CHAPTER 2: PATIENT CHARACTERISTICS

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Summary

1. Malaysian ACS patients were younger compared to western registries, in particular among the STEMI sub-group. Indians and Malays were more likely to present with an ACS event at a younger age.

2. The prevalence of hypertension, diabetes and dyslipidaemia remained consistently high over the three years period.

3. Patients with NSTEMI/UA had higher prevalence of hypertension, diabetes and dyslipidaemia compared to STEMI whereas smoking was higher in STEMI.

Introduction

Data from 14,763 patients admitted between 2011 and 2013 in 19 source data providers participating in the National Cardiovascular Disease Database – Acute Coronary Syndrome Registry was analysed.

Age, Gender, Ethnic and Body Mass Index

The majority of patients who presented with ACS were male, and the prevalence appeared to be rising – 77.8%, 79.0% and 79.4%, in 2011, 2012 and 2013, respectively. [Table 2.1]

The mean age of these patients was 58.5 years, which was similar in the years 2011, 2012 and 2013. The overall proportion of patients under the age of 50 years presenting with ACS remained high at 23.2%. When analysed by gender, 27.5% of male patients and 11.6% of female patients were under the age of 50 years. [Table 2.1]

In the total cohort of 14,763 patients, 50.6% were Malay, 21.5% were Chinese, and 19.6% were Indian. Non-Malaysians (foreigners) accounted for 2.6% of the entire cohort. We analysed the data of the three largest ethnic groups. Amongst Malays, 27.7% of male patients and 13.6% of female patients were under the age of 50 years. Amongst Chinese, 18.6% of male patients, and 5.9% of female patients were under the age of 50 years; amongst Indians, 29.2% of male patients, and 12.4% of female patients were under the age of 50 years. [Table 2.1]

The mean body mass index (BMI) of these patients was 26.1 kg/m^2. There was an increasing trend in the mean BMI – 25.9 kg/m^2, 25.9 kg/m^2 and 26.3 kg/m^2 in 2011, 2012 and 2013, respectively. The proportion of patients with BMI > 23.0 kg/m^2 demonstrated a corresponding increase: 75.6%, 75.0% and 78.2% in 2011, 2012 and 2013, respectively. [Table 2.1]

Cardiovascular risk factors

The prevalence of pre-morbid hypertension, diabetes and dyslipidaemia in this cohort were 65.0%, 45.8% and 37.4%, respectively. The prevalence of these established cardiovascular risk factors (CVRF) remained consistently high during the 3-year period. Of the other CVRF among these patients, a prior history of myocardial infarction (MI) was noted in 19.2%, documented CAD in 21.1%, chronic angina in 9.9%, new onset angina in 58.2%, a prior history of heart failure in 7.2% and cerebrovascular disease in 3.8%. The prevalence of renal disease was 7.8%, chronic lung disease was 3.2% and peripheral vascular disease was 0.8%. [Table 2.1]

Of the total cohort, 77.6% had a positive history of coronary artery disease, with at least one previous history of MI, documented CAD, chronic angina or new onset angina. [Table 2.1]

The prevalence of smoking was high, especially in those under the age of 50 years presenting with ACS: 38.2% were males and 21.0% were females. [Table 2.4.6]

The prevalence of the following risk factors in patients under the age of 50 years were: diabetes - 19.0% in males, 9.4% in females; hypertension – 19.7% in males, 8.4% in females; dyslipidaemia – 21.0% in males, 9.4% in females; and family history of premature cardiovascular disease – 35.9% in males, 18.3% in females. [Table 2.4.2, 2.4.3, 2.4.4 & 2.4.5]

Clinical presentation
The proportion of patients presenting with the different clinical presentations of ACS were as follows: 50.8% with STEMI, 26.0% with NSTEMI and 23.2% with unstable angina (UA). [Table 2.6]

The mean age of patients presenting with STEMI was 56.2 years, NSTEMI was 60.8 years and UA was 60.8 years. The proportion of patients under the age of 50 years was 30.2%, 17.6% and 18.3% in the STEMI, NSTEMI and UA groups, respectively. The proportion of male gender was 85.2%, 75.0% and 69.0% in the STEMI, NSTEMI and UA groups, respectively. Current smokers accounted for 51.0%, 27.2% and 21.0% in the STEMI, NSTEMI and UA groups, respectively. [Table 2.7]

The prevalence of pre-morbid dyslipidaemia was higher in NSTEMI (42.8%) and UA (49.2%) compared to STEMI (28.2%). Similarly, the prevalence of pre-morbid hypertension was higher in NSTEMI (71.6%) and UA (77.0%) compared to STEMI (55.6%). [Table 2.7]

The same finding was noted for pre-morbid diabetes which was higher in NSTEMI (52.8%) and UA (51.4%) compared to STEMI (39.3%). The prevalence of a previous history of MI, previously documented CAD, history of chronic angina; new onset angina and heart failure were higher in NSTEMI/UA compared to STEMI.

Conclusion
Patients who presented with ACS in Malaysia between 2011 and 2013 were relatively younger compared to GRACE registry[1,2]. The prevalence of pre-morbid cardiovascular risk factors in this population remained high. However, patients with STEMI had lower prevalence of established CVRF compared to those with NSTEMI and UA, probably related to a comparatively younger mean age of presentation. Malay and Indian patients were more likely to present with an ACS event at a younger age compared to Chinese patients.

Initiatives to improve the management of cardiovascular risk factors at the acute stage of ACS clinical presentation are warranted, with the aim of improving clinical outcomes of these patients.

References

1. Global Registry for Acute Coronary Effect – GRACE. Available at http://www.outcomes-umassmed.org/grace/. Accessed on February 2015.

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; 162(2):291-9.

Table 2.1 Summary of characteristics for patients with ACS, NCVD-ACS Registry, 2011-2013

Year	2011	2012	2013	2011-2013
Total	**4,047**	**4,589**	**6,127**	**14,763**
DEMOGRAPHICS				
Age, years				
N	4,047	4,589	6,127	14,763
Mean (SD)	58.6 (12.3)	58.5 (12.3)	58.4 (12.0)	58.5 (12.2)
Median (min, max)	58.2 (21.1, 98.4)	58.5 (20.3, 100.9)	58.0 (20.0, 101.9)	58.2 (20.0, 101.9)
IQR	17.1	16.7	16.1	16.6
Age group, No. (%)				
20 - <30	44 (1.0)	44 (1.0)	53 (0.8)	141 (1.0)
30 - <40	200 (5.0)	263 (5.7)	354 (5.8)	817 (5.6)
40 - <50	749 (18.6)	824 (18.0)	1,033 (16.8)	2,606 (17.6)
50 - <60	1,250 (30.8)	1,387 (30.2)	2,011 (32.8)	4,648 (31.4)
60 - <70	999 (24.6)	1,207 (26.3)	1,558 (25.4)	3,764 (25.4)
70 - <80	658 (16.3)	687 (15.0)	915 (15.0)	2,260 (15.4)
≥ 80	147 (3.7)	177 (3.8)	203 (3.4)	527 (3.6)
Gender, No. (%)				
Male	3,145 (77.8)	3,628 (79.0)	4,865 (79.4)	11,638 (78.8)
Female	902 (22.2)	961 (21.0)	1,262 (20.6)	3,125 (21.2)
Ethnic group, No. (%)				
Malay	1,991 (49.2)	2,292 (50.0)	3,176 (51.8)	7,459 (50.6)
Chinese	868 (21.4)	993 (21.6)	1,313 (21.5)	3,174 (21.5)
Indian	897 (22.3)	883 (19.2)	1,124 (18.5)	2,904 (19.6)
Orang Asli	2 (0.0)	1 (0.0)	5 (0.0)	8 (0.0)
Kadazan	33 (0.8)	37 (0.8)	65 (1.0)	135 (1.0)
Melanau	4 (0.0)	1 (0.0)	5 (0.0)	10 (0.0)
Murut	1 (0.0)	4 (0.0)	6 (0.0)	11 (0.0)
Bajau	30 (0.8)	35 (0.8)	48 (0.8)	113 (0.8)
Bidayuh	17 (0.5)	24 (0.6)	39 (0.6)	80 (0.6)
Iban	42 (1.0)	70 (1.6)	72 (1.2)	184 (1.3)
Other Malaysian	70 (1.8)	117 (2.6)	117 (2.0)	304 (2.0)
Foreigner	92 (2.2)	132 (2.8)	157 (2.6)	381 (2.6)
OTHER CORONARY RISK FACTORS				
Smoking, No. (%)				
Never	1,533 (39.2)	1,687 (38.0)	2,171 (36.2)	5,391 (37.5)
Former (quit >30 days)	835 (21.4)	942 (21.3)	1,282 (21.4)	3,059 (21.4)
Current (any tobacco use within last 30 days)	1,469 (37.6)	1,679 (37.8)	2,295 (38.2)	5,443 (38.0)
Not Available	70 (1.8)	123 (2.9)	252 (4.2)	445 (3.1)
Missing	140	158	127	425

Year	2011	2012	2013	2011-2013
Total	**4,047**	**4,589**	**6,127**	**14,763**
Family history of Premature CVD, No. (%)				
Yes	525 (14.5)	554 (13.2)	696 (12.4)	1,775 (13.2)
No	2,518 (69.0)	2,805 (67.0)	4,005 (70.8)	9,328 (69.2)
Unknown	601 (16.5)	830 (19.8)	953 (16.8)	2,384 (17.6)
Missing	403	400	473	1,276
ANTHROPOMETRICS				
Body Mass Index (BMI), kgm^{-2}				
N	1,307	1,690	2,173	5,170
Mean (SD)	25.9 (4.3)	25.9 (4.1)	26.3 (4.4)	26.1 (4.3)
Median (min, max)	25.5 (14.7, 49.8)	25.6 (15.6, 48.1)	26.0 (14.6, 47.9)	25.7 (14.6, 49.8)
IQR	4.9	5.3	5.6	5.3
Missing	2,740	2,899	3,954	9,593
BMI, kgm^{-2}, No. (%)				
<18.5	34 (2.6)	47 (2.7)	48 (2.2)	129 (2.5)
18.5 - 23	285 (21.8)	377 (22.3)	424 (19.6)	1,086 (21.0)
>23	988 (75.6)	1,266 (75.0)	1,701 (78.2)	3,955 (76.5)
Missing	2,740	2,899	3,954	9,593
Waist Hip Ratio (WHR)				
N	795	760	1177	2732
Mean (SD)	1.0 (0.2)	1.0 (0.1)	1.0 (0.1)	1.0 (0.2)
Median (min, max)	1.0 (0.7, 2.5)	1.0 (0.7, 2.0)	1.0 (0.7, 2.9)	1.0 (0.7, 2.9)
IQR	0.1	0.1	0.1	0.1
Missing	3,252	3,829	4,950	12,031
WHR, No. (%)				
Men	662	639	990	2,291
≤1.0	489 (73.8)	458 (71.6)	718 (72.6)	1,665 (72.6)
>1.0	173 (26.2)	181 (28.4)	272 (27.4)	626 (27.4)
Women	133	121	187	441
≤0.85	17 (12.8)	17 (14.0)	21 (11.2)	55 (12.4)
>0.85	116 (87.2)	104 (86.0)	166 (88.8)	386 (87.6)

Year	2011	2012	2013	2011-2013
Total	**4,047**	**4,589**	**6,127**	**14,763**
Waist circumference, cm				
N	687	706	1,075	2,468
Mean (SD)	93.4 (10.0)	92.6 (10.8)	92.5 (10.9)	92.7 (10.6)
Median (min, max)	93.0 (70.0, 129.0)	91.5 (70.0, 124.0)	92.0 (70.0, 130.0)	92.0 (70.0, 130.0)
IQR	12.0	15.0	14.0	14.0
Not Available	2,687 (79.6)	3,086 (81.4)	4,008 (78.8)	9,781 (79.8)
Missing	673	797	1,044	2,514
Waist circumference, cm, No. (%)				
Men	2,622	3,027	4,055	9,704
≤90	239 (9.1)	281 (9.2)	407 (10.0)	927 (9.6)
>90	340 (13.0)	318 (10.6)	494 (12.2)	1,152 (11.8)
Not Available	2,043 (77.9)	2,428 (80.2)	3,154 (77.8)	7,652 (78.6)
Women	752	765	1,028	2,545
≤80	15 (2.0)	23 (3.0)	33 (3.2)	71 (2.8)
>80	93 (12.4)	84 (11.0)	141 (13.8)	318 (12.4)
Not Available	644 (85.6)	658 (86.0)	854 (83.0)	2,156 (84.8)
CO-MORBIDITY				
Dyslipidaemia, No. (%)				
Yes	1,459 (39.2)	1,538 (36.4)	2,103 (37.0)	5,100 (37.4)
No	1,785 (48.0)	2,165 (51.4)	2,970 (52.2)	6,920 (50.8)
Unknown	472 (12.8)	513 (12.2)	608 (10.8)	1,593 (11.8)
Missing	331	373	446	1,150
Hypertension, No. (%)				
Yes	2,547 (67.0)	2,797 (65.6)	3,630 (63.2)	8,974 (65.0)
No	1,106 (29.2)	1,259 (29.6)	1,857 (32.4)	4,222 (30.6)
Unknown	145 (3.8)	202 (4.8)	258 (4.4)	605 (4.4)
Missing	249	331	382	962
Diabetes, No. (%)				
Yes	1,742 (46.2)	1,974 (46.6)	2,568 (45.0)	6,284 (45.8)
No	1,821 (48.4)	2,023 (47.6)	2,794 (49.0)	6,638 (48.4)
Unknown	200 (5.4)	246 (5.8)	346 (6.0)	792 (5.8)
Missing	284	346	419	1,049

Year	2011	2012	2013	2011-2013
Total	**4,047**	**4,589**	**6,127**	**14,763**
Fasting blood glucose, mmol/L				
N	2,902	3,170	4,201	10,273
Mean (SD)	8.2 (4.2)	8.2 (4.0)	8.4 (4.3)	8.3 (4.2)
Median (min, max)	6.8 (3.0, 49.0)	6.9 (3.0, 44.4)	6.9 (3.0, 49.9)	6.9 (3.0, 49.9)
IQR	3.8	3.8	4.1	3.9
Not Done	886 (23.4)	1,129 (26.2)	1,292 (23.6)	3,307 (24.4)
Missing	259	290	634	1,183
Myocardial infarction history, No. (%)				
Yes	805 (22.0)	873 (20.8)	922 (16.2)	2,600 (19.2)
No	2,557 (70.0)	2,903 (69.5)	4,195 (74.0)	9,655 (71.5)
Unknown	294 (8.0)	403 (9.7)	557 (9.8)	1,254 (9.3)
Missing	391	410	453	1,254
*Documented CAD, No. (%)				
Yes	628 (17.3)	844 (20.2)	1,380 (24.4)	2,852 (21.2)
No	2,484 (66.2)	2,767 (66.2)	3,760 (66.4)	9,011 (66.8)
Unknown	519 (14.3)	569 (13.6)	526 (9.2)	1,614 (12.0)
Missing	416	409	461	1,286
Chronic angina (onset more than 2 weeks ago), No. (%)				
Yes	413 (11.4)	400 (9.6)	530 (9.4)	1,343 (9.9)
No	2,981 (81.6)	3,445 (82.4)	4,743 (84.0)	11,169 (83.0)
Unknown	255 (7.0)	333 (8.0)	369 (6.6)	957 (7.1)
Missing	398	411	485	1,294
New onset angina (less than 2 weeks), No. (%)				
Yes	2,271 (61.4)	2,413 (57.6)	3,216 (56.4)	7,900 (58.2)
No	1,309 (35.4)	1,597 (38.2)	2,195 (38.4)	5,101 (37.5)
Unknown	122 (3.2)	175 (4.2)	292 (5.2)	589 (4.3)
Missing	345	404	424	1,173
Heart failure, No. (%)				
Yes	312 (8.6)	363 (8.6)	295 (5.3)	970 (7.2)
No	3,162 (87.0)	3,586 (85.6)	5,006 (88.7)	11,754 (87.2)
Unknown	162 (4.4)	240 (5.8)	344 (6.0)	746 (5.6)
Missing	411	400	482	1,293

Year	2011	2012	2013	2011-2013
Total	**4,047**	**4,589**	**6,127**	**14,763**
Chronic lung disease, No. (%)				
Yes	129 (3.6)	120 (2.8)	176 (3.1)	425 (3.2)
No	3,318 (91.4)	3,828 (91.4)	5,129 (90.9)	12,275 (91.2)
Unknown	180 (5.0)	244 (5.8)	337 (6.0)	761 (5.6)
Missing	420	397	485	1,302
*Renal disease, No. (%)				
Yes	298 (8.2)	301 (7.2)	444 (7.8)	1,043 (7.8)
No	3,182 (87.0)	3,652 (87.2)	4,891 (86.6)	11,725 (86.8)
Unknown	174 (4.8)	235 (5.6)	317 (5.6)	726 (5.4)
Missing	393	401	475	1,269
Cerebrovascular disease, No. (%)				
Yes	155 (4.2)	153 (3.6)	201 (3.5)	509 (3.8)
No	3,308 (91.3)	3,797 (90.8)	5,114 (90.7)	12,219 (90.8)
Unknown	162 (4.5)	232 (5.6)	322 (5.8)	716 (5.4)
Missing	422	407	490	1,319
Peripheral vascular disease, No. (%)				
Yes	40 (1.2)	30 (0.8)	34 (0.6)	104 (0.8)
No	3,378 (93.6)	3,899 (93.5)	5,249 (93.4)	12,526 (93.5)
Unknown	188 (5.2)	240 (5.7)	336 (6.0)	764 (5.7)
Missing	441	420	508	1,369
None of the above, No. (%)				
Yes	185 (4.6)	279 (6.0)	301 (5.0)	765 (5.2)
No	3,862 (95.4)	4,310 (94.0)	5,826 (95.0)	13,998 (94.8)
**Coronary artery disease, No. (%)				
Yes	2,828 (79.4)	3,019 (76.6)	4,170 (77.0)	10,017 (77.6)
No	736 (20.6)	919 (23.4)	1,252 (23.0)	2,907 (22.4)

Definition is different in CRF version 2013

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

Note: 'Unknown' includes patients who do not know their co-morbidities status

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Table 2.2 Distribution of patients with ACS by Source Data Providers, NCVD-ACS Registry, 2011-2013

Year	2011		2012		2013		2011-2013	
	No.	%	No.	%	No.	%	No.	%
Total								
Source Data Provider								
Hospital Pulau Pinang	626	15.4	775	16.9	1,173	19.2	2,574	17.4
Hospital Serdang	505	12.4	508	11.0	830	13.6	1,843	12.4
Hospital Sultanah Aminah	428	10.6	417	9.1	627	10.2	1,472	10.0
Institut Jantung Negara	281	7.0	413	9.0	477	7.8	1,171	8.0
Hospital Tengku Ampuan Afzan	274	6.8	330	7.2	547	9.0	1,151	7.8
Pusat Jantung Hospital Umum Sarawak	220	5.4	378	8.2	454	7.4	1,052	7.2
Hospital Kuala Lumpur	302	7.4	371	8.1	317	5.2	990	6.8
Pusat Perubatan Universiti Malaya	381	9.4	267	5.8	198	3.2	846	5.8
Hospital Queen Elizabeth II	144	3.6	244	5.4	315	5.1	703	4.8
Hospital Sultanah Bahiyah	114	2.8	250	5.4	331	5.4	695	4.7
Hospital Raja Permaisuri Bainun	200	5.0	219	4.8	207	3.4	626	4.2
Hospital Sultanah Nur Zahirah	83	2.0	72	1.6	212	3.4	367	2.4
Hospital Tengku Ampuan Rahimah	104	2.6	95	2.1	106	1.8	305	2.0
Hospital Melaka	207	5.2	1	0.0	87	1.4	295	1.9
Hospital Tuanku Fauziah	83	2.0	85	1.9	107	1.8	275	1.8
Hospital Ampang	32	0.8	104	2.3	63	0.9	199	1.4
Hospital Raja Perempuan Zainab II	17	0.4	38	0.8	67	1.0	122	0.8
Hospital Tuanku Ja'afar	22	0.6	20	0.4	9	0.2	51	0.4
Hospital Queen Elizabeth I	24	0.6	2	0.0	0	0.0	26	0.2
TOTAL	4,047	100.0	4,589	100.0	6,127	100.0	14,763	100.0

Note: Each SDP started to contribute data at different time period

Table 2.3 Age-gender distribution of patients with ACS, NCVD-ACS Registry, 2011-2013

Age group	2011 Total no. of patients = 4,047		2012 Total no. of patients = 4,589		2013 Total no. of patients = 6,127		2011-2013 Total no. of patients = 14,763	
	Male	Female	Male	Female	Male	Female	Male	Female
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
20-<30	41 (1.5)	3 (0.4)	40 (1.2)	4 (0.4)	51 (1.0)	2 (0.2)	132 (1.2)	9 (0.2)
30-<40	191 (6.0)	9 (1.0)	246 (6.8)	17 (1.8)	323 (6.6)	31 (2.4)	760 (6.6)	57 (1.8)
40-<50	660 (21.0)	89 (9.8)	744 (20.6)	80 (8.4)	903 (18.6)	130 (10.4)	2307 (19.7)	299 (9.6)
50-<60	1,059 (33.6)	191 (21.2)	1,169 (32.2)	218 (22.6)	1,696 (34.8)	315 (25.0)	3,924 (33.7)	724 (23.2)
60-<70	719 (22.9)	280 (31.0)	910 (25.0)	297 (31.0)	1,198 (24.6)	360 (28.5)	2,827 (24.2)	937 (30.0)
70-<80	399 (12.6)	259 (28.8)	429 (11.8)	258 (26.8)	581 (12.0)	334 (26.3)	1,409 (12.2)	851 (27.2)
≥80	76 (2.4)	71 (7.8)	90 (2.4)	87 (9.0)	113 (2.4)	90 (7.2)	279 (2.4)	248 (8.0)
Total	3,145 (100.0)	902 (100.0)	3,628 (100.0)	961 (100.0)	4,865 (100.0)	1,262 (100.0)	11,638 (100.0)	3,125 (100.0)

Table 2.4.1 Age-gender distribution of patients with ACS by ethnic group, NCVD-ACS Registry, 2011-2013

Ethnic group

Gender	Age group	2011 Malay No. (%)	2011 Chinese No. (%)	2011 Indian No. (%)	2011 Others## No. (%)	2012 Malay No. (%)	2012 Chinese No. (%)	2012 Indian No. (%)	2012 Others## No. (%)	2013 Malay No. (%)	2013 Chinese No. (%)	2013 Indian No. (%)	2013 Others## No. (%)	2011-2013 Malay No. (%)	2011-2013 Chinese No. (%)	2011-2013 Indian No. (%)	2011-2013 Others## No. (%)
Male	20 - <30	20 (1.3)	1 (0.2)	8 (1.2)	12 (5.0)	21 (1.2)	1 (0.2)	10 (1.4)	8 (2.2)	27 (1.0)	3 (0.2)	11 (1.4)	10 (2.2)	68 (1.2)	5 (0.2)	29 (1.4)	30 (2.8)
	30 - <40	98 (6.0)	21 (3.2)	41 (6.2)	31 (13.0)	112 (6.0)	37 (5.2)	48 (7.3)	49 (13.6)	175 (6.8)	28 (2.8)	49 (6.0)	71 (16.0)	385 (6.4)	86 (3.6)	138 (6.4)	151 (14.6)
	40 - <50	348 (21.7)	98 (15.4)	146 (22.3)	68 (28.4)	391 (20.8)	110 (15.2)	143 (21.4)	100 (28.0)	486 (18.8)	145 (14.2)	168 (20.6)	104 (23.4)	1225 (20.1)	353 (14.8)	457 (21.4)	272 (26.2)
	50 - <60	576 (35.8)	180 (28.2)	244 (37.3)	59 (24.6)	640 (34.0)	200 (27.8)	229 (34.3)	100 (28.0)	914 (35.2)	321 (31.6)	309 (37.8)	152 (34.2)	2130 (35.0)	701 (29.6)	782 (36.5)	311 (29.8)
	60 - <70	349 (21.6)	192 (30.0)	138 (21.0)	40 (16.8)	474 (25.2)	207 (28.6)	161 (24.0)	68 (19.0)	664 (25.6)	283 (28.0)	181 (22.2)	70 (15.8)	1487 (24.4)	682 (28.8)	480 (22.4)	178 (17.0)
	70 - <80	193 (12.0)	126 (19.8)	58 (8.8)	22 (9.2)	213 (11.4)	126 (17.4)	63 (9.4)	27 (7.6)	285 (11.0)	182 (18.0)	84 (10.2)	30 (6.8)	691 (11.3)	434 (18.2)	205 (9.5)	79 (7.6)
	≥80	27 (1.6)	21 (3.2)	21 (3.2)	7 (3.0)	28 (1.4)	41 (5.6)	15 (2.2)	6 (1.6)	39 (1.6)	52 (5.2)	15 (1.8)	7 (1.6)	94 (1.6)	114 (4.8)	51 (2.4)	20 (2.0)
	Total	**1,611 (100)**	**639 (100)**	**656 (100)**	**239 (100)**	**1,879 (100)**	**722 (100)**	**669 (100)**	**358 (100)**	**2,590 (100)**	**1,014 (100)**	**817 (100)**	**444 (100)**	**6,080 (100)**	**2,375 (100)**	**2,142 (100)**	**1,041 (100)**
Female	20 - <30	1 (0.2)	0 (0.0)	1 (0.4)	1 (2.0)	3 (0.8)	0 (0.0)	0 (0.0)	1 (1.6)	2 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	6 (0.4)	0 (0.0)	1 (0.2)	2 (1.0)
	30 - <40	7 (1.8)	0 (0.0)	1 (0.4)	1 (2.0)	9 (2.2)	2 (0.7)	5 (2.4)	1 (1.6)	16 (2.8)	1 (0.4)	10 (3.1)	4 (5.8)	32 (2.4)	3 (0.4)	16 (2.0)	6 (3.3)
	40 - <50	42 (11.0)	12 (5.2)	27 (11.3)	8 (15.4)	34 (8.2)	21 (7.8)	18 (8.4)	7 (11.1)	72 (12.2)	11 (3.6)	33 (10.7)	14 (20.0)	148 (10.8)	44 (5.5)	78 (10.2)	29 (15.6)
	50 - <60	80 (21.0)	29 (12.6)	69 (28.6)	13 (25.0)	100 (24.2)	34 (12.6)	65 (30.4)	19 (30.2)	167 (28.4)	44 (14.8)	82 (26.8)	22 (31.3)	347 (25.2)	107 (13.4)	216 (28.4)	54 (29.3)
	60 - <70	126 (33.3)	66 (28.8)	73 (30.2)	15 (28.8)	140 (33.9)	78 (28.7)	60 (28.0)	19 (30.2)	168 (28.6)	84 (28.0)	89 (29.0)	19 (27.2)	434 (31.4)	228 (28.5)	222 (29.2)	53 (28.6)
	70 - <80	101 (26.7)	90 (39.4)	56 (23.3)	12 (23.0)	101 (24.4)	91 (33.6)	52 (24.2)	14 (22.1)	132 (22.6)	115 (38.4)	81 (26.4)	6 (8.6)	334 (24.2)	296 (37.0)	189 (24.8)	32 (17.3)
	≥80	23 (6.0)	32 (14.0)	14 (5.8)	2 (3.8)	26 (6.3)	45 (16.6)	14 (6.6)	2 (3.2)	29 (5.0)	44 (14.8)	12 (4.0)	5 (7.1)	78 (5.6)	121 (15.2)	40 (5.2)	9 (4.9)
	Total	**380 (100)**	**229 (100)**	**241 (100)**	**52 (100)**	**413 (100)**	**271 (100)**	**214 (100)**	**63 (100)**	**586 (100)**	**299 (100)**	**307 (100)**	**70 (100)**	**1,379 (100)**	**799 (100)**	**762 (100)**	**185 (100)**

'Others' includes Orang Asli, Kadazan, Melanau, Murut, Bajau, Bidayuh, Iban, other Malaysian and Foreigner

Table 2.4.2 Age-gender distribution of patients with ACS by pre-morbid diabetes, NCVD-ACS Registry, 2011-2013

Gender	Age group	Diabetes											
		2011			2012			2013			2011-2013		
		Diabetic	Non-diabetic	Unknown	Diabetic	Non-diabetic	Unknown	Diabetic	Non-diabetic	Unknown	Diabetic	Non-diabetic	Unknown
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male	20 - <30	2 (0.2)	30 (2.0)	5 (3.0)	1 (0.0)	29 (1.7)	6 (2.8)	5 (0.2)	34 (1.4)	5 (1.7)	8 (0.2)	93 (1.6)	16 (2.5)
	30 - <40	49 (4.0)	110 (7.2)	13 (7.8)	55 (3.8)	122 (7.2)	24 (11.4)	64 (3.4)	194 (8.3)	29 (9.8)	168 (3.8)	426 (7.6)	66 (9.8)
	40 - <50	188 (15.6)	357 (23.5)	45 (27.0)	232 (16.5)	391 (23.0)	54 (25.6)	252 (13.6)	483 (20.6)	67 (22.4)	672 (15.0)	1,231 (22.2)	166 (24.6)
	50 - <60	430 (35.6)	494 (32.6)	51 (30.5)	487 (34.3)	544 (32.0)	59 (28.0)	710 (38.3)	784 (33.5)	88 (29.6)	1,627 (36.2)	1,822 (32.8)	198 (29.2)
	60 - <70	358 (29.6)	284 (18.7)	29 (17.3)	426 (30.0)	378 (22.2)	41 (19.4)	548 (29.5)	518 (22.0)	67 (22.5)	1,332 (29.6)	1,180 (21.2)	137 (20.3)
	70 - <80	152 (12.6)	199 (13.2)	22 (13.2)	180 (12.6)	201 (11.7)	23 (11.0)	243 (13.0)	271 (11.6)	34 (11.4)	575 (12.8)	671 (12.0)	79 (11.6)
	≥80	29 (2.4)	41 (2.8)	2 (1.2)	39 (2.8)	37 (2.2)	4 (1.8)	38 (2.0)	63 (2.6)	8 (2.6)	106 (2.4)	141 (2.6)	14 (2.0)
	Total	1,208 (100)	1,515 (100)	167 (100)	1,420 (100)	1,702 (100)	211 (100)	1,860 (100)	2,347 (100)	298 (100)	4,488 (100)	5,564 (100)	676 (100)
Female	20 - <30	0 (0)	3 (1.0)	0 (0)	0 (0)	3 (1.0)	1 (2.8)	0 (0)	2 (0.4)	0 (0)	0 (0)	8 (0.8)	1 (0.8)
	30 - <40	5 (1.0)	3 (1.0)	0 (0)	8 (1.4)	3 (1.0)	1 (2.8)	9 (1.2)	17 (3.8)	2 (4.2)	22 (1.2)	23 (2.2)	3 (2.6)
	40 - <50	47 (8.8)	35 (11.4)	1 (3.0)	36 (6.4)	28 (8.7)	6 (17.2)	63 (8.8)	51 (11.4)	9 (18.8)	146 (8.2)	114 (10.6)	16 (13.8)
	50 - <60	125 (23.4)	54 (17.6)	6 (18.2)	134 (24.3)	71 (22.1)	9 (25.7)	185 (26.3)	99 (22.2)	12 (25.0)	444 (24.7)	224 (20.8)	27 (23.3)
	60 - <70	172 (32.2)	85 (27.8)	12 (36.4)	192 (34.6)	82 (25.5)	6 (17.2)	235 (33.3)	98 (22.0)	14 (29.2)	599 (33.3)	265 (24.6)	32 (27.6)
	70 - <80	158 (29.6)	88 (28.8)	9 (27.2)	139 (25.0)	99 (30.7)	9 (25.7)	183 (25.8)	132 (29.5)	8 (16.6)	480 (26.8)	319 (29.8)	26 (22.5)
	≥80	27 (5.0)	38 (12.4)	5 (15.2)	45 (8.3)	35 (11.0)	3 (8.6)	33 (4.6)	48 (10.7)	3 (6.2)	105 (5.8)	121 (11.2)	11 (9.4)
	Total	534 (100)	306 (100)	33 (100)	554 (100)	321 (100)	35 (100)	708 (100)	447 (100)	48 (100)	1,796 (100)	1,074 (100)	116 (100)

Table 2.4.3 Age-gender distribution of patients with ACS by pre-morbid hypertension, NCVD-ACS Registry, 2011-2013

Gender	Age group	Hypertension											
		2011			2012			2013			2011-2013		
		Hypertensive	Non-Hypertensive	Unknown	Hypertensive	Non-Hypertensive	Unknown	Hypertensive	Non-Hypertensive	Unknown	Hypertensive	Non-Hypertensive	Unknown
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male	20 - <30	8 (0.4)	24 (2.4)	5 (3.8)	4 (0.2)	26 (2.4)	6 (3.4)	7 (0.2)	31 (2.0)	6 (2.5)	19 (0.3)	81 (2.2)	17 (3.2)
	30 - <40	65 (3.7)	94 (9.8)	11 (8.5)	73 (3.6)	109 (9.8)	20 (11.2)	99 (3.7)	165 (10.2)	25 (11.0)	237 (3.7)	368 (10.0)	56 (10.3)
	40 - <50	285 (15.6)	272 (28.2)	37 (28.4)	320 (15.6)	307 (27.5)	51 (28.3)	386 (14.3)	374 (23.2)	52 (22.8)	991 (15.0)	953 (25.8)	140 (26.0)
	50 - <60	618 (33.8)	327 (33.8)	46 (35.5)	668 (32.6)	368 (33.0)	54 (30.0)	946 (35.0)	572 (35.6)	79 (34.3)	2,232 (34.0)	1,267 (34.4)	179 (33.2)
	60 - <70	516 (28.3)	149 (15.4)	17 (13.0)	614 (30.0)	206 (18.3)	31 (17.2)	777 (28.8)	319 (19.8)	41 (18.0)	1,907 (29.0)	674 (18.2)	89 (16.5)
	70 - <80	277 (15.2)	87 (9.0)	12 (9.2)	309 (15.0)	82 (7.4)	15 (8.4)	406 (15.0)	124 (7.8)	21 (9.2)	992 (15.0)	293 (8.0)	48 (9.0)
	≥80	56 (3.0)	14 (1.4)	2 (1.6)	60 (3.0)	18 (1.6)	3 (1.5)	83 (3.0)	22 (1.4)	5 (2.2)	199 (3.0)	54 (1.4)	10 (1.8)
	Total	**1,825 (100)**	**967 (100)**	**130 (100)**	**2,048 (100)**	**1,116 (100)**	**180 (100)**	**2,704 (100)**	**1,607 (100)**	**229 (100)**	**6,577 (100)**	**3,690 (100)**	**539 (100)**
Female	20 - <30	1 (0.2)	2 (1.5)	0 (0)	2 (0.2)	2 (1.4)	0 (0)	0 (0)	2 (0.8)	0 (0)	3 (0.2)	6 (1.2)	0 (0)
	30 - <40	4 (0.6)	4 (2.8)	0 (0)	8 (1.0)	3 (2.0)	1 (4.6)	8 (0.8)	17 (6.8)	3 (10.4)	20 (0.8)	24 (4.6)	4 (6.0)
	40 - <50	54 (7.4)	27 (19.5)	2 (13.4)	46 (6.3)	20 (14.0)	5 (22.8)	78 (8.4)	39 (15.6)	7 (24.2)	178 (7.4)	86 (16.2)	14 (21.3)
	50 - <60	151 (21.0)	34 (24.4)	1 (6.6)	171 (22.8)	35 (24.5)	6 (27.2)	218 (23.6)	71 (28.4)	6 (20.6)	540 (22.5)	140 (26.3)	13 (19.6)
	60 - <70	224 (31.0)	39 (28.0)	7 (46.6)	243 (32.5)	38 (26.6)	1 (4.6)	282 (30.4)	56 (22.4)	9 (31.0)	749 (31.1)	133 (25.0)	17 (25.8)
	70 - <80	233 (32.2)	20 (14.4)	3 (20.0)	205 (27.4)	38 (26.6)	7 (31.8)	270 (29.2)	51 (20.4)	3 (10.4)	708 (29.6)	109 (20.3)	13 (19.7)
	≥80	55 (7.6)	13 (9.4)	2 (13.4)	74 (9.8)	7 (4.9)	2 (9.0)	70 (7.6)	14 (5.6)	1 (3.4)	199 (8.4)	34 (6.4)	5 (7.6)
	Total	**722 (100)**	**139 (100)**	**15 (100)**	**749 (100)**	**143 (100)**	**22 (100)**	**926 (100)**	**250 (100)**	**29 (100)**	**2,397 (100)**	**532 (100)**	**66 (100)**

Table 2.4.4 Age-gender distribution of patients with ACS by pre-morbid dyslipidaemia, NCVD-ACS Registry, 2011-2013

Gender	Age group	Dyslipidaemia											
		2011			2012			2013			2011-2013		
		Yes No. (%)	No No. (%)	Unknown No. (%)	Yes No. (%)	No No. (%)	Unknown No. (%)	Yes No. (%)	No No. (%)	Unknown No. (%)	Yes No. (%)	No No. (%)	Unknown No. (%)
Male	20 - <30	3 (0.2)	28 (2.0)	6 (1.6)	8 (0.6)	22 (1.2)	6 (1.4)	7 (0.4)	28 (1.2)	9 (1.8)	18 (0.4)	78 (1.4)	21 (1.6)
	30 - <40	48 (4.6)	100 (7.0)	21 (5.5)	47 (4.0)	124 (7.2)	32 (7.8)	67 (4.3)	181 (7.6)	37 (7.4)	162 (4.2)	405 (7.4)	90 (7.0)
	40 - <50	197 (18.5)	308 (21.6)	82 (21.7)	201 (17.3)	375 (21.6)	93 (22.4)	233 (14.4)	460 (19.4)	113 (22.4)	631 (16.4)	1,143 (20.6)	288 (22.2)
	50 - <60	350 (32.8)	478 (33.6)	135 (36.0)	390 (33.2)	567 (32.8)	132 (31.8)	583 (36.3)	832 (35.0)	161 (32.0)	1,323 (34.5)	1,877 (34.0)	428 (33.0)
	60 - <70	291 (27.3)	300 (21.0)	81 (21.6)	331 (28.3)	409 (23.6)	99 (24.0)	450 (28.0)	555 (23.4)	119 (23.5)	1,072 (27.8)	1,264 (22.8)	299 (23.2)
	70 - <80	155 (14.6)	167 (11.8)	47 (12.6)	173 (14.8)	187 (10.8)	44 (10.6)	226 (14.0)	266 (11.2)	53 (10.5)	554 (14.4)	620 (11.2)	144 (11.2)
	≥80	22 (2.0)	43 (3.0)	4 (1.0)	22 (1.8)	49 (2.8)	8 (2.0)	42 (2.6)	54 (2.2)	12 (2.4)	86 (2.3)	146 (2.6)	24 (1.8)
	Total	**1,066 (100)**	**1,424 (100)**	**376 (100)**	**1,172 (100)**	**1,733 (100)**	**414 (100)**	**1,608 (100)**	**2,376 (100)**	**504 (100)**	**3,846 (100)**	**5,533 (100)**	**1,294 (100)**
Female	20 - <30	0 (0)	2 (0.6)	1 (1.0)	0 (0)	3 (0.6)	1 (1.0)	1 (0.2)	1 (0.2)	0 (0)	1 (0.0)	6 (0.4)	2 (0.6)
	30 - <40	0 (0)	8 (2.2)	0 (0)	3 (0.8)	8 (1.8)	1 (1.0)	7 (1.4)	18 (3.0)	3 (2.8)	10 (0.8)	34 (2.5)	4 (1.5)
	40 - <50	35 (9.0)	45 (12.4)	3 (3.2)	24 (6.6)	40 (9.2)	8 (8.0)	50 (10.3)	60 (10.2)	12 (11.6)	109 (8.6)	145 (10.4)	23 (7.6)
	50 - <60	93 (23.6)	71 (19.6)	16 (16.6)	77 (21.0)	106 (24.6)	24 (24.3)	125 (25.3)	146 (24.5)	21 (20.2)	295 (23.6)	323 (23.3)	61 (20.5)
	60 - <70	124 (31.5)	103 (28.6)	31 (32.2)	122 (33.4)	125 (29.0)	30 (30.5)	140 (28.2)	167 (28.2)	36 (34.6)	386 (30.8)	395 (28.4)	97 (32.4)
	70 - <80	117 (29.7)	99 (27.4)	33 (34.4)	104 (28.4)	113 (26.2)	26 (26.2)	134 (27.0)	159 (26.7)	27 (26.0)	355 (28.4)	371 (26.8)	86 (28.8)
	≥80	24 (6.2)	33 (9.2)	12 (12.6)	36 (9.8)	37 (8.6)	9 (9.0)	38 (7.6)	43 (7.2)	5 (4.8)	98 (7.8)	113 (8.2)	26 (8.6)
	Total	**393 (100)**	**361 (100)**	**96 (100)**	**366 (100)**	**432 (100)**	**99 (100)**	**495 (100)**	**594 (100)**	**104 (100)**	**1,254 (100)**	**1,387 (100)**	**299 (100)**

Table 2.4.5 Age-gender distribution of patients with ACS by family history of premature cardiovascular disease, NCVD-ACS Registry, 2011-2013

Gender	Age group	Family History of Premature Cardiovascular Disease											
		2011			2012			2013			2011-2013		
		Yes No. (%)	No No. (%)	Unknown No. (%)	Yes No. (%)	No No. (%)	Unknown No. (%)	Yes No. (%)	No No. (%)	Unknown No. (%)	Yes No. (%)	No No. (%)	Unknown No. (%)
Male	20 - <30	8 (1.8)	24 (1.2)	5 (1.2)	11 (2.4)	20 (1.0)	4 (0.6)	6 (1.0)	31 (1.0)	7 (1.0)	25 (1.8)	75 (1.0)	16 (0.8)
	30 - <40	46 (10.2)	106 (5.5)	16 (3.6)	43 (9.5)	112 (5.2)	45 (7.0)	49 (8.8)	185 (5.8)	51 (6.8)	138 (9.4)	403 (5.6)	112 (6.2)
	40 - <50	124 (27.6)	380 (19.7)	77 (17.6)	123 (26.8)	429 (19.5)	120 (18.8)	118 (21.0)	568 (18.0)	113 (15.0)	365 (24.7)	1,377 (19.0)	310 (17.0)
	50 - <60	167 (37.2)	645 (33.5)	133 (30.5)	146 (31.8)	742 (33.7)	190 (29.6)	237 (42.0)	1,089 (34.7)	246 (32.5)	550 (37.4)	2,476 (34.0)	569 (31.0)
	60 - <70	77 (17.2)	449 (23.3)	125 (28.6)	97 (21.3)	570 (26.0)	163 (25.4)	102 (18.2)	808 (25.6)	203 (27.0)	276 (18.8)	1,827 (25.2)	491 (26.8)
	70 - <80	19 (4.2)	272 (14.2)	71 (16.3)	35 (7.6)	272 (12.3)	93 (14.6)	45 (8.0)	386 (12.3)	111 (14.7)	99 (6.7)	930 (12.8)	275 (15.0)
	≥80	8 (1.8)	49 (2.6)	10 (2.2)	3 (0.6)	51 (2.3)	25 (4.0)	6 (1.0)	79 (2.6)	23 (3.0)	17 (1.2)	179 (2.4)	58 (3.2)
	Total	**449 (100)**	**1,925 (100)**	**437 (100)**	**458 (100)**	**2,196 (100)**	**640 (100)**	**563 (100)**	**3,146 (100)**	**754 (100)**	**1,470 (100)**	**7,267 (100)**	**1,831 (100)**
Female	20 - <30	2 (2.6)	1 (0.2)	0 (0)	0 (0)	3 (0.4)	1 (0.6)	0 (0)	2 (0.0)	0 (0)	2 (0.6)	6 (0.2)	1 (0.2)
	30 - <40	0 (0)	7 (1.2)	1 (0.6)	2 (2.0)	7 (1.2)	3 (1.6)	5 (3.8)	21 (2.4)	3 (1.6)	7 (2.3)	35 (1.6)	7 (1.2)
	40 - <50	15 (19.7)	56 (9.4)	9 (5.4)	11 (11.5)	53 (8.8)	8 (4.2)	21 (15.8)	81 (9.5)	20 (10.0)	47 (15.4)	190 (9.3)	37 (6.6)
	50 - <60	20 (26.3)	128 (21.6)	25 (15.3)	34 (35.4)	135 (22.2)	38 (20.0)	40 (30.0)	213 (24.8)	40 (20.1)	94 (30.8)	476 (23.0)	103 (18.6)
	60 - <70	22 (29.0)	185 (31.2)	47 (28.6)	35 (36.4)	177 (29.0)	61 (32.2)	35 (26.4)	247 (28.8)	60 (30.2)	92 (30.3)	609 (29.6)	168 (30.4)
	70 - <80	14 (18.4)	166 (28.0)	65 (39.6)	8 (8.4)	183 (30.0)	53 (27.8)	25 (18.8)	231 (26.8)	63 (31.5)	47 (15.4)	580 (28.3)	181 (32.8)
	≥80	3 (4.0)	50 (8.4)	17 (10.5)	6 (6.3)	51 (8.4)	26 (13.6)	7 (5.2)	64 (7.4)	13 (6.6)	16 (5.2)	165 (8.0)	56 (10.2)
	Total	**76 (100)**	**593 (100)**	**164 (100)**	**96 (100)**	**609 (100)**	**190 (100)**	**133 (100)**	**859 (100)**	**199 (100)**	**305 (100)**	**2,061 (100)**	**553 (100)**

Table 2.4.6 Age-gender distribution of patients with ACS by smoking status, NCVD-ACS Registry, 2011-2013

Gender	Age group	2011 Never No. (%)	2011 Former (quit >30days) No. (%)	2011 Current (any tobacco used within last 30 days) No. (%)	2011 Not Available No. (%)	2012 Never No. (%)	2012 Former (quit >30days) No. (%)	2012 Current (any tobacco used within last 30 days) No. (%)	2012 Not Available No. (%)	2013 Never No. (%)	2013 Former (quit >30days) No. (%)	2013 Current (any tobacco used within last 30 days) No. (%)	2013 Not Available No. (%)	2011-2013 Never No. (%)	2011-2013 Former (quit >30days) No. (%)	2011-2013 Current (any tobacco used within last 30 days) No. (%)	2011-2013 Not Available No. (%)
Male	20 - <30	5 (0.6)	3 (0.4)	33 (2.4)	0 (0)	9 (1.0)	3 (0.4)	28 (1.8)	0 (0)	11 (1.0)	2 (0.2)	37 (1.6)	1 (0.4)	25 (1.0)	8 (0.2)	98 (1.8)	1 (0.2)
	30 - <40	22 (3.0)	24 (3.0)	132 (9.3)	3 (5.7)	30 (3.4)	23 (2.5)	176 (10.6)	4 (4.2)	38 (3.4)	52 (4.4)	224 (10.0)	4 (2.0)	90 (3.2)	99 (3.4)	532 (10.0)	11 (3.2)
	40 - <50	107 (14.1)	103 (13.0)	432 (30.3)	4 (7.6)	148 (17.2)	131 (14.3)	425 (25.8)	11 (11.6)	163 (14.5)	154 (12.7)	547 (24.5)	25 (12.2)	418 (15.2)	388 (13.3)	1,404 (26.4)	40 (11.4)
	50 - <60	257 (34.0)	242 (30.3)	502 (35.0)	19 (36.6)	271 (31.4)	273 (29.7)	569 (34.6)	28 (29.4)	377 (33.6)	408 (33.7)	817 (36.7)	62 (30.2)	905 (33.0)	923 (31.7)	1,888 (35.6)	109 (31.0)
	60 - <70	204 (27.0)	248 (31.2)	227 (15.8)	16 (30.7)	241 (28.0)	294 (32.1)	325 (19.8)	27 (28.4)	323 (28.7)	348 (28.7)	447 (20.0)	56 (27.4)	768 (28.0)	890 (30.5)	999 (18.8)	99 (28.2)
	70 - <80	132 (17.3)	146 (18.3)	93 (6.4)	9 (17.4)	136 (15.8)	157 (17.2)	102 (6.2)	23 (24.2)	170 (15.2)	202 (16.7)	149 (6.6)	44 (21.4)	438 (16.0)	505 (17.3)	344 (6.4)	76 (21.5)
	≥80	31 (4.0)	31 (3.8)	12 (0.8)	1 (2.0)	28 (3.2)	34 (3.8)	21 (1.2)	2 (2.2)	40 (3.6)	43 (3.6)	15 (0.6)	13 (6.4)	99 (3.6)	108 (3.6)	48 (1.0)	16 (4.5)
	Total	758 (100)	797 (100)	1,431 (100)	52 (100)	863 (100)	915 (100)	1,646 (100)	95 (100)	1,122 (100)	1,209 (100)	2,236 (100)	205 (100)	2,743 (100)	2,921 (100)	5,313 (100)	352 (100)
Female	20 - <30	2 (0.2)	0 (0)	1 (2.6)	0 (0)	2 (0.2)	0 (0)	1 (3.0)	1 (3.6)	2 (0.2)	0 (0)	0 (0)	0 (0)	6 (0.2)	0 (0)	2 (1.6)	1 (1.0)
	30 - <40	7 (1.0)	1 (2.6)	1 (2.6)	0 (0)	12 (1.5)	1 (3.7)	1 (3.0)	1 (3.6)	26 (2.4)	3 (4.2)	1 (1.6)	0 (0)	45 (1.6)	5 (3.6)	3 (2.4)	1 (1.0)
	40 - <50	77 (10.0)	2 (5.2)	5 (13.2)	3 (16.6)	63 (7.6)	2 (7.3)	6 (18.2)	1 (3.6)	105 (10.0)	5 (6.8)	11 (18.7)	2 (4.2)	245 (9.3)	9 (6.5)	22 (17.0)	6 (6.4)
	50 - <60	163 (21.0)	5 (13.3)	13 (34.2)	3 (16.6)	192 (23.5)	9 (33.4)	8 (24.3)	4 (14.2)	262 (25.0)	19 (26.0)	13 (22.0)	13 (27.7)	617 (23.4)	33 (24.0)	34 (26.2)	20 (21.6)
	60 - <70	234 (30.2)	15 (39.4)	11 (29.0)	7 (38.8)	262 (31.8)	3 (11.1)	9 (27.3)	8 (28.6)	300 (28.6)	21 (28.8)	17 (28.8)	12 (25.6)	796 (30.0)	39 (28.2)	37 (28.3)	27 (29.0)
	70 - <80	228 (29.4)	13 (34.3)	6 (15.8)	4 (22.3)	220 (26.6)	9 (33.4)	6 (18.2)	9 (32.2)	279 (26.6)	19 (26.0)	12 (20.5)	18 (38.3)	727 (27.5)	41 (29.7)	24 (18.3)	31 (33.4)
	≥80	64 (8.2)	2 (5.2)	1 (2.6)	1 (5.7)	73 (8.8)	3 (11.1)	2 (6.0)	4 (14.2)	75 (7.2)	6 (8.2)	5 (8.4)	2 (4.2)	212 (8.0)	11 (8.0)	8 (6.2)	7 (7.6)
	Total	775 (100)	38 (100)	38 (100)	18 (100)	824 (100)	27 (100)	33 (100)	28 (100)	1,049 (100)	73 (100)	59 (100)	47 (100)	2,648 (100)	138 (100)	130 (100)	93 (100)

Table 2.5 Presence of cumulative risk factors, NCVD-ACS Registry, 2011-2013

Year	2011		2012		2013		2011-2013	
Total	**4,047**		**4,589**		**6,127**		**14,763**	
Presence of cumulative risk factors*	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
None	211	5.3	267	5.8	344	5.6	822	5.6
1 risk factor	772	19.0	951	20.8	1,377	22.4	3,100	21.0
2 risk factors	1,229	30.4	1,343	29.2	1,749	28.6	4,321	29.2
3 risk factors	1,143	28.2	1,208	26.4	1,521	24.8	3,872	26.2
>3 risk factors	692	17.1	820	17.8	1,136	18.6	2,648	18.0

* *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, 2011-2013

Year	2011		2012		2013		2011-2013	
Total	**4,047**		**4,589**		**6,127**		**14,763**	
Acute coronary syndrome stratum	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
STEMI	2,055	50.8	2,386	52.0	3,061	50.0	7,502	50.8
NSTEMI	1,094	27.0	1,146	25.0	1,602	26.2	3,842	26.0
Unstable Angina (UA)	898	22.2	1,057	23.0	1,464	23.8	3,419	23.2

Note: Percentage is to the nearest decimal point

Table 2.7 Characteristics of patients with ACS by ACS stratum, NCVD-ACS Registry, 2011-2013

Year	2011			2012			2013			2011-2013		
ACS Stratum	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA
Total	**2,055**	**1,094**	**898**	**2,386**	**1,146**	**1,057**	**3,061**	**1,602**	**1,464**	**7,502**	**3,842**	**3,419**
DEMOGRAPHICS												
Age, years												
N	2,055	1,094	898	2,386	1,146	1,057	3,061	1,602	1,464	7,502	3,842	3,419
Mean (SD)	56.3 (12.2)	61.2 (11.8)	60.8 (12.0)	56.5 (12.1)	60.6 (11.9)	60.9 (12.3)	56.0 (11.8)	60.7 (11.8)	60.7 (11.8)	56.2 (12.0)	60.8 (11.8)	60.8 (12.0)
Median (min, max)	55.6 (21.1, 96.9)	61.0 (25.3, 90.4)	60.8 (21.6, 98.4)	56.2 (20.3, 92.0)	60.9 (24.9, 95.3)	60.6 (22.1, 100.9)	55.8 (20.9, 97.6)	60.4 (20.0, 96.0)	60.6 (21.1, 101.9)	55.8 (20.3, 97.6)	60.7 (20.0, 96.0)	60.6 (21.1, 101.9)
IQR	16.8	17.8	17.0	16.7	16.3	16.7	15.4	16.1	16.8	16.1	16.7	17
Age group, No. (%)												
20 - <30	32 (1.6)	6 (0.6)	6 (0.6)	28 (1.2)	7 (0.6)	9 (0.8)	42 (1.4)	7 (0.4)	4 (0.2)	102 (1.4)	20 (0.6)	19 (0.6)
30 - <40	139 (6.7)	28 (2.6)	33 (3.7)	177 (7.4)	50 (4.4)	36 (3.4)	237 (7.8)	66 (4.3)	51 (3.5)	553 (7.4)	144 (3.8)	120 (3.5)
40 - <50	456 (22.2)	159 (14.6)	134 (15.0)	520 (21.8)	153 (13.4)	151 (14.3)	633 (20.6)	197 (12.2)	203 (13.8)	1,609 (21.4)	509 (13.2)	488 (14.2)
50 - <60	678 (33.0)	321 (29.3)	251 (28.0)	750 (31.4)	326 (28.4)	311 (29.5)	1,052 (34.4)	511 (31.8)	448 (30.6)	2,480 (33.0)	1,158 (30.2)	1,010 (29.5)
60 - <70	447 (21.7)	298 (27.2)	254 (28.2)	571 (24.0)	343 (30.0)	293 (27.8)	697 (22.8)	446 (27.8)	415 (28.5)	1,715 (22.8)	1,087 (28.2)	962 (28.2)
70 - <80	247 (12.0)	229 (21.0)	182 (20.3)	282 (11.8)	214 (18.6)	191 (18.0)	339 (11.0)	298 (18.7)	278 (19.0)	868 (11.6)	741 (19.2)	651 (19.0)
≥80	56 (2.8)	53 (4.7)	38 (4.2)	58 (2.4)	53 (4.6)	66 (6.2)	61 (2.0)	77 (4.8)	65 (4.4)	175 (2.4)	183 (4.8)	169 (5.0)
Gender, No. (%)												
Male	1,738 (84.6)	787 (72.0)	620 (69.0)	2,048 (85.8)	855 (74.6)	725 (68.6)	2,611 (85.2)	1,240 (77.4)	1,014 (69.2)	6,397 (85.2)	2,882 (75.0)	2,359 (69.0)
Female	317 (15.4)	307 (28.0)	278 (31.0)	338 (14.2)	291 (25.4)	332 (31.4)	450 (14.8)	362 (22.6)	450 (30.8)	1,105 (14.8)	960 (25.0)	1,060 (31.0)

Year	2011			2012			2013			2011-2013		
ACS Stratum	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**
Total	**2,055**	**1,094**	**898**	**2,386**	**1,146**	**1,057**	**3,061**	**1,602**	**1,464**	**7,502**	**3,842**	**3,419**
Ethnic group, No. (%)												
Malay	1,140 (55.3)	480 (43.8)	371 (41.3)	1,387 (58.2)	492 (43.0)	413 (39.0)	1,791 (58.5)	754 (47.0)	631 (43.2)	4,318 (57.6)	1,726 (45.0)	1,415 (41.3)
Chinese	389 (19.0)	272 (24.8)	207 (23.0)	386 (16.2)	275 (24.0)	332 (31.4)	487 (16.0)	411 (25.5)	415 (28.3)	1,262 (16.8)	958 (25.0)	954 (28.0)
Indian	336 (16.4)	275 (25.2)	286 (31.7)	345 (14.4)	291 (25.5)	247 (23.5)	464 (15.2)	320 (20.0)	340 (23.2)	1,145 (15.3)	886 (23.0)	873 (25.5)
Orang Asli	2 (0.0)	0 (0)	0 (0)	1 (0.0)	0 (0)	0 (0)	4 (0.2)	1 (0.0)	0 (0)	7 (0.0)	1 (0.0)	0 (0)
Kadazan	20 (1.0)	10 (1.0)	3 (0.4)	25 (1.0)	7 (0.6)	5 (0.4)	39 (1.2)	15 (1.0)	11 (0.7)	84 (1.2)	32 (0.8)	19 (0.5)
Melanau	2 (0.0)	2 (0.2)	0 (0)	1 (0.0)	0 (0)	0 (0)	2 (0.0)	2 (0.2)	1 (0.0)	5 (0.0)	4 (0.2)	1 (0.0)
Murut	0 (0)	0 (0)	1 (0.2)	3 (0.0)	1 (0.0)	0 (0)	4 (0.2)	2 (0.2)	0 (0)	7 (0.0)	3 (0.1)	1 (0.0)
Bajau	23 (1.2)	6 (0.6)	1 (0.2)	27 (1.2)	5 (0.4)	3 (0.2)	33 (1.0)	12 (0.7)	3 (0.2)	83 (1.2)	23 (0.5)	7 (0.2)
Bidayuh	13 (0.6)	3 (0.2)	1 (0.2)	13 (0.6)	7 (0.6)	4 (0.4)	16 (0.6)	15 (1.0)	8 (0.6)	42 (0.6)	25 (0.6)	13 (0.4)
Iban	27 (1.4)	9 (0.8)	6 (0.6)	38 (1.6)	19 (1.6)	13 (1.3)	32 (1.0)	20 (1.2)	20 (1.4)	97 (1.2)	48 (1.2)	39 (1.1)
Other Malaysian	35 (1.7)	21 (2.0)	14 (1.6)	63 (2.6)	24 (2.0)	30 (2.8)	71 (2.4)	25 (1.6)	21 (1.4)	169 (2.3)	70 (1.9)	65 (2.0)
Foreigner	68 (3.4)	16 (1.4)	8 (0.8)	97 (4.0)	25 (2.3)	10 (1.0)	118 (3.7)	25 (1.6)	14 (1.0)	283 (3.8)	66 (1.8)	32 (1.0)
OTHER CORONARY RISK FACTORS												
Smoking, No. (%)												
Never	604 (30.2)	491 (46.8)	438 (51.2)	686 (29.6)	510 (46.4)	491 (48.6)	901 (30.0)	608 (38.8)	662 (46.6)	2,191 (29.9)	1,609 (43.4)	1,591 (48.4)
Former (quit >30 days)	361 (18.0)	243 (23.2)	231 (27.0)	432 (18.6)	241 (21.8)	269 (26.7)	460 (15.3)	443 (28.2)	379 (26.6)	1,253 (17.0)	927 (25.0)	879 (26.8)
Current (any tobacco use within last 30 days)	1,017 (50.8)	282 (27.0)	170 (19.8)	1,167 (50.2)	302 (27.4)	210 (20.8)	1,556 (51.7)	428 (27.4)	311 (21.8)	3,740 (51.0)	1,012 (27.2)	691 (21.0)
Unknown	22 (1.0)	31 (3.0)	17 (2.0)	36 (1.6)	48 (4.4)	39 (3.9)	93 (3.0)	88 (5.6)	71 (5.0)	151 (2.1)	167 (4.4)	127 (3.8)
Missing	51	47	42	65	45	48	51	35	41	167	127	131

Year	2011			2012			2013			2011-2013		
ACS Stratum	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**
Total	**2,055**	**1,094**	**898**	**2,386**	**1,146**	**1,057**	**3,061**	**1,602**	**1,464**	**7,502**	**3,842**	**3,419**
Family history of Premature CVD, No. (%)												
Yes	250 (13.7)	147 (15.0)	128 (15.2)	272 (12.8)	140 (13.2)	142 (14.1)	331 (12.0)	187 (12.2)	178 (13.0)	853 (12.7)	474 (13.2)	448 (14.0)
No	1,312 (72.0)	666 (67.8)	540 (64.6)	1,487 (69.8)	677 (64.2)	641 (64.0)	1,943 (70.8)	1,112 (72.4)	950 (69.2)	4,742 (70.7)	2,455 (68.8)	2,131 (66.3)
Unknown	262 (14.3)	170 (17.2)	169 (20.2)	372 (17.4)	238 (22.6)	220 (21.9)	473 (17.2)	236 (15.4)	244 (17.8)	1,107 (16.6)	644 (18.0)	633 (19.7)
Missing	231	111	61	255	91	54	314	67	92	800	269	207
ANTHROPOMETRICS												
Body Mass Index (BMI), kgm^{-2}												
N	734	326	247	928	384	378	1,067	575	531	2,729	1,285	1,156
Mean (SD)	25.9 (4.1)	25.4 (4.2)	26.3 (5.0)	25.9 (3.9)	25.9 (4.3)	25.8 (4.5)	26.4 (4.2)	26.4 (4.5)	26.1 (4.6)	26.1 (4.1)	26.0 (4.4)	26.0 (4.6)
Median (min, max)	25.6 (15.4, 44.8)	25.3 (15.4, 47.4)	25.5 (14.7, 49.8)	25.7 (15.6, 48.1)	25.7 (16.3, 43.5)	25.4 (16.7, 43.5)	26.2 (14.6, 44.1)	26.0 (15.0, 46.5)	25.8 (15.0, 47.9)	25.8 (14.6, 48.1)	25.7 (15.0, 47.4)	25.5 (14.7, 49.8)
IQR	4.6	5.1	5.9	5	5.4	5.8	5.5	5.7	5.6	5	5.5	5.8
Missing	1,321	768	651	1,458	762	679	1,994	1,027	933	4,773	2,557	2,263
BMI, kgm^{-2}, No. (%)												
<18.5	13 (1.8)	12 (3.6)	9 (3.7)	20 (2.2)	11 (2.8)	16 (4.2)	15 (1.4)	13 (2.2)	20 (3.8)	48 (1.8)	36 (2.8)	45 (3.8)
18.5 - 23	149 (20.2)	82 (25.2)	54 (21.8)	191 (20.6)	96 (25.0)	90 (23.8)	198 (18.6)	122 (21.2)	104 (19.6)	538 (19.7)	300 (23.4)	248 (21.5)
>23	572 (78.0)	232 (71.2)	184 (74.5)	717 (77.2)	277 (72.2)	272 (72.0)	854 (80.0)	440 (76.6)	407 (76.6)	2,143 (78.5)	949 (73.8)	863 (74.7)
Missing	1,321	768	651	1,458	762	679	1,994	1,027	933	4,773	2557	2263
Waist Hip Ratio (WHR)												
N	528	154	113	529	116	115	714	240	223	1771	510	451
Mean (SD)	1.0 (0.2)	1.0 (0.2)	1.0 (0.3)	1.0 (0.1)	1.0 (0.2)	0.9 (0.1)	1.0 (0.1)	1.0 (0.2)	1.0 (0.2)	1.0 (0.1)	1.0 (0.2)	1.0 (0.2)
Median (min, max)	1.0 (0.7, 2.5)	1.0 (0.8, 2.5)	1.0 (0.7, 2.2)	1.0 (0.7, 1.9)	1.0 (0.7, 2.0)	0.9 (0.8, 1.1)	1.0 (0.8, 2.9)	1.0 (0.7, 2.9)	1.0 (0.7, 2.4)	1.0 (0.7, 2.9)	1.0 (0.7, 2.9)	1.0 (0.7, 2.4)
IQR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Missing	1,527	940	785	1,857	1,030	942	2,347	1,362	1,241	5,731	3,332	2,968

Year	2011			2012			2013			2011-2013		
ACS Stratum	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA
Total	**2,055**	**1,094**	**898**	**2,386**	**1,146**	**1,057**	**3,061**	**1,602**	**1,464**	**7,502**	**3,842**	**3,419**
WHR, No. (%)												
Men	462	118	82	474	92	73	637	184	169	1573	394	324
≤1.0	356 (77.0)	79 (67.0)	54 (65.8)	333 (70.2)	63 (68.4)	62 (85.0)	444 (69.8)	136 (74.0)	138 (81.6)	1,133 (72.0)	278 (70.6)	254 (78.4)
>1.0	106 (23.0)	39 (33.0)	28 (34.2)	141 (29.8)	29 (31.6)	11 (15.0)	193 (30.2)	84 (26.0)	31 (18.4)	440 (28.0)	116 (29.4)	70 (21.6)
Women	66	36	31	55	24	42	77	56	54	198	116	127
≤0.85	8 (12.2)	6 (16.6)	3 (9.6)	6 (11.0)	2 (8.4)	9 (21.4)	7 (9.0)	7 (12.5)	7 (13.0)	21 (10.6)	15 (13.0)	19 (15.0)
>0.85	58 (87.8)	30 (83.4)	28 (90.4)	49 (89.0)	22 (91.6)	33 (78.6)	70 (91.0)	49 (87.5)	47 (87.0)	177 (89.4)	101 (87.0)	108 (85.0)
Waist circumference, cm												
N	469	134	84	491	108	107	634	225	216	1594	467	407
Mean (SD)	92.9 (9.8)	92.9 (9.4)	96.5 (11.5)	92.5 (10.4)	93.2 (11.6)	92.2 (11.6)	92.7 (10.5)	92.7 (12.2)	91.5 (10.3)	92.7 (10.3)	92.9 (11.3)	92.7 (11.1)
Median (min, max)	93.0 (70.0, 129.0)	92.5 (74.0, 120.0)	96.0 (73.0, 129.0)	91.0 (70.0, 122.0)	93.5 (70.0, 120.0)	91.0 (70.0, 124.0)	92.0 (70.0, 125.0)	91.0 (70.0, 128.0)	90.0 (70.0, 130.0)	92.0 (70.0, 129.0)	92.0 (70.0, 128.0)	90.0 (70.0, 130.0)
IQR	13.0	12.5	15.5	14.0	16.5	17.0	14.0	16.0	13.5	13.0	15.0	15.0
Not available	1,244 (72.6)	768 (85.2)	675 (89.0)	1,455 (74.8)	836 (88.6)	795 (88.2)	1,988 (75.8)	1,014 (81.8)	1,006 (82.4)	4,687 (74.6)	2,618 (84.8)	2,476 (85.8)
Missing	342	192	139	440	202	155	439	363	242	1221	757	536
Waist circumference, cm, No. (%)												
Men	1,455	647	520	1,669	715	643	2,243	960	852	5,367	2,322	2,015
≤90	172 (11.8)	45 (7.0)	22 (4.2)	205 (12.3)	41 (5.8)	35 (5.4)	233 (10.4)	78 (8.2)	96 (11.3)	610 (11.4)	164 (7.0)	153 (7.6)
>90	242 (16.6)	61 (9.4)	37 (7.2)	234 (14.0)	46 (6.4)	38 (6.0)	334 (14.8)	93 (9.6)	67 (7.8)	810 (15.0)	200 (8.6)	142 (7.0)
Not available	1,041 (71.6)	541 (83.6)	461 (88.6)	1,230 (73.7)	628 (87.8)	570 (88.6)	1,676 (74.8)	789 (82.2)	689 (80.9)	3,947 (73.6)	1,958 (84.4)	1,720 (85.4)

Year	2011			2012			2013			2011-2013		
ACS Stratum	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA
Total	2,055	1,094	898	2,386	1,146	1,057	3,061	1,602	1,464	7,502	3,842	3,419
Women	258	255	239	277	229	259	379	279	370	914	763	868
≤80	8 (3.2)	6 (2.4)	1 (4.2)	9 (3.2)	4 (1.8)	10 (3.8)	10 (2.6)	14 (5.0)	9 (2.5)	27 (3.0)	24 (3.2)	20 (2.4)
>80	47 (18.2)	22 (8.6)	24 (10.0)	43 (15.6)	17 (7.4)	24 (9.3)	57 (15.0)	40 (14.4)	44 (11.8)	147 (16.0)	79 (10.3)	92 (10.6)
Not available	203 (78.6)	227 (89.0)	214 (89.6)	225 (81.2)	208 (90.8)	225 (86.9)	312 (82.4)	225 (80.6)	317 (85.7)	740 (81.0)	660 (86.5)	756 (87.0)
CO-MORBIDITY												
Dyslipidaemia, No. (%)												
Yes	587 (31.8)	469 (46.4)	403 (46.8)	585 (27.4)	455 (42.4)	498 (49.4)	755 (27.6)	628 (40.8)	720 (51.2)	1,927 (28.8)	1,552 (42.8)	1,621 (49.4)
No	965 (52.4)	443 (43.8)	377 (43.8)	1,210 (56.6)	508 (47.4)	447 (44.3)	1,559 (57.0)	818 (53.2)	593 (42.0)	3,734 (55.6)	1,769 (48.9)	1,417 (43.2)
Unknown	293 (15.8)	98 (9.8)	81 (9.4)	340 (16.0)	109 (10.2)	64 (6.3)	420 (15.4)	92 (6.0)	96 (6.8)	1,053 (15.6)	299 (8.3)	241 (7.4)
Missing	210	84	37	251	74	48	327	64	55	788	222	140
Hypertension, No. (%)												
Yes	1,061 (56.4)	782 (75.2)	704 (80.2)	1,209 (56.0)	806 (74.2)	782 (77.0)	1,518 (54.8)	1,054 (67.6)	1,058 (74.8)	3,788 (55.6)	2,642 (71.6)	2,544 (77.0)
No	710 (37.8)	236 (22.6)	160 (18.2)	807 (37.5)	246 (22.6)	206 (20.3)	1,065 (38.4)	473 (30.4)	319 (22.6)	2,582 (38.0)	955 (26.0)	685 (20.7)
Unknown	109 (5.8)	22 (2.2)	14 (1.6)	140 (6.5)	35 (3.2)	27 (2.7)	191 (6.8)	31 (2.0)	36 (2.6)	440 (6.4)	88 (2.4)	77 (2.3)
Missing	175	54	20	230	59	42	287	44	51	692	157	113
Diabetes, No. (%)												
Yes	713 (38.0)	558 (54.8)	471 (54.2)	844 (39.2)	598 (55.2)	532 (52.6)	1,111 (40.3)	774 (50.0)	683 (48.8)	2,668 (39.3)	1,930 (52.8)	1,686 (51.4)
No	1,027 (54.8)	430 (42.2)	364 (41.8)	1,138 (53.0)	439 (40.4)	446 (44.2)	1,413 (51.2)	727 (46.8)	654 (46.8)	3,578 (52.7)	1,596 (43.7)	1,464 (44.6)
Unknown	136 (7.2)	30 (3.0)	34 (4.0)	166 (7.8)	47 (4.4)	33 (3.2)	234 (8.5)	50 (3.2)	62 (4.4)	536 (8.0)	127 (3.5)	129 (4.0)
Missing	179	76	29	238	62	46	303	51	65	720	189	140

Year	2011			2012			2013			2011-2013		
ACS Stratum	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA
Total	**2,055**	**1,094**	**898**	**2,386**	**1,146**	**1,057**	**3,061**	**1,602**	**1,464**	**7,502**	**3,842**	**3,419**
Fasting blood glucose, mmol/L												
N	1,608	756	538	1,835	725	610	2360	973	868	5,803	2,454	2,016
Mean (SD)	8.7 (4.5)	7.9 (4.1)	7.2 (3.4)	8.6 (4.2)	8.2 (4.2)	7.2 (3.0)	8.8 (4.4)	8.3 (4.3)	7.3 (3.9)	8.7 (4.3)	8.1 (4.2)	7.3 (3.5)
Median (min, max)	7.2 (3.1, 49.0)	6.5 (3.0, 43.0)	6.0 (3.2, 38.0)	7.1 (3.3, 44.4)	6.8 (3.0, 35.6)	6.1 (3.0, 23.0)	7.3 (3.0, 41.7)	6.8 (3.2, 43.1)	5.9 (3.2, 49.9)	7.2 (3.0, 49.0)	6.7 (3.0, 43.1)	6.0 (3.0, 49.9)
IQR	4.2	3.7	2.9	3.9	4.2	2.8	4.2	4.0	2.7	4.1	4.0	2.8
Not Done	330 (17.0)	254 (25.2)	302 (36.0)	407 (18.2)	351 (32.6)	371 (37.8)	407 (14.8)	386 (28.4)	499 (36.6)	1,144 (16.4)	991 (28.8)	1,172 (36.8)
Missing	117	84	58	144	70	76	294	243	97	555	397	231
Myocardial infarction history, No. (%)												
Yes	226 (12.3)	273 (27.8)	306 (36.5)	268 (12.6)	289 (27.5)	316 (31.6)	311 (11.3)	298 (19.3)	313 (22.8)	805 (12.0)	860 (24.0)	935 (29.2)
No	1,470 (80.2)	620 (63.0)	467 (55.7)	1,654 (77.8)	662 (62.8)	587 (58.6)	2,205 (79.8)	1,108 (71.7)	882 (64.4)	5,329 (79.3)	2,390 (66.8)	1,936 (60.3)
Unknown	138 (7.5)	90 (9.2)	66 (7.8)	203 (9.6)	102 (9.7)	98 (9.8)	244 (8.9)	138 (9.0)	175 (12.8)	585 (8.7)	330 (9.2)	339 (10.5)
Missing	221	111	59	261	93	56	301	58	94	783	262	209
*Documented CAD, No. (%)												
Yes	137 (7.5)	219 (22.4)	272 (32.5)	157 (7.4)	294 (27.8)	393 (39.2)	257 (9.4)	536 (34.8)	587 (42.6)	551 (8.2)	1,049 (29.4)	1,252 (38.8)
No	1,420 (78.2)	616 (63.2)	448 (53.5)	1,633 (77.0)	631 (59.7)	503 (50.0)	2,186 (79.6)	905 (58.8)	669 (48.4)	5,239 (78.4)	2,152 (60.2)	1,620 (50.3)
Unknown	261 (14.3)	140 (14.4)	118 (14.0)	329 (15.6)	132 (12.5)	108 (10.8)	303 (11.0)	98 (6.4)	125 (9.0)	893 (13.4)	370 (10.4)	351 (10.9)
Missing	237	119	60	267	89	53	315	63	83	819	271	196
Chronic angina (onset more than 2 weeks ago), No. (%)												
Yes	95 (5.2)	141 (14.4)	177 (21.0)	106 (5.0)	117 (11.2)	177 (17.7)	149 (5.4)	186 (12.0)	195 (14.4)	350 (5.2)	444 (12.4)	549 (17.2)
No	1,605 (87.8)	770 (78.3)	606 (72.3)	1,839 (86.4)	857 (81.6)	749 (74.8)	2,413 (88.2)	1,271 (82.4)	1,059 (77.6)	5,857 (87.6)	2,898 (81.0)	2,414 (75.4)
Unknown	127 (7.0)	72 (7.3)	56 (6.7)	182 (8.6)	76 (7.2)	75 (7.5)	175 (6.4)	85 (5.6)	109 (8.0)	484 (7.2)	233 (6.6)	240 (7.4)
Missing	228	111	59	259	96	56	324	60	101	811	267	216

Year	2011			2012			2013			2011-2013		
ACS Stratum	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA	STEMI	NSTEMI	UA
Total	**2,055**	**1,094**	**898**	**2,386**	**1,146**	**1,057**	**3,061**	**1,602**	**1,464**	**7,502**	**3,842**	**3,419**
New onset angina (less than 2 weeks ago), No. (%)												
Yes	1,045 (56.8)	694 (68.6)	532 (62.6)	1,169 (54.8)	612 (58.0)	632 (63.2)	1,514 (54.8)	840 (54.2)	862 (62.2)	3,728 (55.4)	2,146 (59.3)	2,026 (62.6)
No	737 (40.0)	287 (28.3)	285 (33.6)	843 (39.6)	418 (39.7)	336 (33.6)	1,137 (41.0)	637 (41.2)	421 (30.3)	2,717 (40.3)	1,342 (37.2)	1,042 (32.2)
Unknown	58 (3.2)	32 (3.1)	32 (3.8)	119 (5.6)	24 (2.3)	32 (3.2)	116 (4.2)	71 (4.6)	105 (7.5)	293 (4.3)	127 (3.5)	169 (5.2)
Missing	215	81	49	255	92	57	294	54	76	764	227	182
Heart failure, No. (%)												
Yes	85 (4.6)	141 (14.4)	86 (10.3)	70 (3.3)	164 (15.6)	129 (12.8)	80 (3.0)	130 (8.4)	85 (6.2)	235 (3.6)	435 (12.2)	300 (9.4)
No	1,649 (90.6)	798 (81.4)	715 (85.7)	1,915 (89.8)	845 (80.0)	826 (82.4)	2,502 (91.4)	1,337 (86.6)	1,167 (85.6)	6,066 (90.6)	2,980 (83.2)	2,708 (84.6)
Unknown	87 (4.8)	42 (4.2)	33 (4.0)	146 (6.9)	46 (4.4)	48 (4.8)	154 (5.6)	78 (5.0)	112 (8.2)	387 (5.8)	166 (4.6)	193 (6.0)
Missing	234	113	64	255	91	54	325	57	100	814	261	218
Chronic lung disease, No. (%)												
Yes	46 (2.5)	42 (4.4)	41 (4.9)	44 (2.0)	37 (3.6)	39 (3.8)	52 (1.8)	63 (4.0)	61 (4.5)	142 (2.2)	142 (4.0)	141 (4.4)
No	1,672 (92.0)	892 (91.6)	754 (90.2)	1,942 (91.0)	969 (91.8)	917 (91.7)	2,536 (92.6)	1,397 (90.8)	1,196 (87.7)	6,150 (91.8)	3,258 (91.4)	2,867 (89.6)
Unknown	100 (5.5)	39 (4.0)	41 (4.9)	150 (7.0)	49 (4.6)	45 (4.5)	151 (5.6)	79 (5.2)	107 (7.8)	401 (6.0)	167 (4.6)	193 (6.0)
Missing	237	121	62	250	91	56	322	63	100	809	275	218
*Renal disease, No. (%)												
Yes	79 (4.4)	140 (14.2)	79 (9.4)	86 (4.0)	117 (11.0)	98 (9.8)	96 (3.6)	200 (13.0)	148 (10.8)	261 (3.8)	457 (12.8)	325 (10.2)
No	1,649 (90.2)	810 (82.2)	723 (86.0)	1,893 (89.0)	896 (84.9)	863 (86.0)	2,497 (91.0)	1,276 (82.8)	1,118 (81.8)	6,039 (90.2)	2,982 (83.2)	2,704 (84.1)
Unknown	100 (5.4)	35 (3.6)	39 (4.6)	149 (7.0)	43 (4.1)	43 (4.2)	149 (5.4)	66 (4.2)	102 (7.4)	398 (6.0)	144 (4.0)	184 (5.7)
Missing	227	109	57	258	90	53	319	60	96	804	259	206

Year	2011			2012			2013			2011-2013		
ACS Stratum	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**	**STEMI**	**NSTEMI**	**UA**
Total	**2,055**	**1,094**	**898**	**2,386**	**1,146**	**1,057**	**3,061**	**1,602**	**1,464**	**7,502**	**3,842**	**3,419**
Cerebrovascular disease, No. (%)												
Yes	58 (3.2)	55 (5.6)	42 (5.0)	65 (3.0)	42 (4.0)	46 (4.6)	82 (3.0)	52 (3.4)	67 (5.0)	205 (3.0)	149 (4.2)	155 (4.8)
No	1,673 (92.2)	879 (90.2)	756 (90.6)	1,927 (90.4)	960 (91.4)	910 (91.0)	2,512 (91.8)	1,416 (91.8)	1,186 (87.2)	6,112 (91.5)	3,255 (91.2)	2,852 (89.3)
Unknown	85 (4.6)	41 (4.2)	36 (4.4)	139 (6.6)	48 (4.6)	45 (4.4)	143 (5.2)	73 (4.8)	106 (7.8)	367 (5.5)	162 (4.6)	187 (5.9)
Missing	239	119	64	255	96	56	324	61	105	818	276	225
Peripheral vascular disease, No. (%)												
Yes	12 (0.6)	16 (1.6)	12 (1.4)	4 (0.2)	16 (1.6)	10 (1.0)	4 (0.2)	11 (0.7)	19 (1.4)	20 (0.4)	43 (1.2)	41 (1.3)
No	1,695 (94.0)	904 (93.4)	779 (93.3)	1,976 (93.0)	984 (94.0)	939 (94.0)	2,576 (94.4)	1,442 (94.1)	1,231 (90.8)	6,247 (93.8)	3,330 (93.8)	2,949 (92.4)
Unknown	96 (5.4)	48 (5.0)	44 (5.3)	144 (6.8)	47 (4.4)	49 (5.0)	150 (5.4)	79 (5.2)	107 (7.8)	390 (5.8)	174 (5.0)	200 (6.3)
Missing	252	126	63	262	99	59	331	70	107	845	295	229
None of the above, No. (%)												
Yes	143 (7.0)	29 (2.6)	13 (1.4)	216 (9.0)	42 (3.6)	21 (2.0)	258 (8.4)	28 (1.8)	15 (1.0)	617 (8.2)	99 (2.6)	49 (1.4)
No	1,912 (93.0)	1,065 (97.4)	885 (98.6)	2,170 (91.0)	1,104 (96.4)	1,036 (98.0)	2,803 (91.6)	1,574 (98.2)	1,449 (99.0)	6,885 (91.8)	3,743 (97.4)	3,370 (98.6)
**Coronary artery disease, No. (%)												
Yes	1,215 (70.0)	861 (86.8)	752 (90.0)	1,368 (70.4)	794 (77.2)	857 (88.8)	1,766 (68.0)	1,207 (80.6)	1,197 (90.2)	4,349 (69.2)	2,862 (81.4)	2,806 (89.8)
No	522 (30.0)	131 (13.2)	83 (10.0)	575 (29.6)	235 (22.8)	109 (11.2)	833 (32.0)	290 (19.4)	129 (9.8)	1,930 (30.8)	656 (18.6)	321 (10.2)

Definition is different in CRF version 2013
*** Coronary artery disease is defined as "Yes" to any of the following co-morbidities: 1) History of myocardial infarction, 2) Documented CAD, 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, 2011-2013

Gender	Age Group	2011			2012			2013			2011-2013		
		STEMI No. (%)	NSTEMI No. (%)	UA No. (%)	STEMI No. (%)	NSTEMI No. (%)	UA No. (%)	STEMI No. (%)	NSTEMI No. (%)	UA No. (%)	STEMI No. (%)	NSTEMI No. (%)	UA No. (%)
Male	20 - <30	30 (1.8)	6 (0.8)	5 (0.8)	27 (1.4)	6 (0.8)	7 (1.0)	42 (1.6)	6 (0.4)	3 (0.2)	99 (1.5)	18 (0.6)	15 (0.6)
	30 - <40	132 (7.6)	27 (3.4)	32 (5.1)	173 (8.4)	46 (5.4)	27 (3.8)	226 (8.6)	59 (4.9)	38 (3.8)	531 (8.4)	132 (4.6)	97 (4.2)
	40 - <50	413 (23.8)	137 (17.4)	110 (17.8)	484 (23.6)	138 (16.1)	122 (16.8)	577 (22.0)	182 (14.7)	144 (14.2)	1,474 (23.0)	457 (15.8)	376 (16.0)
	50 - <60	616 (35.4)	261 (33.2)	182 (29.3)	665 (32.4)	266 (31.1)	238 (32.8)	926 (35.5)	422 (34.0)	348 (34.4)	2,207 (34.5)	949 (33.0)	768 (32.6)
	60 - <70	348 (20.0)	210 (26.6)	161 (26.0)	477 (23.2)	246 (28.7)	187 (25.8)	579 (22.3)	336 (27.0)	283 (28.0)	1,404 (22.0)	792 (27.5)	631 (26.7)
	70 - <80	168 (9.6)	121 (15.4)	110 (17.8)	183 (9.0)	133 (15.5)	113 (15.6)	228 (8.8)	186 (15.0)	167 (16.4)	579 (9.0)	440 (15.3)	390 (16.6)
	>=80	31 (1.8)	25 (3.2)	20 (3.2)	39 (2.0)	20 (2.4)	31 (4.2)	33 (1.2)	49 (4.0)	31 (3.0)	103 (1.6)	94 (3.2)	82 (3.3)
	Total	**1,738 (100)**	**787 (100)**	**620 (100)**	**2,048 (100)**	**855 (100)**	**725 (100)**	**2,611 (100)**	**1,240 (100)**	**1,014 (100)**	**6,397 (100)**	**2,882 (100)**	**2,359 (100)**
Female	20 - <30	2 (0.6)	0 (0)	1 (0.4)	1 (0.2)	1 (0.4)	2 (0.6)	0 (0)	1 (0.2)	1 (0.2)	3 (0.2)	2 (0.2)	4 (0.4)
	30 - <40	7 (2.2)	1 (0.4)	1 (0.4)	4 (1.2)	4 (1.4)	9 (2.8)	11 (2.4)	7 (2.0)	13 (2.8)	22 (2.0)	12 (1.2)	23 (2.2)
	40 - <50	43 (13.6)	22 (7.2)	24 (8.6)	36 (10.6)	15 (5.2)	29 (8.7)	56 (12.5)	15 (4.2)	59 (13.2)	135 (12.2)	52 (5.4)	112 (10.6)
	50 - <60	62 (19.6)	60 (19.5)	69 (24.8)	85 (25.3)	60 (20.5)	73 (22.0)	126 (28.0)	89 (24.5)	100 (22.2)	273 (24.7)	209 (21.8)	242 (22.8)
	60 - <70	99 (31.2)	88 (28.5)	93 (33.5)	94 (27.8)	97 (33.4)	106 (32.0)	118 (26.3)	110 (30.4)	132 (29.4)	311 (28.2)	295 (30.8)	331 (31.2)
	70 - <80	79 (25.0)	108 (35.2)	72 (25.9)	99 (29.3)	81 (27.7)	78 (23.3)	111 (24.6)	112 (31.0)	111 (24.6)	289 (26.2)	301 (31.4)	261 (24.6)
	>=80	25 (7.8)	28 (9.2)	18 (6.4)	19 (5.6)	33 (11.4)	35 (10.6)	28 (6.2)	28 (7.7)	34 (7.6)	72 (6.5)	89 (9.2)	87 (8.2)
	Total	**317 (100)**	**307 (100)**	**278 (100)**	**338 (100)**	**291 (100)**	**332 (100)**	**450 (100)**	**362 (100)**	**450 (100)**	**1,105 (100)**	**960 (100)**	**1,060 (100)**