% for unstable angina). However, for GRACE, prevalence of smoking was found to be higher compared to the Malaysian data: 62% for STEMI; 57% of NSTEMI and 55% for unstable angina. [Table 2.7]

A recent publication in the Southeast Asian region encompassing a similarly diverse ethic distribution demonstrated a similar pattern to ours: that these patients were younger and had relatively more of the male gender.[2]

The reasons for the above could be attributed to the fast rising prevalence of established coronary risk factors, such as hypertension, dyslipidaemia and diabetes.[3,4] In addition, other coronary risk factors such as psychosocial stress and change in dietary habits due to rural to urban environments could play a substantial contributory role to these phenomena.

References

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2. Chan MY, Shah BR, Gao F, et al. Recalibration of the Global Registry of Acute Coronary Events risk score in a multiethnic Asian population. Am Heart J. 2011 Aug;162(2):291-9.

3. Institute for Public Health, Ministry of Health Malaysia. The Third National Health and Morbidity Survey (NHMS III) 2006. Kuala Lumpur: Institute for Public Health, Ministry of Health Malaysia, 2008.

4. Selvarajah S, Haniff J, Kaur G, et al (for the NHMS III Cohort study group). Clustering of cardiovascular risk factors in a middle-income country: a call for urgency. Eur J Prev Cardiol. 2013 Apr;20(2):368-75.

Table 2.1 Summary of characteristics for patients with ACS, NCVD-ACS Registry, 2006-2010

Year	2006-2008	2009	2010	2006-2010
Total	**9871**	**3594**	**3401**	**16866**
DEMOGRAPHICS				
Age, years				
N	9871	3594	3401	16866
Mean (SD)	59 (12)	59 (12)	59 (12)	59 (12)
Median (min, max)	59 (21, 100)	59 (22, 97)	58 (20, 97)	59 (20, 100)
IQR	17	18	17	17
Age group, No. (%)				
20 - <30	61 (1)	21 (1)	27 (1)	109 (1)
30 - <40	455 (5)	182 (5)	185 (5)	822 (5)
40 - <50	1783 (18)	628 (17)	603 (18)	3014 (18)
50 - <60	3010 (30)	1079 (30)	1088 (32)	5177 (31)
60 - <70	2594 (26)	933 (26)	811 (24)	4338 (26)
70 - <80	1628 (16)	596 (17)	540 (16)	2764 (16)
≥ 80	340 (3)	155 (4)	147 (4)	642 (4)
Gender, No. (%)				
Male	7476 (76)	2726 (76)	2621 (77)	12823 (76)
Female	2395 (24)	868 (24)	780 (23)	4043 (24)
Ethnic group, No. (%)				
Malay	4819 (49)	1787 (50)	1712 (50)	8318 (49)
Chinese	2295 (23)	764 (21)	697 (20)	3756 (22)
Indian	2241 (23)	866 (24)	780 (23)	3887 (23)
Orang Asli	2 (0)	1 (0)	4 (0)	7 (0)
Kadazan	36 (0)	22 (1)	35 (1)	93 (1)
Melanau	2 (0)	2 (0)	3 (0)	7 (0)
Murut	0 (0)	1 (0)	1 (0)	2 (0)
Bajau	53 (1)	15 (0)	36 (1)	104 (1)
Bidayuh	52 (1)	9 (0)	6 (0)	67 (0)
Iban	120 (1)	35 (1)	19 (1)	174 (1)
Sikh	22 (0)	13 (0)	10 (0)	45 (0)
Other Malaysian	100 (1)	30 (1)	46 (1)	176 (1)
Foreigner	129 (1)	49 (1)	52 (2)	230 (1)
OTHER CORONARY RISK FACTORS				
Smoking, No. (%)				
Never	3726 (38)	1477 (41)	1317 (39)	6520 (39)
Former (quit >30 days)	2165 (22)	916 (25)	702 (21)	3783 (22)
Current (any tobacco use within last 30 days)	3344 (34)	1102 (31)	1159 (34)	5605 (33)
Unknown	636 (6)	99 (3)	223 (7)	958 (6)

Year	2006-2008	2009	2010	2006-2010
Total	**9871**	**3594**	**3401**	**16866**
Family history of Premature CVD, No. (%)				
Yes	1135 (11)	337 (9)	430 (13)	1902 (11)
No	5557 (56)	2207 (61)	1947 (57)	9711 (58)
Unknown	3179 (32)	1050 (29)	1024 (30)	5253 (31)
Body Mass Index (BMI), kg/m^2				
N	5440	1850	1360	8650
Mean (SD)	25.6 (4.3)	25.8 (4.4)	26.0 (4.6)	25.7 (4.4)
Median (min, max)	25.1 (13.2, 60.4)	25.3 (14.5, 65.3)	25.5 (14.2, 64.5)	25.2 (13.2, 65.3)
IQR	4.9	4.7	5.3	4.9
BMI, kg/ m^2, No. (%)				
<18.5	147 (3)	38 (2)	32 (2)	217 (3)
18.5 - 23.0	1261 (23)	403 (22)	302 (22)	1966 (23)
>23.0	4032 (74)	1409 (76)	1026 (75)	6467 (75)
Waist Hip Ratio (WHR)				
N	4261	1283	753	6297
Mean (SD)	.96 (.08)	.96 (.08)	.96 (.09)	.96 (.08)
Median (min, max)	.96 (.36, 1.85)	.96 (.52, 2.02)	.96 (.36, 1.58)	.96 (.36, 2.02)
IQR	0.07	0.07	0.10	0.07
WHR, No. (%)				
Men	3360	1045	648	5053
≤1.0	2586 (77)	789 (76)	471 (73)	3846 (76)
>1.0	774 (23)	256 (24)	177 (27)	1207 (24)
Women	901	238	105	1244
≤0.85	109 (12)	26 (11)	18 (17)	153 (12)
>0.85	792 (88)	212 (89)	87 (83)	1091 (88)
Waist circumference, cm				
N	4525	1335	826	6686
Mean (SD)	88.6 (14.6)	89.2 (14.1)	89 (17.5)	88.7 (14.9)
Median (min, max)	89 (36, 162)	90 (36, 192)	90 (36, 181)	90 (36, 192)
IQR	15	15	15	15
Waist circumference, cm, No. (%)				
Men	3542	1088	710	5340
≤90	1915 (54)	578 (53)	350 (49)	2843 (53)
>90	1627 (46)	510 (47)	360 (51)	2497 (47)

Year	2006-2008	2009	2010	2006-2010
Total	**9871**	**3594**	**3401**	**16866**
Women	983	247	116	1346
≤80	235 (24)	63 (26)	36 (31)	334 (25)
>80	748 (76)	184 (74)	80 (69)	1012 (75)
CO-MORBIDITY				
Dyslipidaemia, No. (%)				
Yes	3279 (33)	1248 (35)	1090 (32)	5617 (33)
No	3078 (31)	1586 (44)	1429 (42)	6093 (36)
Unknown	3514 (36)	760 (21)	882 (26)	5156 (31)
Hypertension, No. (%)				
Yes	5933 (60)	2302 (64)	2081 (61)	10316 (61)
No	2479 (25)	954 (27)	962 (28)	4395 (26)
Unknown	1459 (15)	338 (9)	358 (11)	2155 (13)
Diabetes, No. (%)				
Yes	4173 (42)	1564 (44)	1508 (44)	7245 (43)
No	3945 (40)	1571 (44)	1434 (42)	6950 (41)
Unknown	1753 (18)	459 (13)	459 (13)	2671 (16)
Fasting blood glucose, mmol/L				
N	7143	2735	2337	12215
Mean (SD)	8.0 (3.8)	7.7 (3.4)	8.0 (3.6)	8.0 (3.7)
Median (min, max)	6.7 (3.0, 29.9)	6.6 (3.0, 29.9)	6.8 (3.0, 29.9)	6.7 (3.0, 29.9)
IQR	3.7	3.0	3.4	3.4
Myocardial infarction history, No. (%)				
Yes	1591 (16)	923 (26)	678 (20)	3192 (19)
No	6085 (62)	2095 (58)	2192 (64)	10372 (61)
Unknown	2195 (22)	576 (16)	531 (16)	3302 (20)
Documented CAD>50% stenosis, No. (%)				
Yes	1572 (16)	729 (20)	552 (16)	2853 (17)
No	5519 (56)	1920 (53)	2079 (61)	9518 (56)
Unknown	2780 (28)	945 (26)	770 (23)	4495 (27)
Chronic angina (onset more than 2 weeks ago), No. (%)				
Yes	1140 (12)	430 (12)	342 (10)	1912 (11)
No	6653 (67)	2558 (71)	2551 (75)	11762 (70)
Unknown	2078 (21)	606 (17)	508 (15)	3192 (19)

Year	2006-2008	2009	2010	2006-2010
Total	**9871**	**3594**	**3401**	**16866**
New onset angina (less than 2 weeks ago), No. (%)				
Yes	4820 (49)	2429 (68)	2051 (60)	9300 (55)
No	3391 (34)	912 (25)	976 (29)	5279 (31)
Unknown	1660 (17)	253 (7)	374 (11)	2287 (14)
Heart failure, No. (%)				
Yes	670 (7)	271 (8)	291 (9)	1232 (7)
No	7260 (74)	2943 (82)	2678 (79)	12881 (76)
Unknown	1941 (20)	380 (11)	432 (13)	2753 (16)
Chronic lung disease, No. (%)				
Yes	322 (3)	134 (4)	147 (4)	603 (4)
No	7580 (77)	3050 (85)	2814 (83)	13444 (80)
Unknown	1969 (20)	410 (11)	440 (13)	2819 (17)
Renal disease, No. (%)				
Yes	643 (7)	253 (7)	258 (8)	1154 (7)
No	7255 (73)	2697 (75)	2648 (78)	12600 (75)
Unknown	1973 (20)	644 (18)	495 (15)	3112 (18)
Cerebrovascular disease, No. (%)				
Yes	355 (4)	116 (3)	128 (4)	599 (4)
No	7557 (77)	2817 (78)	2776 (82)	13150 (78)
Unknown	1959 (20)	661 (18)	497 (15)	3117 (18)
Peripheral vascular disease, No. (%)				
Yes	80 (1)	20 (1)	21 (1)	121 (1)
No	7725 (78)	2851 (79)	2834 (83)	13410 (80)
Unknown	2066 (21)	723 (20)	546 (16)	3335 (20)
None of the above, No. (%)				
Yes	235 (2)	70 (2)	77 (2)	382 (2)
No	8700 (88)	3355 (93)	3093 (91)	15148 (90)
Unknown	936 (9)	169 (5)	231 (7)	1336 (8)
Coronary artery disease, No. (%)				
Yes	6345 (64)	2868 (80)	2437 (72)	11650 (69)
No	1839 (19)	415 (12)	555 (16)	2809 (17)
Unknown	1687 (17)	311 (9)	409 (12)	2407 (14)

* *'Unknown' includes patients who do not know their co-morbidities and missing data*
** *Coronary artery disease is defined as "Yes" to 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 2.2 Distribution of patients with ACS by Source Data Providers, NCVD-ACS Registry, 2006-2010

Year	2006		2007		2008		2009		2010		Total	
Source Data Provider	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Pusat Perubatan Universiti Malaya	801	24	623	17	339	12	941	26	623	18	3327	20
Hospital Pulau Pinang	464	14	593	16	471	17	395	11	325	10	2248	13
Institut Jantung Negara	456	13	401	11	264	9	478	13	365	11	1964	12
Hospital Kuala Lumpur	412	12	379	10	334	12	230	6	424	12	1779	11
Hospital Tengku Ampuan Afzan	152	4	370	10	278	10	339	9	288	8	1427	8
Hospital Umum Sarawak	362	11	286	8	274	10	222	6	151	4	1295	8
Hospital Sultanah Aminah	242	7	231	6	261	9	303	8	191	6	1228	7
Hospital Tuanku Ja'afar	152	4	246	7	193	7	74	2	128	4	793	5
Hospital Tuanku Fauziah	53	2	71	2	101	4	20	1	60	2	305	2
Hospital Raja Perempuan Zainab II	141	4	134	4	82	3	134	4	70	2	561	3
Hospital Sultanah Bahiyah	157	5	48	1	4	0	97	3	66	2	372	2
Hospital Queen Elizabeth			92	3	82	3	77	2	201	6	452	3
Hospital Raja Permaisuri Bainun			53	1	0	0	93	3	173	5	319	2
Hospital Melaka			113	3	146	5	131	4	186	5	576	3
Hospital Tengku Ampuan Rahimah					10	0	60	2	117	3	187	1
Hospital Serdang									33	1	33	0
TOTAL	**3392**	**100**	**3640**	**100**	**2839**	**100**	**3594**	**100**	**3401**	**100**	**16866**	**100**

*Each SDP started to contribute data at different time period
***Note:** Percentage is to the nearest decimal point*

Table 2.3 Age-gender distribution of patients with ACS, NCVD-ACS Registry, 2006-2010

	Age	Gender					
		Male		Female		Total	
		No.	%	No.	%	No.	%
2006-2008	20 - <30	58	1	3	0	61	1
	30 - <40	416	6	39	2	455	5
	40 - <50	1552	21	231	10	1783	18
	50 - <60	2509	34	501	21	3010	30
	60 - <70	1853	25	741	31	2594	26
	70 - <80	911	12	717	30	1628	16
	>=80	177	2	163	7	340	3
	Total	**7476**	**100**	**2395**	**100**	**9871**	**100**
2009	20 - <30	21	1	0	0	21	1
	30 - <40	170	6	12	1	182	5
	40 - <50	560	21	68	8	628	17
	50 - <60	879	32	200	23	1079	30
	60 - <70	685	25	248	29	933	26
	70 - <80	341	13	255	29	596	17
	>=80	70	3	85	10	155	4
	Total	**2726**	**100**	**868**	**100**	**3594**	**100**
2010	20 - <30	27	1	0	0	27	1
	30 - <40	170	6	15	2	185	5
	40 - <50	546	21	57	7	603	18
	50 - <60	895	34	193	25	1088	32
	60 - <70	602	23	209	27	811	24
	70 - <80	312	12	228	29	540	16
	>=80	69	3	78	10	147	4
	Total	**2621**	**100**	**780**	**100**	**3401**	**100**
2006 - 2010	20 - <30	106	1	3	0	109	1
	30 - <40	756	6	66	2	822	5
	40 - <50	2658	21	356	9	3014	18
	50 - <60	4283	33	894	22	5177	31
	60 - <70	3140	24	1198	30	4338	26
	70 - <80	1564	12	1200	30	2764	16
	>=80	316	2	326	8	642	4
	Total	**12823**	**100**	**4043**	**100**	**16866**	**100**

Note: Percentage is to the nearest decimal point

Table 2.4.1 Age-gender distribution of patients with ACS by ethnic group, NCVD-ACS Registry, 2006-2010

Year	Gender	Age group	Ethnic group							
			Malay		Chinese		Indian		Others	
			No.	%	No.	%	No.	%	No.	%
2006 - 2008	Male	20 - <30	29	1	10	1	13	1	6	1
		30 - <40	200	5	63	4	110	7	43	10
		40 - <50	817	22	241	14	389	24	105	25
		50 - <60	1297	34	495	30	587	37	130	31
		60 - <70	950	25	503	30	310	19	90	21
		70 - <80	430	11	293	18	147	9	41	10
		>=80	71	2	58	3	41	3	7	2
		Total	3794	100	1663	100	1597	100	422	100
	Female	20 - <30	2	0	0	0	1	0	0	0
		30 - <40	13	1	10	2	13	2	3	3
		40 - <50	112	11	20	3	92	14	7	7
		50 - <60	233	23	89	14	160	25	19	20
		60 - <70	332	32	192	30	188	29	29	31
		70 - <80	287	28	244	39	155	24	31	33
		>=80	46	4	77	12	35	5	5	5
		Total	1025	100	632	100	644	100	94	100
2009	Male	20 - <30	10	1	1	0	7	1	3	2
		30 - <40	85	6	21	4	44	7	20	14
		40 - <50	309	22	78	14	142	22	31	22
		50 - <60	483	35	136	25	232	36	28	20
		60 - <70	344	25	168	30	140	22	33	24
		70 - <80	141	10	123	22	61	10	16	11
		>=80	24	2	25	5	12	2	9	6
		Total	1396	100	552	100	638	100	140	100
	Female	20 - <30	0	0	0	0	0	0	0	0
		30 - <40	7	2	0	0	3	1	2	5
		40 - <50	30	8	5	2	31	14	2	5
		50 - <60	106	27	30	14	54	24	10	27
		60 - <70	127	32	50	24	60	26	11	30
		70 - <80	101	26	84	40	59	26	11	30
		>=80	20	5	43	20	21	9	1	3
		Total	391	100	212	100	228	100	37	100

Year	Gender	Age group	Malay No.	Malay %	Chinese No.	Chinese %	Indian No.	Indian %	Others No.	Others %
			Ethnic group							
2010	Male	20 - <30	14	1	1	0	4	1	8	5
		30 - <40	89	6	18	3	38	7	25	15
		40 - <50	301	22	93	18	115	21	36	22
		50 - <60	480	35	159	31	204	37	53	32
		60 - <70	313	23	140	27	123	22	26	16
		70 - <80	155	11	89	17	54	10	14	8
		>=80	30	2	21	4	13	2	5	3
		Total	1382	100	521	100	551	100	167	100
	Female	20 - <30	0	0	0	0	0	0	0	0
		30 - <40	8	2	1	1	2	1	4	9
		40 - <50	32	10	5	3	14	6	6	13
		50 - <60	81	25	26	15	77	34	9	20
		60 - <70	91	28	46	26	61	27	11	24
		70 - <80	97	29	62	35	55	24	14	31
		>=80	21	6	36	20	20	9	1	2
		Total	330	100	176	100	229	100	45	100

Year	Gender	Age group	Malay No.	Malay %	Chinese No.	Chinese %	Indian No.	Indian %	Others No.	Others %
2006 - 2010	Male	20 - <30	53	1	12	0	24	1	17	2
		30 - <40	374	6	102	4	192	7	88	12
		40 - <50	1429	22	412	15	646	23	173	24
		50 - <60	2259	34	790	29	1023	37	211	29
		60 - <70	1607	24	811	30	573	21	149	20
		70 - <80	725	11	505	18	262	9	70	10
		>=80	125	2	104	4	66	2	21	3
		Total	**6572**	**100**	**2736**	**100**	**2786**	**100**	**729**	**100**
	Female	20 - <30	2	0	0	0	1	0	0	0
		30 - <40	28	2	11	1	18	2	9	5
		40 - <50	174	10	30	3	137	12	15	9
		50 - <60	420	24	145	14	291	26	38	22
		60 - <70	550	32	288	28	309	28	51	29
		70 - <80	485	28	390	38	269	24	56	32
		>=80	87	5	156	15	76	7	7	4
		Total	**1746**	**100**	**1020**	**100**	**1101**	**100**	**176**	**100**

'Others' includes Orang asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and Foreigner
Note: Percentage is to the nearest decimal point

Table 2.4.2 Age-gender distribution of patients with ACS by pre-morbid diabetes, NCVD-ACS Registry, 2006-2010

Year	Gender	Age group	Pre-morbid diabetes					
			Diabetic		Non-diabetic		Unknown	
			No.	%	No.	%	No.	%
2006-2008	Male	20 - <30	7	0	31	1	20	1
		30 - <40	96	3	211	7	109	8
		40 - <50	500	18	712	22	340	24
		50 - <60	1031	37	1005	31	473	33
		60 - <70	779	28	772	24	302	21
		70 - <80	360	13	403	13	148	10
		>=80	47	2	86	3	44	3
		Total	**2820**	**100**	**3220**	**100**	**1436**	**100**
	Female	20 - <30	1	0	1	0	1	0
		30 - <40	14	1	19	3	6	2
		40 - <50	137	10	65	9	29	9
		50 - <60	303	22	138	19	60	19
		60 - <70	439	32	210	29	92	29
		70 - <80	394	29	229	32	94	30
		>=80	65	5	63	9	35	11
		Total	**1353**	**100**	**725**	**100**	**317**	**100**
2009	Male	20 - <30	2	0	17	1	2	1
		30 - <40	41	4	94	7	35	9
		40 - <50	188	17	284	22	88	23
		50 - <60	382	35	388	31	109	29
		60 - <70	308	28	294	23	83	22
		70 - <80	136	13	156	12	49	13
		>=80	26	2	34	3	10	3
		Total	**1083**	**100**	**1267**	**100**	**376**	**100**
	Female	20 - <30	0	0	0	0	0	0
		30 - <40	5	1	6	2	1	1
		40 - <50	34	7	23	8	11	13
		50 - <60	144	30	42	14	14	17
		60 - <70	146	30	79	26	23	28
		70 - <80	117	24	114	38	24	29
		>=80	35	7	40	13	10	12
		Total	**481**	**100**	**304**	**100**	**83**	**100**

Year	Gender	Age group	Pre-morbid diabetes					
			Diabetic		Non-diabetic		Unknown	
			No.	%	No.	%	No.	%
2010	Male	20 - <30	1	0	21	2	5	1
		30 - <40	42	4	94	8	34	9
		40 - <50	198	18	243	21	105	27
		50 - <60	395	36	377	33	123	32
		60 - <70	276	25	257	22	69	18
		70 - <80	145	13	128	11	39	10
		>=80	32	3	27	2	10	3
		Total	**1089**	**100**	**1147**	**100**	**385**	**100**
	Female	20 - <30	0	0	0	0	0	0
		30 - <40	7	2	7	2	1	1
		40 - <50	26	6	24	8	7	9
		50 - <60	120	29	57	20	16	22
		60 - <70	131	31	65	23	13	18
		70 - <80	101	24	102	36	25	34
		>=80	34	8	32	11	12	16
		Total	**419**	**100**	**287**	**100**	**74**	**100**
2006-2010	Male	20 - <30	10	0	69	1	27	1
		30 - <40	179	4	399	7	178	8
		40 - <50	886	18	1239	22	533	24
		50 - <60	1808	36	1770	31	705	32
		60 - <70	1363	27	1323	23	454	21
		70 - <80	641	13	687	12	236	11
		>=80	105	2	147	3	64	3
		Total	**4992**	**100**	**5634**	**100**	**2197**	**100**
	Female	20 - <30	1	0	1	0	1	0
		30 - <40	26	1	32	2	8	2
		40 - <50	197	9	112	9	47	10
		50 - <60	567	25	237	18	90	19
		60 - <70	716	32	354	27	128	27
		70 - <80	612	27	445	34	143	30
		>=80	134	6	135	10	57	12
		Total	**2253**	**100**	**1316**	**100**	**474**	**100**

Note: Percentage is to the nearest decimal point

Table 2.4.3 Age-gender distribution of patients with ACS by pre-morbid hypertension, NCVD-ACS Registry, 2006-2010

Year	Gender	Age group	Pre-morbid hypertension					
			Hypertensive		Non-Hypertensive		Unknown	
			No.	%	No.	%	No.	%
2006-2008	Male	20 - <30	13	0	27	1	18	1
		30 - <40	135	3	180	8	101	8
		40 - <50	651	16	587	27	314	26
		50 - <60	1410	34	701	32	398	33
		60 - <70	1183	29	428	20	242	20
		70 - <80	601	15	196	9	114	9
		>=80	99	2	43	2	35	3
		Total	**4092**	**100**	**2162**	**100**	**1222**	**100**
	Female	20 - <30	1	0	1	0	1	0
		30 - <40	15	1	17	5	7	3
		40 - <50	153	8	47	15	31	13
		50 - <60	379	21	79	25	43	18
		60 - <70	603	33	75	24	63	27
		70 - <80	567	31	78	25	72	30
		>=80	123	7	20	6	20	8
		Total	**1841**	**100**	**317**	**100**	**237**	**100**
2009	Male	20 - <30	3	0	15	2	3	1
		30 - <40	58	4	79	10	33	11
		40 - <50	253	16	233	29	74	25
		50 - <60	530	33	268	33	81	27
		60 - <70	478	30	146	18	61	21
		70 - <80	239	15	64	8	38	13
		>=80	52	3	12	1	6	2
		Total	**1613**	**100**	**817**	**100**	**296**	**100**
	Female	20 - <30	0	0	0	0	0	0
		30 - <40	8	1	3	2	1	2
		40 - <50	48	7	15	11	5	12
		50 - <60	160	23	29	21	11	26
		60 - <70	198	29	40	29	10	24
		70 - <80	208	30	36	26	11	26
		>=80	67	10	14	10	4	10
		Total	**689**	**100**	**137**	**100**	**42**	**100**

Year	Gender	Age group	Pre-morbid hypertension					
			Hypertensive		Non-Hypertensive		Unknown	
			No.	%	No.	%	No.	%
2010	Male	20 - <30	2	0	20	2	5	2
		30 - <40	56	4	81	10	33	11
		40 - <50	226	15	222	27	98	31
		50 - <60	519	35	280	34	96	31
		60 - <70	401	27	150	18	51	16
		70 - <80	221	15	68	8	23	7
		>=80	49	3	14	2	6	2
		Total	**1474**	**100**	**835**	**100**	**312**	**100**
	Female	20 - <30	0	0	0	0	0	0
		30 - <40	7	1	7	6	1	2
		40 - <50	41	7	12	9	4	9
		50 - <60	148	24	33	26	12	26
		60 - <70	163	27	35	28	11	24
		70 - <80	183	30	32	25	13	28
		>=80	65	11	8	6	5	11
		Total	**607**	**100**	**127**	**100**	**46**	**100**
2006-2010	Male	20 - <30	18	0	62	2	26	1
		30 - <40	249	3	340	9	167	9
		40 - <50	1130	16	1042	27	486	27
		50 - <60	2459	34	1249	33	575	31
		60 - <70	2062	29	724	19	354	19
		70 - <80	1061	15	328	9	175	10
		>=80	200	3	69	2	47	3
		Total	**7179**	**100**	**3814**	**100**	**1830**	**100**
	Female	20 - <30	1	0	1	0	1	0
		30 - <40	30	1	27	5	9	3
		40 - <50	242	8	74	13	40	12
		50 - <60	687	22	141	24	66	20
		60 - <70	964	31	150	26	84	26
		70 - <80	958	31	146	25	96	30
		>=80	255	8	42	7	29	9
		Total	**3137**	**100**	**581**	**100**	**325**	**100**

Note: Percentage is to the nearest decimal point

Table 2.4.4 Age-gender distribution of patients with ACS by pre-morbid dyslipidaemia, NCVD-ACS Registry, 2006-2010

Year	Gender	Age group	Pre-morbid dyslipidaemia					
			Dyslipidaemia		Non-Dyslipidaemia		Unknown	
			No.	%	No.	%	No.	%
2006-2008	Male	20 - <30	10	0	22	1	26	1
		30 - <40	93	4	157	7	166	6
		40 - <50	439	19	489	20	624	23
		50 - <60	802	34	801	33	906	34
		60 - <70	672	28	579	24	602	22
		70 - <80	311	13	293	12	307	11
		>=80	44	2	67	3	66	2
		Total	**2371**	**100**	**2408**	**100**	**2697**	**100**
	Female	20 - <30	1	0	1	0	1	0
		30 - <40	10	1	10	1	19	2
		40 - <50	77	8	81	12	73	9
		50 - <60	173	19	160	24	168	21
		60 - <70	310	34	193	29	238	29
		70 - <80	292	32	177	26	248	30
		>=80	45	5	48	7	70	9
		Total	**908**	**100**	**670**	**100**	**817**	**100**
2009	Male	20 - <30	5	1	10	1	6	1
		30 - <40	43	5	74	6	53	9
		40 - <50	180	20	249	21	131	21
		50 - <60	308	34	389	32	182	30
		60 - <70	243	27	294	25	148	24
		70 - <80	117	13	148	12	76	12
		>=80	18	2	35	3	17	3
		Total	**914**	**100**	**1199**	**100**	**613**	**100**
	Female	20 - <30	0	0	0	0	0	0
		30 - <40	4	1	6	2	2	1
		40 - <50	23	7	37	10	8	5
		50 - <60	77	23	87	22	36	24
		60 - <70	106	32	104	27	38	26
		70 - <80	97	29	109	28	49	33
		>=80	27	8	44	11	14	10
		Total	**334**	**100**	**387**	**100**	**147**	**100**

Year	Gender	Age group	Pre-morbid dyslipidaemia					
			Dyslipidaemia		Non-Dyslipidaemia		Unknown	
			No.	%	No.	%	No.	%
2010	Male	20 - <30	5	1	14	1	8	1
		30 - <40	41	5	69	6	60	8
		40 - <50	157	19	213	20	176	25
		50 - <60	302	36	352	33	241	34
		60 - <70	195	23	269	25	138	19
		70 - <80	109	13	129	12	74	10
		>=80	23	3	31	3	15	2
		Total	832	100	1077	100	712	100
	Female	20 - <30	0	0	0	0	0	0
		30 - <40	3	1	9	3	3	2
		40 - <50	12	5	34	10	11	6
		50 - <60	71	28	75	21	47	28
		60 - <70	79	31	85	24	45	26
		70 - <80	72	28	111	32	45	26
		>=80	21	8	38	11	19	11
		Total	258	100	352	100	170	100
2006-2010	Male	20 - <30	20	0	46	1	40	1
		30 - <40	177	4	300	6	279	7
		40 - <50	776	19	951	20	931	23
		50 - <60	1412	34	1542	33	1329	33
		60 - <70	1110	27	1142	24	888	22
		70 - <80	537	13	570	12	457	11
		>=80	85	2	133	3	98	2
		Total	4117	100	4684	100	4022	100
	Female	20 - <30	1	0	1	0	1	0
		30 - <40	17	1	25	2	24	2
		40 - <50	112	7	152	11	92	8
		50 - <60	321	21	322	23	251	22
		60 - <70	495	33	382	27	321	28
		70 - <80	461	31	397	28	342	30
		>=80	93	6	130	9	103	9
		Total	1500	100	1409	100	1134	100

Note: Percentage is to the nearest decimal point

Table 2.4.5 Age-gender distribution of patients with ACS by family history of premature cardiovascular disease, NCVD-ACS Registry, 2006-2010

Year	Gender	Age group	Family history of premature cardiovascular disease					
			Yes		No		Unknown	
			No.	%	No.	%	No.	%
2006-2008	Male	20 - <30	9	1	33	1	16	1
		30 - <40	93	10	204	5	119	5
		40 - <50	278	30	808	19	466	20
		50 - <60	326	35	1374	33	809	35
		60 - <70	168	18	1113	26	572	24
		70 - <80	49	5	566	13	296	13
		>=80	12	1	104	2	61	3
		Total	**935**	**100**	**4202**	**100**	**2339**	**100**
	Female	20 - <30	0	0	2	0	1	0
		30 - <40	7	4	22	2	10	1
		40 - <50	51	26	121	9	59	7
		50 - <60	54	27	280	21	167	20
		60 - <70	51	26	432	32	258	31
		70 - <80	33	17	406	30	278	33
		>=80	4	2	92	7	67	8
		Total	**200**	**100**	**1355**	**100**	**840**	**100**
2009	Male	20 - <30	1	0	15	1	5	1
		30 - <40	26	10	97	6	47	6
		40 - <50	89	34	334	20	137	17
		50 - <60	84	32	568	34	227	29
		60 - <70	45	17	408	24	232	30
		70 - <80	16	6	207	12	118	15
		>=80	4	2	46	3	20	3
		Total	**265**	**100**	**1675**	**100**	**786**	**100**
	Female	20 - <30	0	0	0	0	0	0
		30 - <40	2	3	7	1	3	1
		40 - <50	7	10	39	7	22	8
		50 - <60	17	24	122	23	61	23
		60 - <70	20	28	158	30	70	27
		70 - <80	17	24	154	29	84	32
		>=80	9	13	52	10	24	9
		Total	**72**	**100**	**532**	**100**	**264**	**100**

Year	Gender	Age group	Family history of premature cardiovascular disease					
			Yes		No		Unknown	
			No.	%	No.	%	No.	%
2010	Male	20 - <30	5	1	14	1	8	1
		30 - <40	48	14	71	5	51	7
		40 - <50	95	27	307	20	144	19
		50 - <60	129	37	530	35	236	31
		60 - <70	51	15	377	25	174	23
		70 - <80	18	5	183	12	111	15
		>=80	2	1	38	3	29	4
		Total	**348**	**100**	**1520**	**100**	**753**	**100**
	Female	20 - <30	0	0	0	0	0	0
		30 - <40	2	2	10	2	3	1
		40 - <50	13	16	31	7	13	5
		50 - <60	29	35	100	23	64	24
		60 - <70	14	17	120	28	75	28
		70 - <80	18	22	133	31	77	28
		>=80	6	7	33	8	39	14
		Total	**82**	**100**	**427**	**100**	**271**	**100**
2006-2010	Male	20 - <30	15	1	62	1	29	1
		30 - <40	167	11	372	5	217	6
		40 - <50	462	30	1449	20	747	19
		50 - <60	539	35	2472	33	1272	33
		60 - <70	264	17	1898	26	978	25
		70 - <80	83	5	956	13	525	14
		>=80	18	1	188	3	110	3
		Total	**1548**	**100**	**7397**	**100**	**3878**	**100**
	Female	20 - <30	0	0	2	0	1	0
		30 - <40	11	3	39	2	16	1
		40 - <50	71	20	191	8	94	7
		50 - <60	100	28	502	22	292	21
		60 - <70	85	24	710	31	403	29
		70 - <80	68	19	693	30	439	32
		>=80	19	5	177	8	130	9
		Total	**354**	**100**	**2314**	**100**	**1375**	**100**

Note: Percentage is to the nearest decimal point

Table 2.4.6 Age-gender distribution of patients with ACS by smoking status, NCVD-ACS Registry, 2006-2010

Year	Gender	Age group	Smoking status							
			Never		Former (quit more than 30 days)		Current (any tobacco used within 30 days)		Unknown	
			No.	%	No.	%	No.	%	No.	%
2006-2008	Male	20 - <30	8	0	3	0	45	1	2	0
		30 - <40	45	3	63	3	277	8	31	7
		40 - <50	292	17	272	13	932	29	56	12
		50 - <60	561	33	644	32	1145	35	159	34
		60 - <70	502	29	623	31	606	19	122	26
		70 - <80	252	15	350	17	231	7	78	17
		>=80	50	3	79	4	31	1	17	4
		Total	1710	100	2034	100	3267	100	465	100
	Female	20 - <30	2	0	0	0	1	1	0	0
		30 - <40	36	2	0	0	2	3	1	1
		40 - <50	208	10	5	4	7	9	11	6
		50 - <60	430	21	24	18	13	17	34	20
		60 - <70	628	31	35	27	25	32	53	31
		70 - <80	578	29	54	41	25	32	60	35
		>=80	134	7	13	10	4	5	12	7
		Total	2016	100	131	100	77	100	171	100
2009	Male	20 - <30	3	0	2	0	15	1	1	1
		30 - <40	28	4	42	5	96	9	4	6
		40 - <50	119	16	139	16	291	27	11	16
		50 - <60	227	31	267	31	363	34	22	32
		60 - <70	204	28	230	27	228	21	23	33
		70 - <80	125	17	140	16	69	6	7	10
		>=80	34	5	30	4	5	0	1	1
		Total	740	100	850	100	1067	100	69	100
	Female	20 - <30	0	0	0	0	0	0	0	0
		30 - <40	10	1	1	2	1	3	0	0
		40 - <50	58	8	6	9	2	6	2	7
		50 - <60	175	24	8	12	9	26	8	27
		60 - <70	213	29	17	26	7	20	11	37
		70 - <80	213	29	23	35	11	31	8	27
		>=80	68	9	11	17	5	14	1	3
		Total	737	100	66	100	35	100	30	100

Year	Gender	Age group	Smoking status							
			Never		Former (quit more than 30 days)		Current (any tobacco used within 30 days)		Unknown	
			No.	%	No.	%	No.	%	No.	%
2010	Male	20 - <30	7	1	2	0	16	1	2	1
		30 - <40	30	4	23	3	112	10	5	3
		40 - <50	102	15	90	13	331	29	23	15
		50 - <60	238	35	224	34	383	34	50	34
		60 - <70	186	27	190	28	196	17	30	20
		70 - <80	93	14	115	17	73	6	31	21
		>=80	24	4	23	3	14	1	8	5
		Total	**680**	**100**	**667**	**100**	**1125**	**100**	**149**	**100**
	Female	20 - <30	0	0	0	0	0	0	0	0
		30 - <40	13	2	0	0	2	6	0	0
		40 - <50	50	8	3	9	1	3	3	4
		50 - <60	164	26	4	11	9	26	16	22
		60 - <70	170	27	12	34	10	29	17	23
		70 - <80	184	29	8	23	10	29	26	35
		>=80	56	9	8	23	2	6	12	16
		Total	**637**	**100**	**35**	**100**	**34**	**100**	**74**	**100**
2006-2010	Male	20 - <30	18	1	7	0	76	1	5	1
		30 - <40	103	3	128	4	485	9	40	6
		40 - <50	513	16	501	14	1554	28	90	13
		50 - <60	1026	33	1135	32	1891	35	231	34
		60 - <70	892	28	1043	29	1030	19	175	26
		70 - <80	470	15	605	17	373	7	116	17
		>=80	108	3	132	4	50	1	26	4
		Total	**3130**	**100**	**3551**	**100**	**5459**	**100**	**683**	**100**
	Female	20 - <30	2	0	0	0	1	1	0	0
		30 - <40	59	2	1	0	5	3	1	0
		40 - <50	316	9	14	6	10	7	16	6
		50 - <60	769	23	36	16	31	21	58	21
		60 - <70	1011	30	64	28	42	29	81	29
		70 - <80	975	29	85	37	46	32	94	34
		>=80	258	8	32	14	11	8	25	9
		Total	**3390**	**100**	**232**	**100**	**146**	**100**	**275**	**100**

Note: Percentage is to the nearest decimal point

Table 2.5 Presence of cumulative risk factors, NCVD-ACS Registry, 2006-2010

Year	2006		2007		2008		2009		2010		Total	
Total	**3392**		**3640**		**2839**		**3594**		**3401**		**16866**	
Presence of cumulative risk factors*	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
None	141	4	156	4	184	6	159	4	171	5	811	5
1 risk factor	625	18	642	18	643	23	672	19	691	20	3273	19
2 risk factors	979	29	1067	29	807	28	1024	28	1048	31	4925	29
3 risk factors	933	28	976	27	706	25	992	28	892	26	4499	27
>3 risk factors	714	21	799	22	499	18	747	21	599	18	3358	20

* Risk factors are defined as presence of dyslipidaemia, hypertension, diabetes, family history of premature cardiovascular disease, smoking and obesity

Table 2.6 Summary of type of cardiac presentation for patients with ACS, NCVD-ACS Registry, 2006-2010

Year	2006		2007		2008		2009		2010		Total	
Total	**3392**		**3640**		**2839**		**3594**		**3401**		**16866**	
Acute coronary syndrome stratum	No	%	No	%	No	%	No	%	No	%	No	%
STEMI	1427	42	1687	46	1533	54	1681	47	1802	53	8130	48
NSTEMI	1152	34	1063	29	689	24	1046	29	1008	30	4958	29
Unstable Angina (UA)	813	24	890	24	617	22	867	24	591	17	3778	22

Note: Percentage is to the nearest decimal point

Table 2.7 Characteristics of patients with ACS by ACS stratum, NCVD-ACS Registry, 2006-2010

Year	2006-2008			2009			2010			2006-2010		
ACS Stratum	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA
Total	**4647**	**2904**	**2320**	**1681**	**1046**	**867**	**1802**	**1008**	**591**	**8130**	**4958**	**3778**
DEMOGRAPHICS												
Age, years												
N	4647	2904	2320	1681	1046	867	1802	1008	591	8130	4958	3778
Mean (SD)	57 (12)	62 (12)	61 (12)	56 (12)	62 (12)	61 (12)	56 (12)	62 (12)	60 (12)	56 (12)	62 (12)	61 (12)
Median (min, max)	56 (21, 95)	62 (22, 100)	61 (24, 92)	56 (22, 92)	62 (27, 97)	61 (29, 94)	56 (20, 90)	62 (21, 97)	59 (31, 91)	56 (20, 95)	62 (21, 100)	61 (24, 94)
IQR	17	17	17	17	17	17	15	18	17	16	17	17
Age group, No. (%)												
20 - <30	46 (1)	9 (0)	6 (0)	17 (1)	3 (0)	1 (0)	22 (1)	5 (0)	0 (0)	85 (1)	17 (0)	7 (0)
30 - <40	298 (6)	78 (3)	79 (3)	128 (8)	28 (3)	26 (3)	124 (7)	38 (4)	23 (4)	550 (7)	144 (3)	128 (3)
40 - <50	1074 (23)	360 (12)	349 (15)	380 (23)	124 (12)	124 (14)	396 (22)	119 (12)	88 (15)	1850 (23)	603 (12)	561 (15)
50 - <60	1482 (32)	840 (29)	688 (30)	529 (31)	296 (28)	254 (29)	611 (34)	275 (27)	202 (34)	2622 (32)	1411 (28)	1144 (30)
60 - <70	1079 (23)	853 (29)	662 (29)	379 (23)	317 (30)	237 (27)	394 (22)	276 (27)	141 (24)	1852 (23)	1446 (29)	1040 (28)
70 - <80	557 (12)	626 (22)	445 (19)	208 (12)	209 (20)	179 (21)	210 (12)	220 (22)	110 (19)	975 (12)	1055 (21)	734 (19)
≥ 80	111 (2)	138 (5)	91 (4)	40 (2)	69 (7)	46 (5)	45 (2)	75 (7)	27 (5)	196 (2)	282 (6)	164 (4)
Gender, No. (%)												
Male	3943 (85)	2011 (69)	1522 (66)	1452 (86)	740 (71)	534 (62)	1546 (86)	700 (69)	375 (63)	6941 (85)	3451 (70)	2431 (64)
Female	704 (15)	893 (31)	798 (34)	229 (14)	306 (29)	333 (38)	256 (14)	308 (31)	216 (37)	1189 (15)	1507 (30)	1347 (36)

Year	2006-2008			2009			2010			2006-2010		
ACS Stratum	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA
Total	**4647**	**2904**	**2320**	**1681**	**1046**	**867**	**1802**	**1008**	**591**	**8130**	**4958**	**3778**
Ethnic group, No. (%)												
Malay	2515 (54)	1323 (46)	981 (42)	932 (55)	483 (46)	372 (43)	1019 (57)	455 (45)	238 (40)	4466 (55)	2261 (46)	1591 (42)
Chinese	958 (21)	710 (24)	627 (27)	318 (19)	230 (22)	216 (25)	338 (19)	221 (22)	138 (23)	1614 (20)	1161 (23)	981 (26)
Indian	874 (19)	726 (25)	641 (28)	331 (20)	277 (26)	258 (30)	297 (16)	289 (29)	194 (33)	1502 (18)	1292 (26)	1093 (29)
Orang Asli	1 (0)	1 (0)	0 (0)	1 (0)	0 (0)	0 (0)	3 (0)	1 (0)	0 (0)	5 (0)	2 (0)	0 (0)
Kadazan	27 (1)	8 (0)	1 (0)	14 (1)	7 (1)	1 (0)	22 (1)	11 (1)	2 (0)	63 (1)	26 (1)	4 (0)
Melanau	1 (0)	0 (0)	1 (0)	2 (0)	0 (0)	0 (0)	3 (0)	0 (0)	0 (0)	6 (0)	0 (0)	1 (0)
Murut	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)	1 (0)	1 (0)	0 (0)
Bajau	40 (1)	11 (0)	2 (0)	10 (1)	3 (0)	2 (0)	28 (2)	7 (1)	1 (0)	78 (1)	21 (0)	5 (0)
Bidayuh	27 (1)	21 (1)	4 (0)	7 (0)	2 (0)	0 (0)	6 (0)	0 (0)	0 (0)	40 (0)	23 (0)	4 (0)
Iban	54 (1)	47 (2)	19 (1)	16 (1)	16 (2)	3 (0)	14 (1)	3 (0)	2 (0)	84 (1)	66 (1)	24 (1)
Sikh	8 (0)	6 (0)	8 (0)	4 (0)	4 (0)	5 (1)	2 (0)	3 (0)	5 (1)	14 (0)	13 (0)	18 (0)
Other Malaysian	48 (1)	27 (1)	25 (1)	12 (1)	12 (1)	6 (1)	33 (2)	9 (1)	4 (1)	93 (1)	48 (1)	35 (1)
Foreigner	94 (2)	24 (1)	11 (0)	33 (2)	12 (1)	4 (0)	37 (2)	8 (1)	7 (1)	164 (2)	44 (1)	22 (1)
OTHER CORONARY RISK FACTORS												
Smoking Status, No. (%)												
Never	1330 (29)	1322 (46)	1074 (46)	517 (31)	485 (46)	475 (55)	546 (30)	463 (46)	308 (52)	2393 (29)	2270 (46)	1857 (49)
Former (quit >30 days)	838 (18)	707 (24)	620 (27)	359 (21)	300 (29)	257 (30)	325 (18)	231 (23)	146 (25)	1522 (19)	1238 (25)	1023 (27)
Current (any tobacco use within last 30 days)	2252 (48)	690 (24)	402 (17)	750 (45)	238 (23)	114 (13)	843 (47)	221 (22)	95 (16)	3845 (47)	1149 (23)	611 (16)
Unknown	227 (5)	185 (6)	224 (10)	55 (3)	23 (2)	21 (2)	88 (5)	93 (9)	42 (7)	370 (5)	301 (6)	287 (8)

Year	2006-2008			2009			2010			2006-2010		
ACS Stratum	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**
Total	**4647**	**2904**	**2320**	**1681**	**1046**	**867**	**1802**	**1008**	**591**	**8130**	**4958**	**3778**
Family history of Premature Cardiovascular Disease, No. (%)												
Yes	531 (11)	332 (11)	272 (12)	186 (11)	79 (8)	72 (8)	221 (12)	108 (11)	101 (17)	938 (12)	519 (10)	445 (12)
No	2669 (57)	1577 (54)	1311 (57)	1049 (62)	586 (56)	572 (66)	1086 (60)	558 (55)	303 (51)	4804 (59)	2721 (55)	2186 (58)
Unknown	1447 (31)	995 (34)	737 (32)	446 (27)	381 (36)	223 (26)	495 (27)	342 (34)	187 (32)	2388 (29)	1718 (35)	1147 (30)
Anthropometric												
Body Mass Index (BMI), kg/m^2												
N	2610	1692	1138	941	490	419	861	333	166	4412	2515	1723
Mean (SD)	25.59 (4.15)	25.43 (4.20)	25.94 (4.60)	25.59 (4.01)	26.5 (5.08)	25.48 (4.46)	25.92 (4.64)	26.09 (4.32)	25.96 (4.92)	25.65 (4.22)	25.72 (4.42)	25.83 (4.60)
Median (min, max)	25.10 (13.15, 60.39)	24.97 (13.85, 59.93)	25.30 (13.28, 51.92)	25.39 (14.52, 48.98)	25.61 (14.73, 59.17)	24.77 (15.43, 65.32)	25.44 (14.24, 64.45)	25.95 (14.46, 46.88)	25.10 (17.48, 47.77)	25.28 (13.15, 64.45)	25.16 (13.85, 59.93)	25.10 (13.28, 65.32)
IQR	4.72	5.01	5.19	5.08	4.91	4.19	5.10	5.35	5.47	4.85	5.06	4.91
BMI, kg/ m^2, No (%)												
<18.5	65 (2)	52 (3)	30 (3)	24 (3)	6 (1)	8 (2)	20 (2)	9 (3)	3 (2)	109 (2)	67 (3)	41 (2)
18.5 – 23.0	588 (23)	430 (25)	243 (21)	218 (23)	83 (17)	102 (24)	194 (23)	68 (20)	40 (24)	1000 (23)	581 (22)	385 (22)
>23.0	1957 (75)	1210 (72)	865 (76)	699 (74)	401 (82)	309 (74)	647 (75)	256 (77)	123 (74)	3303 (75)	1867 (74)	1297 (75)
Waist-Hip Ratio												
N	2205	1207	849	751	246	286	548	150	55	3504	1603	1190
Mean (SD)	.96 (.07)	.96 (.08)	.96 (.09)	.96 (.08)	.96 (.10)	.96 (.08)	.96 (.10)	.97 (.08)	.97 (.07)	.96 (.08)	.96 (.08)	.96 (.09)
Median (min, max)	.96 (.38, 1.63)	.96 (.36, 1.61)	.96 (.46, 1.85)	.96 (.68, 2.02)	.96 (.52, 1.84)	.96 (.52, 1.15)	.95 (.36, 1.58)	.97 (.71, 1.18)	.96 (.83, 1.14)	.96 (.36, 2.02)	.96 (.36, 1.84)	.96 (.46, 1.85)
IQR	0.07	0.07	0.09	0.07	0.09	0.08	0.10	0.10	0.08	0.07	0.07	0.09

Year	2006-2008			2009			2010			2006-2010		
ACS Stratum	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**
Total	**4647**	**2904**	**2320**	**1681**	**1046**	**867**	**1802**	**1008**	**591**	**8130**	**4958**	**3778**
WHR, No. (%)												
Men	1906	876	578	664	185	196	484	127	37	3054	1188	811
≤1.0	1506 (79)	660 (75)	420 (73)	525 (79)	128 (69)	136 (69)	359 (74)	87 (69)	25 (68)	2390 (78)	875 (74)	581 (72)
> 1.0	400 (21)	216 (25)	158 (27)	139 (21)	57 (31)	60 (31)	125 (26)	40 (31)	12 (32)	664 (22)	313 (26)	230 (28)
Women	299	331	271	87	61	90	64	23	18	450	415	379
≤ 0.85	30 (10)	46 (14)	33 (12)	7 (8)	9 (15)	10 (11)	12 (19)	4 (17)	2 (11)	49 (11)	59 (14)	45 (12)
> 0.85	269 (90)	285 (86)	238 (88)	80 (92)	52 (85)	80 (89)	52 (81)	19 (83)	16 (89)	401 (89)	356 (86)	334 (88)
Waist circumference, cm												
N	2322	1286	917	777	259	299	594	168	64	3693	1713	1280
Mean (SD)	88.4 (14.1)	88.4 (14.2)	89.2 (16.1)	88.7 (13.2)	89 (16.1)	90.7 (14.6)	88.4 (17.6)	91.3 (17.5)	89.4 (16.1)	88.4 (14.6)	88.8 (14.9)	89.5 (15.8)
Median (min, max)	89 (36, 153)	89 (36, 162)	91 (36, 152)	89 (36, 192)	90 (36, 162)	90 (39, 170)	90 (36, 181)	93 (36, 162)	92 (40, 115)	89 (36, 192)	89 (36, 162)	91 (36, 170)
IQR	15	14	15	14	17.5	16	16	16	16	15	15	16
Waist circumference, cm, No. (%)												
Men	2004	923	615	687	195	206	526	142	42	3217	1260	863
≤ 90	1087 (54)	526 (57)	302 (49)	386 (56)	99 (51)	93 (45)	272 (52)	62 (44)	16 (38)	1745 (54)	687 (55)	411 (48)
>90	917 (46)	397 (43)	313 (51)	301 (44)	96 (49)	113 (55)	254 (48)	80 (56)	26 (62)	1472 (46)	573 (45)	452 (52)
Women	318	363	302	90	64	93	68	26	22	476	453	417
≤ 80	80 (25)	91 (25)	64 (21)	25 (28)	16 (25)	22 (24)	22 (32)	8 (31)	6 (27)	127 (27)	115 (25)	92 (22)
>80	238 (75)	272 (75)	238 (79)	65 (72)	48 (75)	71 (76)	46 (68)	18 (69)	16 (73)	349 (73)	338 (75)	325 (78)

Year	2006-2008			2009			2010			2006-2010		
ACS Stratum	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**
Total	**4647**	**2904**	**2320**	**1681**	**1046**	**867**	**1802**	**1008**	**591**	**8130**	**4958**	**3778**
CO-MORBIDITY												
Dyslipidaemia, No. (%)												
Yes	1005 (22)	1189 (41)	1085 (47)	502 (30)	398 (38)	348 (40)	499 (28)	356 (35)	235 (40)	2006 (25)	1943 (39)	1668 (44)
No	1630 (35)	844 (29)	604 (26)	723 (43)	469 (45)	394 (45)	731 (41)	446 (44)	252 (43)	3084 (38)	1759 (35)	1250 (33)
Unknown	2012 (43)	871 (30)	631 (27)	456 (27)	179 (17)	125 (14)	572 (32)	206 (20)	104 (18)	3040 (37)	1256 (25)	860 (23)
Hypertension, No. (%)												
Yes	2247 (48)	1994 (69)	1692 (73)	854 (51)	761 (73)	687 (79)	881 (49)	751 (75)	449 (76)	3982 (49)	3506 (71)	2828 (75)
No	1504 (32)	588 (20)	387 (17)	606 (36)	212 (20)	136 (16)	659 (37)	189 (19)	114 (19)	2769 (34)	989 (20)	637 (17)
Unknown	896 (19)	322 (11)	241 (10)	221 (13)	73 (7)	44 (5)	262 (15)	68 (7)	28 (5)	1379 (17)	463 (9)	313 (8)
Diabetes, No. (%)												
Yes	1646 (35)	1427 (49)	1100 (47)	623 (37)	517 (49)	424 (49)	700 (39)	519 (51)	289 (49)	2969 (37)	2463 (50)	1813 (48)
No	1975 (43)	1071 (37)	899 (39)	804 (48)	412 (39)	355 (41)	795 (44)	390 (39)	249 (42)	3574 (44)	1873 (38)	1503 (40)
Unknown	1026 (22)	406 (14)	321 (14)	254 (15)	117 (11)	88 (10)	307 (17)	99 (10)	53 (9)	1587 (20)	622 (13)	462 (12)
Fasting blood glucose, mmol/L												
N	3627	1958	1558	1338	683	714	1320	632	385	6285	3273	2657
Mean (SD)	8.3 (3.8)	7.9 (3.8)	7.5 (3.6)	8.1 (3.6)	7.7 (3.4)	7.2 (3.0)	8.4 (3.8)	7.7 (3.6)	7.1 (2.8)	8.3 (3.8)	7.8 (3.7)	7.3 (3.3)
Median (min, max)	7.0 (3.0, 29.8)	6.6 (3.0, 28.5)	6.0 (3.0, 29.9)	6.9 (3.0, 29.7)	6.5 (3.2, 29.9)	6.2 (3.1, 23.8)	7.2 (3.4, 29.8)	6.6 (3.1, 29.9)	6.1 (3.0, 24.1)	7.0 (3.0, 29.8)	6.5 (3.0, 29.9)	6.1 (3.0, 29.9)
IQR	3.8	3.7	3.5	3.2	3.0	2.2	3.6	3.4	3.0	3.7	3.4	3.0
Myocardial infarction history, No. (%)												
Yes	447 (10)	616 (21)	528 (23)	259 (15)	382 (37)	282 (33)	177 (10)	299 (30)	202 (34)	883 (11)	1297 (26)	1012 (27)
No	3153 (68)	1647 (57)	1285 (55)	1137 (68)	527 (50)	431 (50)	1298 (72)	582 (58)	312 (53)	5588 (69)	2756 (56)	2028 (54)
Unknown	1047 (23)	641 (22)	507 (22)	285 (17)	137 (13)	154 (18)	327 (18)	127 (13)	77 (13)	1659 (20)	905 (18)	738 (20)

Year	2006-2008			2009			2010			2006-2010		
ACS Stratum	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA
Total	**4647**	**2904**	**2320**	**1681**	**1046**	**867**	**1802**	**1008**	**591**	**8130**	**4958**	**3778**
Documented CAD>50% stenosis, No. (%)												
Yes	267 (6)	663 (23)	642 (28)	163 (10)	308 (29)	258 (30)	110 (6)	253 (25)	189 (32)	540 (7)	1224 (25)	1089 (29)
No	2980 (64)	1487 (51)	1052 (45)	1051 (63)	484 (46)	385 (44)	1218 (68)	561 (56)	300 (51)	5249 (65)	2532 (51)	1737 (46)
Unknown	1400 (30)	754 (26)	626 (27)	467 (28)	254 (24)	224 (26)	474 (26)	194 (19)	102 (17)	2341 (29)	1202 (24)	952 (25)
Chronic angina (onset more than 2 weeks ago), No. (%)												
Yes	264 (6)	410 (14)	466 (20)	115 (7)	181 (17)	134 (15)	112 (6)	130 (13)	100 (17)	491 (6)	721 (15)	700 (19)
No	3308 (71)	1920 (66)	1425 (61)	1265 (75)	712 (68)	581 (67)	1358 (75)	767 (76)	426 (72)	5931 (73)	3399 (69)	2432 (64)
Unknown	1075 (23)	574 (20)	429 (18)	301 (18)	153 (15)	152 (18)	332 (18)	111 (11)	65 (11)	1708 (21)	838 (17)	646 (17)
New onset angina (less than 2 weeks ago), No. (%)												
Yes	2234 (48)	1426 (49)	1160 (50)	1055 (63)	712 (68)	662 (76)	954 (53)	687 (68)	410 (69)	4243 (52)	2825 (57)	2232 (59)
No	1532 (33)	1053 (36)	806 (35)	455 (27)	287 (27)	170 (20)	593 (33)	247 (25)	136 (23)	2580 (32)	1587 (32)	1112 (29)
Unknown	881 (19)	425 (15)	354 (15)	171 (10)	47 (4)	35 (4)	255 (14)	74 (7)	45 (8)	1307 (16)	546 (11)	434 (11)
Heart failure, No. (%)												
Yes	138 (3)	330 (11)	202 (9)	64 (4)	133 (13)	74 (9)	65 (4)	157 (16)	69 (12)	267 (3)	620 (13)	345 (9)
No	3503 (75)	2066 (71)	1691 (73)	1413 (84)	825 (79)	705 (81)	1460 (81)	766 (76)	452 (76)	6376 (78)	3657 (74)	2848 (75)
Unknown	1006 (22)	508 (17)	427 (18)	204 (12)	88 (8)	88 (10)	277 (15)	85 (8)	70 (12)	1487 (18)	681 (14)	585 (15)
Chronic lung disease, No. (%)												
Yes	113 (2)	117 (4)	92 (4)	32 (2)	57 (5)	45 (5)	53 (3)	71 (7)	23 (4)	198 (2)	245 (5)	160 (4)
No	3513 (76)	2267 (78)	1800 (78)	1431 (85)	894 (85)	725 (84)	1469 (82)	851 (84)	494 (84)	6413 (79)	4012 (81)	3019 (80)
Unknown	1021 (22)	520 (18)	428 (18)	218 (13)	95 (9)	97 (11)	280 (16)	86 (9)	74 (13)	1519 (19)	701 (14)	599 (16)

Year	2006-2008			2009			2010			2006-2010		
ACS Stratum	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**
Total	**4647**	**2904**	**2320**	**1681**	**1046**	**867**	**1802**	**1008**	**591**	**8130**	**4958**	**3778**
Renal disease, No. (%)												
Yes	152 (3)	336 (12)	155 (7)	57 (3)	133 (13)	63 (7)	54 (3)	145 (14)	59 (10)	263 (3)	614 (12)	277 (7)
No	3466 (75)	2057 (71)	1732 (75)	1354 (81)	754 (72)	589 (68)	1454 (81)	764 (76)	430 (73)	6274 (77)	3575 (72)	2751 (73)
Unknown	1029 (22)	511 (18)	433 (19)	270 (16)	159 (15)	215 (25)	294 (16)	99 (10)	102 (17)	1593 (20)	769 (16)	750 (20)
Cerebrovascular disease, No. (%)												
Yes	128 (3)	132 (5)	95 (4)	39 (2)	43 (4)	34 (4)	38 (2)	51 (5)	39 (7)	205 (3)	226 (5)	168 (4)
No	3510 (76)	2255 (78)	1792 (77)	1375 (82)	823 (79)	619 (71)	1477 (82)	847 (84)	452 (76)	6362 (78)	3925 (79)	2863 (76)
Unknown	1009 (22)	517 (18)	433 (19)	267 (16)	180 (17)	214 (25)	287 (16)	110 (11)	100 (17)	1563 (19)	807 (16)	747 (20)
Peripheral vascular disease, No. (%)												
Yes	14 (0)	46 (2)	20 (1)	7 (0)	9 (1)	4 (0)	4 (0)	13 (1)	4 (1)	25 (0)	68 (1)	28 (1)
No	3590 (77)	2297 (79)	1838 (79)	1383 (82)	834 (80)	634 (73)	1484 (82)	871 (86)	479 (81)	6457 (79)	4002 (81)	2951 (78)
Unknown	1043 (22)	561 (19)	462 (20)	291 (17)	203 (19)	229 (26)	314 (17)	124 (12)	108 (18)	1648 (20)	888 (18)	799 (21)
None of the above, No. (%)												
Yes	178 (4)	37 (1)	20 (1)	57 (3)	11 (1)	2 (0)	59 (3)	15 (1)	3 (1)	294 (4)	63 (1)	25 (1)
No	3883 (84)	2680 (92)	2137 (92)	1489 (89)	1010 (97)	856 (99)	1553 (86)	964 (96)	576 (97)	6925 (85)	4654 (94)	3569 (94)
Unknown	586 (13)	187 (6)	163 (7)	135 (8)	25 (2)	9 (1)	190 (11)	29 (3)	12 (2)	911 (11)	241 (5)	184 (5)
Coronary artery disease, No. (%)												
Yes	2605 (56)	1992 (69)	1748 (75)	1187 (71)	883 (84)	798 (92)	1085 (60)	837 (83)	515 (87)	4877 (60)	3712 (75)	3061 (81)
No	1077 (23)	496 (17)	266 (11)	277 (16)	100 (10)	38 (4)	423 (23)	94 (9)	38 (6)	1777 (22)	690 (14)	342 (9)
Unknown	965 (21)	416 (14)	306 (13)	217 (13)	63 (6)	31 (4)	294 (16)	77 (8)	38 (6)	1476 (18)	556 (11)	375 (10)

'Unknown' includes patients who do not know their co-morbidities and missing data
Coronary artery disease is defined as "Yes" to 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)
Note: Percentage is to the nearest decimal point

Table 2.8 Age-Gender distribution of patients with ACS by ACS stratum, NCVD-ACS Registry, 2006-2010

Year	Gender	Age group	ACS Stratum					
			STEMI		NSTEMI		UA	
			No.	%	No.	%	No.	%
2006-2008	Male	20 - <30	44	1	9	0	5	0
		30 - <40	280	7	68	3	68	4
		40 - <50	1001	25	307	15	244	16
		50 - <60	1328	34	675	34	506	33
		60 - <70	877	22	565	28	411	27
		70 - <80	347	9	319	16	245	16
		>=80	66	2	68	3	43	3
		Total	**3943**	**100**	**2011**	**100**	**1522**	**100**
	Female	20 - <30	2	0	0	0	1	0
		30 - <40	18	3	10	1	11	1
		40 - <50	73	10	53	6	105	13
		50 - <60	154	22	165	18	182	23
		60 - <70	202	29	288	32	251	31
		70 - <80	210	30	307	34	200	25
		>=80	45	6	70	8	48	6
		Total	**704**	**100**	**893**	**100**	**798**	**100**
2009	Male	20 - <30	17	1	3	0	1	0
		30 - <40	124	9	25	3	21	4
		40 - <50	361	25	112	15	87	16
		50 - <60	472	33	232	31	175	33
		60 - <70	315	22	225	30	145	27
		70 - <80	141	10	113	15	87	16
		>=80	22	2	30	4	18	3
		Total	**1452**	**100**	**740**	**100**	**534**	**100**
	Female	20 - <30	0	0	0	0	0	0
		30 - <40	4	2	3	1	5	2
		40 - <50	19	8	12	4	37	11
		50 - <60	57	25	64	21	79	24
		60 - <70	64	28	92	30	92	28
		70 - <80	67	29	96	31	92	28
		>=80	18	8	39	13	28	8
		Total	**229**	**100**	**306**	**100**	**333**	**100**

Year	Gender	Age group	STEMI		NSTEMI		UA	
			No.	%	No.	%	No.	%
2010	Male	20 - <30	22	1	5	1	0	0
		30 - <40	121	8	29	4	20	5
		40 - <50	375	24	106	15	65	17
		50 - <60	543	35	221	32	131	35
		60 - <70	313	20	195	28	94	25
		70 - <80	142	9	111	16	59	16
		>=80	30	2	33	5	6	2
		Total	1546	100	700	100	375	100
	Female	20 - <30	0	0	0	0	0	0
		30 - <40	3	1	9	3	3	1
		40 - <50	21	8	13	4	23	11
		50 - <60	68	27	54	18	71	33
		60 - <70	81	32	81	26	47	22
		70 - <80	68	27	109	35	51	24
		>=80	15	6	42	14	21	10
		Total	256	100	308	100	216	100
2006-2010	Male	20 - <30	83	1	17	0	6	0
		30 - <40	525	8	122	4	109	4
		40 - <50	1737	25	525	15	396	16
		50 - <60	2343	34	1128	33	812	33
		60 - <70	1505	22	985	29	650	27
		70 - <80	630	9	543	16	391	16
		>=80	118	2	131	4	67	3
		Total	6941	100	3451	100	2431	100
	Female	20 - <30	2	0	0	0	1	0
		30 - <40	25	2	22	1	19	1
		40 - <50	113	10	78	5	165	12
		50 - <60	279	23	283	19	332	25
		60 - <70	347	29	461	31	390	29
		70 - <80	345	29	512	34	343	25
		>=80	78	7	151	10	97	7
		Total	1189	100	1507	100	1347	100

Note: Percentage is to the nearest decimal point