

# Highlights of the treatment pathways panel discussion video

**ACS in Action** is an eLearning website in Hong Kong which features online modules focused on Acute Coronary Syndrome (ACS) management. The website aims to encourage knowledge and experience sharing across disciplines for the betterment of ACS management in Hong Kong.

ACS in Action features patient journey videos based on real ACS cases and panel discussion videos on ST elevation myocardial infarction (STEMI), non-ST elevation myocardial infarction (NSTEMI) and treatment pathways. The following is a summary of the treatment pathways panel discussion. The full video is available at <http://acsinaction.org>.

## The importance of establishing and regularly revising a hospital protocol

Although there are guideline recommendations for managing ACS, in reality, treatments are often applied in an inconsistent way due to the absence of a protocol. It is therefore important to establish an easy-to-follow protocol to optimize patient outcomes. Addressing key factors which are critical in improving patient outcomes such as the diagnostic challenges for patients with NSTEMI, availability of resources, as well as use of hospital formularies can influence the approach and subsequently the establishment of a protocol.

## Tips for establishing a hospital protocol

Implementing a comprehensive protocol may require a lot of effort and time. An effective way to streamline the process is to adapt a pre-existing protocol from another hospital. Aside from gaining support from the hospital administration, the participation of a multidisciplinary team is important, which should include:

- Specialists in emergency medicine
- Specialists in cardiology
- Internists
- Cardiac nurses
- Triage nurses
- Pharmacists

It may take several months to collect data on the impact of a new protocol on outcomes such as reinfarction rate, depending on the volume of patients in your centre. Thus, prospectively recording intermediate data on time intervals at each step in the protocol (ie, starting from patient registration to wire crossing) should be considered. This approach is useful in identifying time-limiting gaps in management and improving door-to-balloon time (DTBT).

## Primary percutaneous coronary intervention (PPCI) is the preferred reperfusion strategy

- The European Society of Cardiology (ESC) guidelines stated that PPCI should be the preferred reperfusion strategy in patients with STEMI within 12 hours of onset if it can be performed within 120 minutes, and fibrinolysis should be performed otherwise.<sup>1</sup>
- Data from the Danish Acute Myocardial Infarction 2 trial demonstrated that the 8-year cumulative incidence of death or reinfarction rate was significantly lower in patients who received PPCI than fibrinolysis (HR, 0.78).<sup>2</sup>

# Reducing short term mortality rate by reducing DTBT or diagnosis-to-wire time – every minute counts

According to international guidelines, for individuals who present to a PCI-capable hospital, the diagnosis-to-wire time should be targeted within 60 minutes; if transfer to a PCI-capable hospital is required, the diagnosis-to-wire time should be within 90 minutes.<sup>1</sup>

The Figure is an illustration of a dose-response meta-analysis of DTBT and risk of short-term mortality.<sup>3</sup>

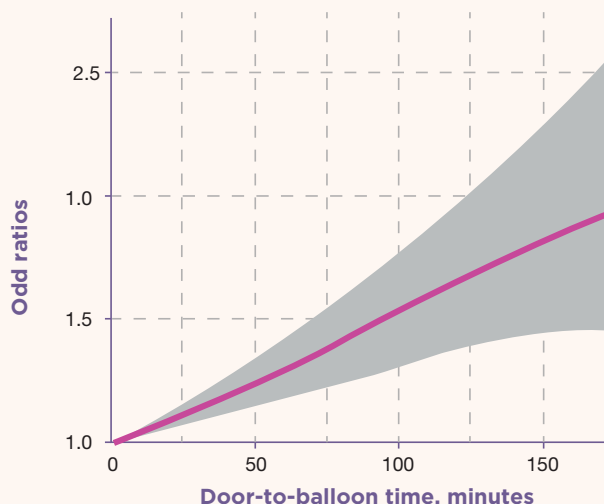
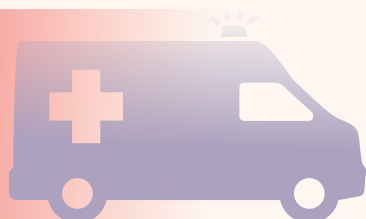


Figure. Dose-response meta-analysis of DTBT and risk of short-term mortality.<sup>3</sup>



## Using quantitative assessments to stratify NSTEMI patients

The high-sensitivity troponin assay and the rule-in/rule-out algorithm are commonly for diagnosing NSTEMI. However, the use of quantitative assessments such as the GRACE score is also important in the management of NSTEMI patients, especially for junior fellows, and may act as a predictor for early clinical outcomes.

## Timely administration of a P2Y<sub>12</sub> inhibitor prior to PCI

To reduce the risk of early stent thrombosis and peri-procedural myocardial infarction, P2Y<sub>12</sub> inhibitors should be administered as early as possible, preferably after a diagnosis is made in most cases. The availability of more potent and effective P2Y<sub>12</sub> agents shifted the treatment paradigm for in-hospital pre-treatment in ACS patients. In the PLATO trial, ticagrelor was superior to clopidogrel and significantly reduced the incidence of death caused by myocardial infarction or stroke (9.8% vs 11.7%;  $p < 0.001$ ), with no significant difference in rate of major bleeding (11.6% vs 11.2%;  $p = 0.43$ ).<sup>4</sup>

## Improving compliance to long-term dual antiplatelet therapy (DAPT)

Aside from prompt medical treatments, enhancing patient education is also essential in reducing the risk of late and very-late stent thrombosis. The ESC guidelines recommend clinicians to prescribe DAPT in the form of ticagrelor 60 mg twice daily, coupled with aspirin for more than 12 months. However, the duration of DAPT should be individualized, such as, to consider patients' bleeding risk scores in making clinical judgements. Extended treatment can be considered for up to 3 years in patients who convey high ischemic risk, and for individuals with a high bleeding risk, the duration of DAPT should be reduced.<sup>1</sup>

## SUMMARY



The ESC guidelines provide useful insights in ACS management; however, they may not be applicable to all hospital settings. Establishing a protocol will therefore be useful in optimizing management strategy and clinical outcomes and should address key elements such as using PPCI as the preferred reperfusion strategy, reducing DTBT, using risk stratification in NSTEMI patients and prescribing patients a P2Y<sub>12</sub> inhibitor for as pretreatment and maintenance therapy.

### REFERENCES

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