PAROS Literature Review Workshop

Review of Pan Asia Resuscitation Outcome Study (PAROS): Aims, design & data collection

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Background

- Out of Hospital Cardiac Arrest (OHCA) is a global health concern

- Survival rates across Asia are low (1-5%, Singapore 2%) compared to USA or Europe (up to 40%)

  (Ong EHM et al 2003)

- Regional variations in the incidence and outcomes of OHCA have been observed and are likely across Asia as well.

Aims

- To identify the major systemic, modifiable factors for OHCA survival in Singapore and Asia Pacific
- To utilize the inherent variations in Asia-Pacific Emergency Medical Services (EMS) systems for analysis of modifiable risk factors and systemic predictors of survival

Aims cont...

- To enable participating countries to derive relative importance of systemic factors to improve survival from OHCA by:
  - ↑ Bystander Cardiopulmonary Resuscitation(CPR)
  - ↑ Bystander CPR + ↑ Public access defibrillation
  - basic life support (BLS) EMS system + ↓ Response times
  - Developing advanced life support (ALS) EMS
  - Specialized post-resuscitation care

- To provide basis for a major multi-site, intervention trial to improve survival rates for OHCA in Singapore and across Asia

Specific Objectives

- To describe the true population based incidence of OHCA across different countries
  - By excluding some OHCAs, the true population based incidence will be underestimated
- To describe regional variations in the incidence and outcome of OHCA across Asia and beyond
- To compare EMS outcomes for OHCA across regions

Specific Objectives

- To understand the etiology and preventable risk factors for OHCA and predictors of survival across Pan-Asia
  - Is the etiology & risk factors for OHCA different than other CVDs
  - The excluded OHCAs may have severe degree of risk factors, so the magnitude of risk may be underestimated
- To understand geospatial and temporal occurrence of OHCA across regions
- To study differences in the occurrence of OHCA between North American and Asia-Pacific populations

Design

- International Multicenter cohort study

- **Inclusion criteria:**

OHCA patients conveyed by EMS/presented at Emergency Departments (Eds) as confirmed by the absence of pulse, unresponsiveness and apnea

- **Exclusion criteria:**

immediately pronounced dead, and for whom resuscitation is not attempted including decapitation, rigor mortis, and dependent lividity

Taxonomy

- Standardization to facilitate comparison
  - Adopts common taxonomy (Utstein recommendation)
  - Outcomes reporting (Utstein style*) across the Network

- Advantages:
  - Large sample size
  - International nature
  - De-identified data (to facilitate sharing)

* The Utstein style is a standardized reporting format for OHCA that has been adopted by the International Liaison Committee on Resuscitation (ILCOR).

Outcomes

- **Primary outcome:**
  - Survival to hospital discharge or survival to 30 days post cardiac arrest
- **Secondary outcomes:**
  - Return of spontaneous circulation (EMS outcome)
  - Survival to hospital admission (EMS outcome)
  - Neurological status on hospital discharge or on 30th day post cardiac arrest, if not discharged
  - Quality of Life assessment for survivals

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Data Variables

PAROS PAN-ASIAN RESUSCITATION OUTCOMES STUDY

- Variables collected relate to:
  - Bystander CPR
  - Public Access Defibrillation
  - Response times
  - Advanced life support
  - Specialized post-resuscitation care
  - Glasgow-Pittsburg Outcome Categories (Cerebral Performance Category and Overall Performance Category)
  - European Quality of Life – 5 Dimensions (EQ-5D) Health Dimensions and Visual Analog Scale

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Data Collection

- Two modes:
  - Electronic Data Capture System (ePAROS.org)
  - Export Field Entry
- Pre-requisite for ePAROS.org is training how to use
- Progress:
  - Countries gone ‘Live’: Singapore, Malaysia, Thailand
  - Country to go ‘Live’ soon: Dubai
  - Recoding to take place in: Taipei (in progress), Japan, Korea
  - Countries with data already entered on: Singapore, Malaysia

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Important Challenge

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PAN-ASIAN RESUSCITATION OUTCOMES STUDY

❖ Recoding of variables

- Difference in coding for some variables
- To standardize we have to recode
- To write macros for the recoding
- Work towards an XML standard for data transfer
- Existence of some variables incompatible to Utstein style/taxonomy

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Discussion Points

PAROS PAN-ASIAN RESUSCITATION OUTCOMES STUDY

- By excluding some OHCAs, the true population incidence will be underestimated
- Is the etiology & risk factors for OHCA different than other Cardiovascular diseases
- The excluded OHCAs may have severe degree of risk factors, so the magnitude of risk for OHSA, may be underestimated and the prediction of survival overestimated
- The primary outcome (Survival to hospital discharge or survival to 30 days post cardiac arrest) and the secondary outcome on neurological status, and quality of Life will be confounded by in hospital treatment

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Thank You