THE PROGNOSTIC ROLE OF MID-RANGE EJECTION FRACTION FOLLOWING ST ELEVATION MYOCARDIAL INFARCTION

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Introduction The newly-defined group of heart failure with mid-range ejection fraction (mrEF) is increasingly established as a distinct entity among chronic heart failure patients. In the acute setting, nonetheless, there is lack of well-defined pathways to manage patients with mrEF following ST-segment elevation myocardial infarction (STEMI). Whether the mrEF group has different demographic features and/or altered prognosis from other EF categories are yet to be determined. We sought to investigate the long-term cardiovascular outcomes of mrEF post STEMI and to identify if there were any clinical features that may help identify those who are at increased risk.

Methods Consecutive patients undergoing primary PCI from a large volume single centre were enrolled. Reduced EF (<40%), mrEF (40- 50%) and preserved EF (>50%) were defined using the European Society of Cardiology recommended cut-offs. Primary endpoint was defined as composite of death, re-admission with heart failure, sustained ventricular arrhythmia or implantable cardioverter defibrillator (ICD) over three years follow-up.

Results 552 patients were included in this study. Mean age was 63 ±13 years and 75% were male. The median EF was 50% (40- 55). 21% of patients were classified as reduced EF, 41% as mrEF, and 38% with preserved EF. There were

significant differences across three subgroups (reduced EF, mrEF, and preserved EF respectively) in age (66 ±13, 62 ±13, 62 ±12, P= 0.017), troponin value [4606 (1589-10000), 2819 (1059- 6347), 902 (329- 2869), (P<0.001)] and proportion of patients with normal renal function (69%, 82%, 88%, P<0.001) and anterior STEMI (70%, 45%, 20%, P<0.001).

There was a stepwise increase in the primary endpoint according to the EF category 6.2%, 18.5%, 34.8% P<0.001 (figure 1); hazard ratio (HR) for mrEF versus preserved EF 3.25 (95% CI 1.74 to 6.05), P<0.001, and HR for mrEF versus reduced EF 0.48 (95% CI 0.31 to 0.74, P= 0.001. The difference was derived from each of the primary components i.e. death (3.3%, 10.1%, 17.4%, P<0.001), re-admission with heart failure (2.9%, 6.2%, 13%, P= 0.002), and ventricular arrhythmia/ICD implantation (0%, 4.8%, 12.2%, P<0.001).

Abstract 96 Figure 1

Abstract 96 Table 1 Predictors of clinical outcomes in patients with mrEF

	mrEF			
	Univariate		Multivariate	
	HR (95%CI)	P value	HR (95%CI)	P value
Age	1.05 (1.02- 1.07)	<0.001	1.03 (1.00- 1.06)	0.046
Male	0.66 (0.34- 1.27)	0.21	-	
Diabetes	1.73 (0.85- 3.53)	0.13	-	
Hypertension	1.77 (0.96- 3.29)	0.067 [†]	1.23 (0.64- 2.36)	0.54
Normal kidney function	0.26 (0.14- 0.49)	<0.001	0.44 (0.20- 0.93)	0.032
Anterior STEMI	0.90 (0.49- 1.65)	0.73	-	
Troponin*	1.00 (0.99- 1.01)	0.55	-	

*Per 100 ng/dL increase, P values of less than 0.10 were included in the multivariable model.