Trends in reperfusion therapy for acute ST-segment elevation myocardial infarction in an academic PCI centre in the metropolitan area of a developing country

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Background: Long-term reports on reperfusion therapy for acute ST-segment elevation myocardial infarction (STEMI) in developing countries are scarce.

Purpose: We reported changes in acute reperfusion therapy for STEMI that have been observed over time in an academic tertiary care percutaneous coronary intervention (PCI) centre that hosting a STEMI network in the large metropolitan area of Jakarta, Indonesia since 2010 and covering around 11 million inhabitants.

Methods: A retrospective analysis was performed in 6336 patients with STEMI who admitted to the emergency department of a PCI centre in 2008 (before STEMI network introduction), and during 2011 to 2018.

Results: Among STEMI patients admitted during 2011–2018 (mean age: 56±10 years, 86% male), 57.6% had anterior wall myocardial infarction, and 71.3% presented with Killip classification I. Compared with the period 2011–2014 (N=2766), patients who were admitted in the period 2015–2018 (N=3250) were receiving more primary percutaneous coronary intervention (PCI) (61.6% vs. 44.2%, P<0.001) with shorter door-to-device time (median 72 min versus 97 min, P<0.001), and less in-hospital fibrinolytic therapy (2.7% vs. 4.8%, P<0.001). The percentage of STEMI patients who did not receive reperfusion treatment decreased from 51% to 35.5% (P<0.001). In-hospital mortality declined from 10% in 2008 (before the STEMI network was initiated) and 8% in 2011 to 6.4% in 2018 (P for trends = 0.05). Multivariable analysis showed that primary PCI was significantly associated with better in-hospital survival (adjusted odds ratio, 0.52; 95% confidence interval, 0.42 to 0.65, P<0.001).

Conclusion: The data indicate that the introduction of a STEMI network resulted in more patients receiving timely primary PCI and lower early mortality rates in recent years.

Table 1. Multivariable analysis for predicting in-hospital mortality

	Odds ratio	95% confidence interval	P-value
Age >65 years	2.0	1.57–2.54	<0.001
Female	1.26	0.96–1.66	0.09
Off-hours admission	1.23	1.00–1.52	0.06
Anterior infarction	0.83	0.67–1.03	0.09
Symptom onset 7–12h	1.41	1.10–1.82	0.01
Fillip class II to IV	4.11	3.30–5.11	<0.001
Diabetes mellitus	1.87	1.51–2.33	<0.001
Hypertension	0.82	0.66–1.02	0.08
Primary PCI	0.52	0.42–0.65	<0.001