Door to Balloon Time Challenges and Improvements

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Objectives

• Know the important role of ER/Cath lab personnel in the STEMI pathway (Door to Balloon time)

• Understand the challenges and the improvement plan to decrease Door to Balloon time
Introduction

• Early reperfusion therapy is optimal for salvaging cardiac muscle and improves survival of the patient with STEMI diagnosis.

• Door-to-balloon time is a quality measurement monitored by hospitals in the treatment of a STEMI.

Definitions

**First medical contact (FMC) to PCI**

Time of STEMI diagnosis at or before ED arrival to successful PCI.
Clinical Pathway of STEMI patient

STEMI patient who is candidate for reperfusion
Initially seen at PCI capable hospital
Send to Cath Lab for primary PCI FMC to Device time is < 90 min

Clinical pathway of STEMI patient
Pre hospital to ED door

Transport method
• Self transport or Walk in Patient
• By EMS

Note: It is very important to know the onset of chest pain

Systematic Approach
Critical Minutes (ED door to ED discharge < 60 min)

Triage to ECG and diagnosis

ECG to STEMI alert

STEMI alert to cath lab team arrival

ED discharge to Cath lab

Challenges and Improvements (ED door to ED discharge)
Challenges

1. Triage assessment (door to ECG).
2. Lack of ED physicians involvement in activation.
4. Physician lack of time documentation.
5. Delay of consent and procedure explanation.

Improvement

1. Immediate ECG with chest pain (Door to ECG).
2. Immediate activation by ED physician, link group among team for better communication
3. On going staff education.
4. Electronic documentation system.
5. Procedure explanation and consent for approval done in ER.
Challenge
Transfer time from ED to Cath Lab

Improvement
• Speed up the transfer time and monitor it.
• Location of Cath lab close to ED

Summary
Early Recognition
Early Activation
Early Transfer
STEMI ALERT

Cath Lab Activation Workflow

STEMI Alert

Cath Lab Team
- Anesthesia team
- Perfusionist
- Transportation

Interventionist
Cath Lab Door to PCI time
Cath Lab personnel Role

• Readiness of Cath Lab (Personnel /Equipments)
• Patient preparation (radial versus femoral)
• Vascular access time (radial versus femoral)
• Balloon / Device time
• Complications require interventions before or during balloon/device time

Total time <30 minutes

Critical Minutes

Triage to ECG and diagnosis
ECG to STEMI alert
STEMI alert to cath lab team arrival
ED discharge to Cath lab door

Cath lab door to patient preparation
Stick to balloon / device

ED door to Cath Lab door < 60 min
Cath Lab door to PCI < 30 min

Total time <90 minutes
Challenges and Improvement

(Cath Lab door to PCI)

Challenge
Cath lab team availability after hours

Improvement
• Notifying ED of transfer as soon as first staff arrives in facility
• Team leader assignment/Workflow
**Challenge**
Cath Lab staff Accommodation

**Improvement**
- Specific transportation is organized for the on call team
- Accommodation near hospital is provided

**Challenge**
Delay Stick to balloon time in cath lab

**Improvement**
One view CAG done for non culprit lesion then move to open culprit lesion
Challenge
Lack of regular Multidisciplinary feedback of Data

Improvement
• Involved the Cath Lab/ED team in Monthly Data Analysis and strategic improvement sessions

Challenge
Time synchronisation

CARDIAC CATH LAB

EMERGENCY DEPARTMENT
Summary

Preparedness

Commitment

Alertness

Door to Balloon Time Experience in AQH (UAE)

• Our DTB project started on Jan 2015
• Aim is to reduce time < 90 min
• It is our Key Performance indicator (KPI’s) in Cathlab
Take home message

Early Recognition

Early Dispatch

Early diagnosis

Early Reperfusion

No institution can have an excellent reputation for cardiac care without an outstanding STEMI treatment program

Time is Muscle

Muscle is Heart

Heart is Life
A team is not a group of people who work together.

A team is a group of people who trust each other.

Simon Sinek