

CARDIAC SESSION 2: Outcomes in Pediatric Cardiac Disease

Neurodevelopmental and psychological outcomes in CHD survivors (M. Jones): Many children with congenital heart disease (CHD) have neurodevelopmental impairment. Interventions aimed at improving outcomes can be broadly characterized in four areas: 1) fetal, 2) operating room, 3) hospital stay, and 4) medical home. Focusing on making advances in these areas may improve outcomes. For example, studies have shown that every day spent in the ICU reduces children's IQ therefore focusing on exemplary basic care in the ICU to reduce LOS is beneficial. In addition, following AHA guidelines for surveillance and management of children's neurodevelopmental status is an important consideration.

MSOF in Cardiac Patients in the ICU (D. Cooper): Consequences of primary cardiac dysfunction or noncardiac illness (e.g., bronchiolitis) in children with cardiac disease can lead to multi-system organ failure (MSOF) such as cardiac failure, respiratory failure, liver failure, and acute kidney injury. A thorough review of the literature on respiratory failure related to tracheostomy and acute kidney injury was discussed. An important takeaway message from this talk was long-term follow-up for children with acute kidney injury is indicated especially as our adult congenital heart disease population grows.

Are there modifiable risk factors to reduce adverse outcomes that occur in the ICU after cardiac surgery (M. Gaies): Important clarifications to the title are the identification of risks and modification of care to mitigate risks. There are four major areas to consider: 1) patient factors, 2) treatment choices (not discussed), system factors, and quality of care. One modifiable risk factor shared in this talk was on the optimal timing of surgery of complex patients to mitigate risks and improve outcomes. There are no simple answers each health system is different and has unique strengths (and weakness) for mitigating risks.

What is different about resuscitation in children with heart disease (B. Marino): This talk reviewed 1) unique challenges associated with resuscitating children with single ventricle physiology (throughout staged repairs), myocarditis/cardiomyopathy, and pulmonary hypertension, 2) cardiopulmonary interactions, 3) PALS recommendations (focus on appropriate compressions/ventilation), and 4) notification of upcoming AHA guidelines.

The impact of the critical care environment on outcomes (D. Tucker): The impact of unit design and the environment on patient safety was reviewed. Examples of noise pollution (e.g., alarm fatigue) and hospital acquired infections from poor hospital design were examined. There was a call for focused developmentally appropriate patient care and stress reduction interventions in our ICUs.