



**Service Priorities and Programmes**  
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**A Pilot Study of Coronary Computed Tomography Angiography Service in Accident and Emergency Department**

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**Introduction**

Most of the patients presented with chest pain at the Accident and Emergency Department (AED) do not have obstructive coronary artery disease (CAD), thus not requiring admission for evaluation. Coronary Computed Tomography Angiography (CCTA) allows coronary vasculature to be evaluated rapidly and non-invasively. The provision of CCTA service at AED allows a more efficient way to manage chest pain patients with low to intermediate risk of CAD. This is the first pilot study between AED and radiology department in Hong Kong.

**Objectives**

To improve clinical safety in managing patients with low to intermediate risk of CAD in AED. To allow early detection of CAD and provision of definitive intervention.

**Methodology**

Thirty-four chest pain patients with low to intermediate risk of CAD who underwent CCTA in PMH AED in the period of March – August 2017 are being evaluated. Patient's health records are being followed up till 6 months after presented with chest pain at AED for major clinical outcomes.

**Result**

34 patients were recruited to this pilot study, including 19 males (56%) and 15 females (44%). Age ranged from 34 to 78 (mean  $63.3 \pm 8.98$ ). 19 were classified as low risk and 15 were intermediate risk by the HEART score (mean  $3.79 \pm 1.3$ ). Mean time to CCTA was  $39 \pm 30$  hours. CCTA revealed 24 (71%) with  $<50\%$  stenosis and 10 (29%) with  $>50\%$  stenosis. 8 patients with  $>50\%$  stenosis (80%) had normal serial Troponin I level and without ST changes in serial 12-lead ECG. In the 6 months follow-up period, major advance cardiac events (MACE) in patients with  $<50\%$  stenosis was 0. MACE in the  $>50\%$  stenosis group: 0 cardiac death, 1 non-fatal myocardial infarction (after refusal of re-vascularization), 6 re-vascularization, 3 conservative treatment. To

conclude, the application of CCTA in AED can be valuable in identifying significant obstructive coronary artery disease in the low to intermediate risk group, and hence advancing the definitive treatment for them. An insignificant CCTA result in AED may also be used as a negative predictor of cardiovascular event in short term. Further investigation is required to evaluate the cost and the long-term benefits in application of CCTA in AED.