

CHAPTER 3: CLINICAL PRESENTATIONS & INVESTIGATIONS

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Patient's heart rate and blood pressure were recorded at the beginning of PCI procedures in this registry. The mean heart rate was 71.3 (SD 15.65) beats per minute, mean systolic blood pressure (SBP) was 139.8mmHg (SD 26.2) and diastolic blood pressure (DBP) was 76.9mmHg (SD 13.0).

Thrombolysis In Myocardial Infarction (TIMI) risk index is derived from age, heart rate (HR) and systolic blood pressure (SBP), i.e. TIMI Risk Index (TRI) = $[HR \times (age/10)^2] / SBP$. The three strata of risk categories are: low (<30), intermediate (30-70), and high (>70). This simple risk index provides important information about mortality in patients across the spectrum of myocardial infarction, ST Elevation Myocardial Infarction (STEMI) and Non-ST Elevation Myocardial Infarction (NSTEMI). The majority of cases (94%) in this cohort had low TIMI risk index.

Eighty five percent of patients were in sinus rhythm. Atrial fibrillation was noted in 1% of them. Congestive heart failure was noted at the time of PCI procedure in 4% of cases (n=160). New York Heart Association (NYHA) classes for the cohort are as follow: class I, 67%; class II, 17%; class III, 3%; class IV, 1%. Chronic stable angina was recorded in 57% of cases. Accordingly the Canadian Cardiovascular Society Score for angina (CCS) is: class I, 33%, class II, 36%, class III, 5% and class IV, 3%.

Acute coronary syndromes comprise of 20% (n=784), of which approximately 42% was STEMI, 30% was NSTEMI and 24% was unstable angina. The majority of patients were presented late (refer to Table 3.5). Cardiogenic shock was reported in 68 patients (approximately 2%). Left ventricular ejection fraction (LVEF) was noted only in 796 procedures (approximately 25% of cases), with a mean LVEF of 51.5% (SD 13.5%). Primary infarct PCI was performed in 18% of STEMI, 58 cases out of the documented 330 STEMI cases. The median door-to-balloon time was 93.5 minutes.

Summary

1. Chronic stable angina was noted in 57% of cases, with the majority of them in CCS class I-II.
2. The majority of patients had low TIMI risk index, and only 4% had congestive heart failure.
3. Acute coronary syndromes comprise of 20% of cases. Cardiogenic shock was noted in approximately 2% of the cases.
4. Primary infarct PCI was performed in 18% of STEMI, with a median door-to-balloon time of 93.5 minutes.

References

1. Wiviott S.D. Application of the Thrombolysis In Myocardial Infarction Risk Index in Non-ST-Segment Elevation Myocardial Infarction Evaluation of Patients in the National Registry of Myocardial Infarction., *Journal of American College of Cardiology*. 2006; 47:1553– 8
2. Wiviott S.D. Performance of the Thrombolysis In Myocardial Infarction Risk Index in the National Registry of Myocardial Infarction-3 and -4: A Simple Index That Predicts Mortality in ST-Segment Elevation Myocardial Infarction. *Journal of American College of Cardiology*. 2004; 44:783–9

Table 3.1 Patient clinical status at time of PCI procedure, NCVD-PCI Registry, 2007

	Total No. of Procedures=3920	
	n	%
Clinical examination		
Heart rate at presentation, beats/minute (n=3624)		
Mean(SD)	71.34 (15.68)	
Median, (min,max)	69 (25,181)	
Not Available	296	8.2
Systolic blood pressure,mmHg (n=3623)		
Mean(SD)	139.71 (26.16)	
Median, (min,max)	139 (62,227)	
Not Available	297	8.2
Diastolic blood pressure, mmHg (n=3626)		
Mean(SD)	76.95 (13)	
Median, (min,max)	78 (13,120)	
Not Available	294	8.1
TIMI Risk Index (TRI) (n=3526)		
Mean(SD)	17.22 (7.81)	
Median (min,max)	16 (3,90)	
Not Available	394	11.2
TRI Classification, no. (%)		
Low <30	3320	94.2
Intermediate 30-70	200	5.7
High >70	6	0.2
Baseline ECG, no. (%)		
Sinus rhythm	3339	85.2
Atrial fibrillation	31	0.8
2 nd /3 rd AVB	22	0.6
LBBB	20	0.5
RBBB	22	0.6
Cardiac Status at PCI Procedure		
Congestive heart failure, no. (%)		
Yes	160	4.1
No	3664	93.5
Not Available	96	2.4

	Total No. of Procedures=3920	
	n	%
NYHA, no. (%)		
NYHA I	2628	67
NYHA II	647	16.5
NYHA III	101	2.6
NYHA IV	29	0.7
Not Available	515	13.1
Functional ischaemia, no. (%)		
Not Applicable	3002	76.6
Positive	704	18
Negative	50	1.3
Equivocal	31	0.8
Not Available	133	3.4
Canadian Cardiovascular Score (CCS), no. (%)		
CCS 1	1277	32.6
CCS 2	1405	35.8
CCS 3	182	4.6
CCS 4	128	3.3
Asymptomatic	270	6.9
Not Available	658	16.8
Ejection Fraction (EF) status, no. (%)		
Mean(SD)	792	
Median (min,max)	51.43(13.44)	
Not Available	53 (18,80)	
	3128	79.8
Cardiogenic shock, no. (%)		
Yes	67	1.7
No	3853	98.3
Intra-Aortic Balloon Pump (IABP), no. (%)		
Yes	69	1.8
No	3760	95.9
Acute Coronary Syndrome, no. (%)		
Yes	780	19.9
No	3041	77.6
Not Available	99	2.5
ACS Type, no. (%)		
STEMI	330	42.3
NSTEMI	233	29.9
UA	192	24.6
Not Available	25	3.2

	Total No. of Procedures=3920	
	n	%
ACS Symptom Onset, no. (%)		
<6 hours	112	14.4
6-24 hours	118	15.1
>24 hours-7 days	309	39.6
Not Available	241	30.9
STEMI, no. (%)		
Anterior	148	44.8
Non-anterior	100	30.3
Not Available	82	24.8
Ejection Fraction (EF) status, (n=792)		
Mean(SD)	51.43(13.44)	
Median (min,max)	53 (18,80)	
Not Available	3128	79.8
Killip class, no. (%) in STEMI only		
I	157	47.6
II	50	15.2
III	15	4.5
IV	26	7.9
Not Applicable/Not Available	82	24.8
STEMI : Time-to-treatment analysis		
Symptom-to-door (n=52)		
Mean(SD)	172.25(140.81)	
Median (min,max)	123.5 (0,659)	
Not Available	278	84.2
Door-to-balloon (n=58)		
Mean(SD)	116.43 (123.88)	
Median (min,max)	93.5 (0,868)	
Not Available	53	47.7
Transfer time (n=24)		
Mean(SD)	71.75(88.12)	
Median (min,max)	51.5 (0,300)	
Not Available	87	78

Figure 3.1.1 Distribution of functional ischaemia, by PCI procedures performed, NCVD-PCI Registry, 2007

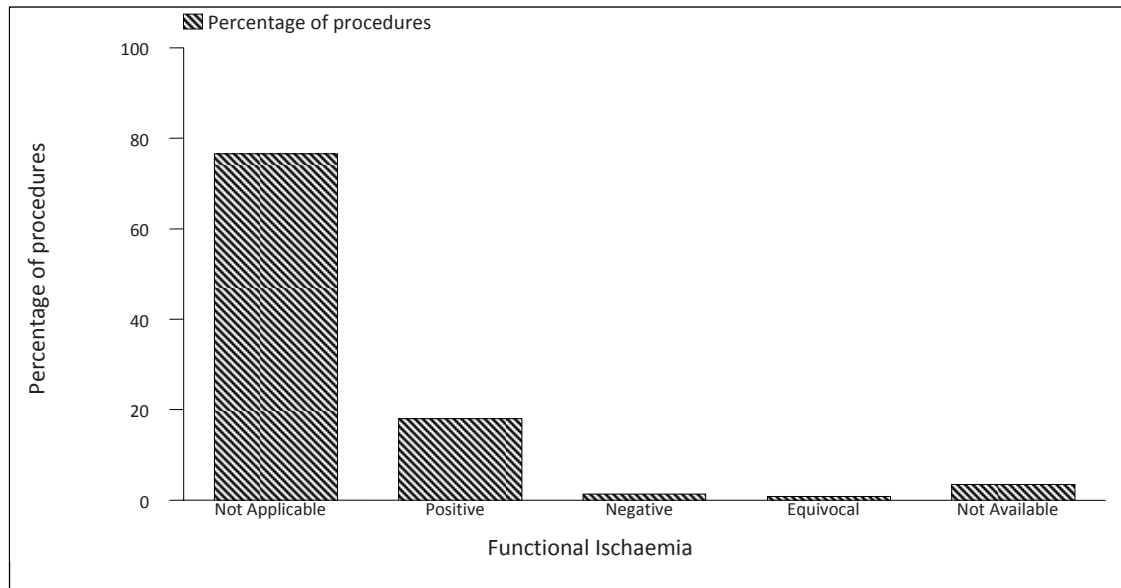


Figure 3.1.2 Distribution of ACS stratum, NCVD-PCI Registry, 2007

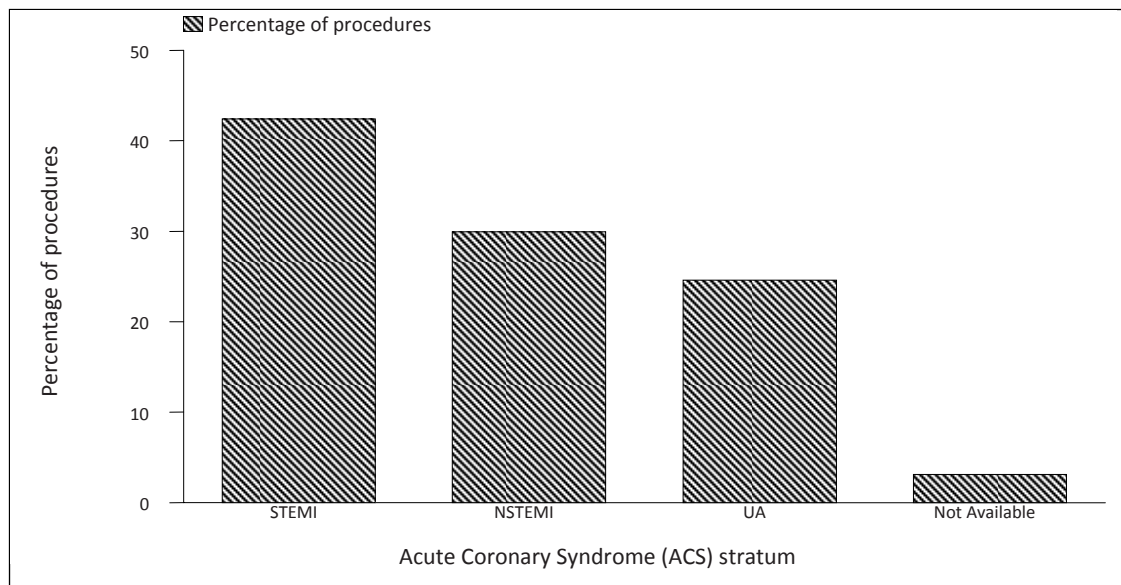


Figure 3.1.3 TIMI Risk Index classification, by PCI procedures performed, NCVI-PCI Registry, 2007

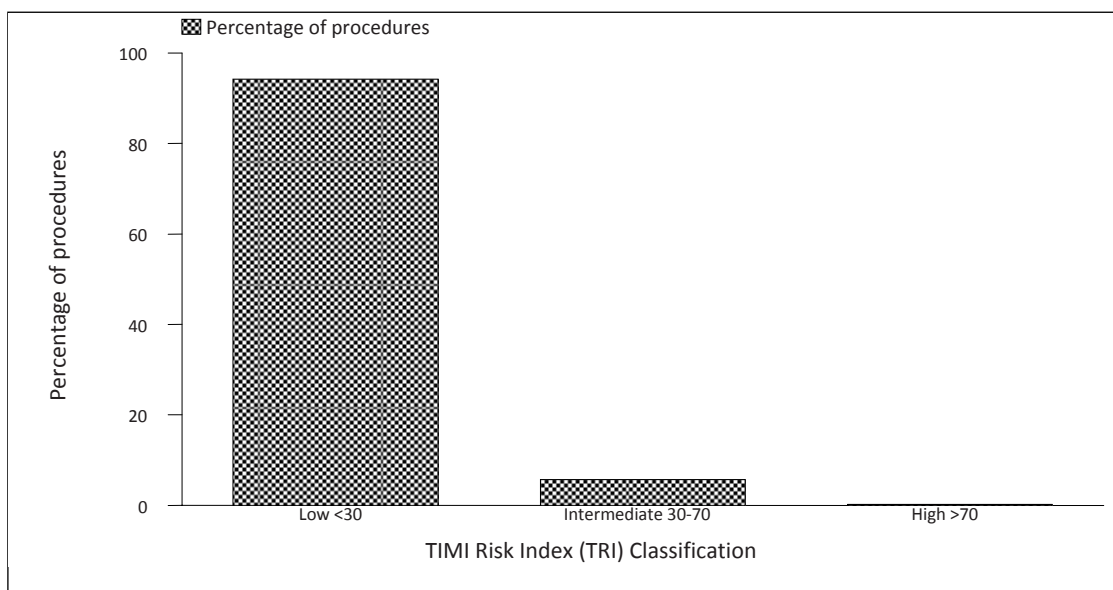


Table 3.2 Time to treatment for STEMI, comparing patients with or without transfer, NCVI-PCI Registry, 2007

	With transfer		Without transfer	
	mean	SD	mean	SD
N	44		8	
Symptom- to -door (minutes)	165.4	146.27	210	105.36
N	20		38	
Door- to -balloon (minutes)	91.1	97.25	129.8	135.12
N	24		-	-
Transfer- to-PCI centre (minutes)	71.75	88.12	-	-
N	17		38	
Symptom- to- balloon (minutes)	322.5	165.11	287.2	149.95

Table 3.3 Comparison of heart rate according to PCI status, NCVD-PCI Registry, 2007

Heart rate (beats/min)	Elective		Urgent		Rescue		Primary		Not Available	
	No.	%	No.	%	No.	%	No.	%	No.	%
<=60	624	18	26	14	7	9	11	11	3	18
60-80	2011	57	89	47	23	30	35	34	9	53
> 80-100	527	15	44	23	27	36	34	33	1	6
>100	104	3	18	9	12	16	18	17	1	6
Not Available	267	8	13	7	7	9	6	6	3	18
Total	3533	100	190	100	76	100	104	100	17	100

Table 3.4 Comparison of heart rate according to ACS subtypes, NCVD-PCI Registry, 2007

Heart rate (beats/min)	STEMI		NSTEMI		UA		NA	
	No.	%	No.	%	No.	%	No.	%
<=60	36	10.9	38	16.3	25	13	5	20
60-80	150	45.5	122	52.4	109	56.8	13	52
> 80-100	85	25.8	44	18.9	37	19.3	4	16
>100	41	12.4	17	7.3	5	2.6	1	4
Not Available	18	5.5	12	5.2	16	8.3	2	8
Total	330	100	233	100	192	100	25	100

Table 3.5 Duration of symptom at presentation for STEMI and NSTEMI patients, NCVD-PCI Registry, 2007

ACS Symptom Onset	STEMI		NSTEMI	
	No.	%	No.	%
<6 hours	92	27.9	10	4.3
6-24 hours	69	20.9	27	11.6
>24 hours – 7 days	111	33.6	87	37.3
Not Available	58	17.6	109	46.8
Total	330	100	233	100