

Primary percutaneous coronary intervention for ST-elevation myocardial infarction in Hong Kong

To the Editor—In the October 2010 issue, Cheung et al¹ published Hong Kong's first report on primary percutaneous coronary intervention (PPCI) for ST-elevation myocardial infarction (STEMI) in a regional hospital. It offered insights into the obstacles facing our current reperfusion services, and highlighted the lack of local data and public health education on this topic.

We agree with the authors that timely PPCI is superior to thrombolytic therapy,² but most Hong Kong hospitals are still routinely undertaking thrombolysis rather than putting systems in place to deliver PPCI on a 24/7 basis. Data on the proportions of STEMI patients who underwent PPCI are lacking.

Cheung et al¹ stated that only 41% of their patients underwent PPCI within the American College of Cardiology/American Heart Association–recommended door-to-balloon time (DTBT) of 90 minutes, and there were further delays out-of-hours. The authors concluded that achieving these targets was “very difficult in real-life environments”, and a 24-hour cardiology service was “difficult to achieve locally”. We agree that it may be difficult, but it is not impossible to do so.

The solution lies in better organisation, from the time of symptom onset, through the ambulance service, to the emergency department and on to PPCI at the earliest opportunity. Selected regional hospitals could establish high-volume PPCI centres with high-volume operators in the New Territories, Kowloon, and Hong Kong Island. The service needs to run 24/7, with pre-hospital electrocardiogram (ECG) acquisition and interpretation, direct admission from the community for appropriate patients, standardised referrals and treatment protocols, inter-hospital transfer agreements, and a comprehensive training and quality assurance programme. This model could collectively target the diagnostic, resource, logistical and technical challenges identified by the authors, and has successfully reduced DTBT with improvements in morbidity and mortality in many countries.³

References

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The main focus of Cheung et al's study was on DTBT. However, more than two thirds of the total ischaemic time in STEMI occurs in the pre-hospital setting.⁴ Care provided by the ambulance service is therefore pivotal in the survival of such patients. The Hong Kong ambulance service should train and equip its staff to undertake 12-lead ECGs in the pre-hospital arena, use telemedicine technology as required, and activate the catheterization team early when needed. This practice has been successfully achieved in other parts of the world.⁵ They should also administer aspirin to patients with chest pain of presumed cardiac origin, as is done by many overseas pre-hospital services.

Hong Kong should also start a prospective STEMI registry with full data collection to allow future service development to be implemented based on evidence. This would enable us to audit patient outcomes against international targets, monitor progress, identify problems, and make improvements in training and care delivery.

Clearly making these changes would involve major commitments from all health care professionals as well as overcoming critical logistical, economic and political issues, but none of these are insurmountable when our patients stand to benefit. The 15% 1-year mortality post-PPCI reported by Cheung et al was evidently higher than the 5 to 8%⁵ in other countries. We must act now to improve our PPCI service.

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