Hong Kong Experience-
Primary PCI in
Queen Elizabeth Hospital

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Kowloon Central Cluster

HA Convention 2012
Background (1)

1. Heart disease is the major mortality and morbidity worldwide
2. Second commonest cause of death in Hong Kong (15.5 % of all deaths, DH 2010)
3. Coronary heart disease is the dominating component causing 70 % death of heart disease (DH, 2010)
4. Acute Myocardial Infarction (AMI) is the leading cause of mortality and morbidity

5. Major challenge in all HA hospitals in Hong Kong

6. With the advancement of technology, invasive approach - Primary Percutaneous Intervention (PCI) is superior to fibrinolysis in terms of reducing mortality and complications

7. Timely and safe management is the crucial element for success
Clinical Practice Guideline

[Management of ST-Elevation Myocardial Infarction]

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Primary PCI vs Fibrinolytics

• If eligible for reperfusion therapy:

A) < 3 hours onset and the expected door-to-balloon (DTB) time minus the expected door-to-needle time is:
  • ≤ 1 hour, primary PCI is generally preferred
  • ≥ 1 hour, fibrinolytic therapy (fibrin-specific agents) is generally preferred

B) > 3 hours of onset, primary PCI is generally preferred and should be performed with DTB ≤ 90 minutes
Primary PCI at QEH

- **Cardiac Rapid Response (CRR) Team**
  was set up in March 2009

- **Members:** Cardiologist on-duty, CCU on-duty cardiac fellow and AMI Nurse
Assess patient eligibility for 1° PCI

Check Cath. Lab. availability

Cardiologist decides on suitability for 1° PCI

Cardiac fellow to obtain consent, cost implication, X-match and blood taking

Patient transferred to Cath. Lab. directly for 1° PCI

CCU/ Cardiac Bed/ General Ward

STEMI Patient in ER

Call Cardiac Nurse (Dect: 7455)

Call CRR team
(1 cardiologist + 1 CCU cardiac fellow)

Assess patient eligibility for 1° PCI
QEH Cardiac Rapid Response Team
March 2009 - March 2012

Overview (1):

- Total no. of calls for Primary PCI: 170 calls
- 135 patients with cath lab visits
- 113 Primary PCI done
- ~ 16 patients admitted to CCU before Cath lab visit (Cath lab was occupied)
- ~ 119 patients directly admitted to Cath lab with 97 patients have PCI done
Overview (2):

- 35 patients with no Cath lab visits after assessment by CRR team:
  - 10 unlikely AMI,
  - 8 poor pre-morbid state,
  - 6 patients are ACS
  - 6 late presentation (> 12 hours)
  - 2 arrest in AED
  - 3 DAMA (tourist; transferred to private)
# CRR (inactivated) vs CRR

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<thead>
<tr>
<th></th>
<th>CRR inactivated</th>
<th>CRR activated</th>
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<tr>
<td><strong>No. of patients</strong></td>
<td>50</td>
<td>97</td>
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<tr>
<td><strong>Age</strong></td>
<td>61.74 (SD=14.99)</td>
<td>64.70 (SD=12.70)</td>
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<tr>
<td><strong>Gender</strong></td>
<td>39 M, 11 F</td>
<td>85 M, 12 F</td>
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<td><strong>30-day Mortality</strong></td>
<td>18% (9/50 deaths)</td>
<td>9.2% (9/97 deaths)</td>
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Mean Door-to-Balloon Time

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<tr>
<th>Year</th>
<th>Minutes</th>
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<tr>
<td>2009-2010</td>
<td>288.58</td>
</tr>
<tr>
<td>2010-2011</td>
<td>260.95</td>
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<tr>
<td>2011-2012</td>
<td>305.18</td>
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- CRR Inactive
- CRR Activiated
QEH also provide 24 hours Primary PCI service for:

- AMI patients ≤75 years old with haemodynamic or electrical instability including cardiogenic shock
- AMI patients contraindicated for fibrinolytic therapy
Future Plans

• PCI for STEMI patients received lytics within 24 hours
• AMI Nurse Clinic for early discharge of AMI patients
• 24/7 Primary PCI for all STEMI
Challenges for Primary PCI in HK

- Public education to recognize AMI early
- Ambulance to be equipped with ECG facility which can be faxed to designated AED/cardiac centre
- Networking with designated Primary PCI centres
Challenges for Primary PCI in HK

• Direct transfer of STEMI patients from ambulance to CCL or very short stay in AED
• Dedicated Primary PCI teams
• Manpower issues (cardiologists, nurses, radiographers)
• Availability of CCU beds