ECPR in Korea

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CPR in USA
CPR in Korea
Factors for Successful ECPR

- Perfect BLS and ACLS
  - Immediate bystander CPR
  - Good chest compression & ventilation
- Good patient selection
  - Exclude patients with limited life expectancy
- Quick and Right cannulation
  - Availability of devices and skillful team
- Optimal post resuscitation care
  - Extensive evaluation for causes of arrest
  - Organ protection
Who are going to win?
Patient Selection

- **ER**
  - Lack of patient’s information

- **In-hospital cardiac arrest**
  - **Hematologist**
    - “I can fix the blood cancer. You fix the cardiac arrest”
  - **Oncologist**
    - “This patient must live at least one year, if you fix this sudden collapse.”
  - **Interventional cardiologist**
    - “There is no table death in my cath room. Just bring the pump!”
  - **Cardiac surgeon**
    - “I know she will die anyway. But not tonight. Please help me.”

- **Lack of time to gather information and make decision**
Conditions for good patient selection

- Institutional guideline
  - Define contraindications such as unwitnessed arrest, bedridden, etc.
- Immediate contact to cannulation team
  - Quick review for potential contraindications
- Past medical history
  - Availability of family
- Cause of cardiac arrest
Procedure

- Lack of surgical suit
- Lack of surgical instruments
  - Lights, electric cautery, vascular surgical instruments
- Cath room is not always ready for use.
- Lack of skillful personnel in all the time
ECMO in Korea

Number of ECMO procedure

- 2009: 0
- 2010: 500
- 2011: 1000
- 2012: 1500
- 2013: 2000
- 2014: 2500
Heterogeneous quality of ECMO care

Mortality

Unofficial data, 2012

(number of case)
CPR-related ECMO at Samsung Medical Center

- 80~90% of total cases
- 30% of total
Ideal ECMO: Avoid ECPR

Optimal timing of ECMO

Time for decision
Inevitable ECPR or OHCA

Optimal timing of ECMO

Too short time to respond
Evidences
Fulminant myocarditis managed with pulsatile extracorporeal life support; use of Twin Pulse Life support (T-PLS®)

Eun Jeung Cho¹, Joohwe Hong², Hyun Kang³, Ju Won Choe⁴ and Sang-Wook Kim¹
Social aspects of ECPR in Korea

- Koreans generally interested in something new and dramatic.
  - MERS & ECMO
- ECMO is theoretically covered by Korean National Insurance, but not generous.
- Korean health care system needs to be maturated.
  - Cost-effectiveness
  - Government’s financial issues
  - CPR education, Rapid response team, Critical care, etc.
- Korean culture and its change
  - QOL << Survival → QOL < Survival
For Better Practice

- Korean Society of Thoracic & Cardiovascular Surgery
  - Workgroup for ECMO
- Korean Academy of Tuberculosis & Respiratory disease
  - Workgroup for extracorporeal lung support
- Korean Society of Critical Care Medicine
- Korean Society of Emergency Medicine

- We may need one united society for ECMO.
  - Annual joint conference: Thoracic surgery and Pulmonology/Critical care
Summary

- ECPR and ECMO are growing rapidly in Korea
- Clinical practice on ECPR
  - Needs standardization and improvement
  - CPR education for lay people
- Korea will do an important role in the field of ECPR and ECMO.
  - Producing evidences
  - Improving outcomes
- United society for physicians, nurses, technicians who are interested in ECMO is needed.