

Postoperative Care Following Pediatric Cardiac Surgery

Essay

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List of Abbreviations

AP	: Anteroposterior
APTT	: Activated partial thromboplastin time
ASD	: Atrial septal defect
AV	: Atrioventricular
AVSD	: Atrioventricular septal defect
BAS	: Balloon atrial septostomy
BAS	: Balloon atrial septostomy
BIS	: Bispectral index monitoring
BIS	: Bispectral index monitoring
BTS	: Blalock-Taussig shunt
CAVC	: Complete atrioventricular canal
CFAM	: Continuous cerebral function monitoring
CHD	: Congenital heart diseases
CHEOPS	: Children's Hospital of Eastern Ontario Pain Scale
CHF	: Congestive heart failure
CICU	: Cardiac intensive care unite
CMR	: Cardiac magnetic resonance
CO	: Cardiac output
CPAP	: Continuous positive airway pressure

CPB	: Cardiopulmonary bypass
CT	: Computed tomography
CXR	: Chest x ray
2D	: 2 dimension
DIC	: Disseminated intravascular coagulation
EEG	: Electroencephalographic
HCM	: Hypertrophic cardiomyopathy
HLHS	: Hypoplastic left heart syndrome
ICG	: Indocyanine green
ICU	: Intensive care unite
IVC	: Inferior vena cava
MRA	: Magnetic resonance angiography
MRI	: Magnetic resonance imaging
NICO	: Partial CO2 rebreathing Fick monitoring
NICU	: Neonatal intensive care unite
NO	: Nitric oxide
NSAIDs	: Nonsteroidal anti-inflammatory drugs
OPS	: Objective Pain Scale
PA	: Pulmonary artery
PCCO	: Calibrated continuous arterial pulse contour cardiac Output
PDA	: Patent dactusarteriorus

PGE1	: Prostaglandine e 1
PH	: Pulmonary hypertention
PICU	: Pediatric intensive care unite
PT	: Prothrombin time
PVR	: Peripheral vascular resistance
RACHS	: Risk-Adjusted Congenital Heart Surgery
RSV	: Respiratory syncytial virus
RV	: Right ventricle
SIRS	: systemic inflamtory response syndrome
SVAS	: Supravalvar Aortic Stenosis
SVC	: Superior vena cava
SVR	: Systemic vascular resistance
TEG	: Thromboelastogram
TGA	: Transposition of great artries
TOE	: Transoesophageal Echocardiography
TOF	: Tetralogy of fallot
TPN	: Total parenteral nutrition
VAS	: Visual Analogue Scale
VSD	: Ventricular septal defect

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Introduction

Recent development of surgical interventions have contributed to Substantial improvements in morbidity and mortality of children with congenital cardiac defects.

Innovations in achieving early and correct preoperative diagnoses, Operative techniques, methods of extracorporeal circulation and myocardial protection, and renal replacement therapy have encouraged surgeons to attempt surgical correction for more severe cardiac anomalies, more premature babies, and lower-body-weight babies (*Wernovsky et al., 2001*).

Heart surgery in children is done to repair heart defects a child is born with (congenital heart defects) and heart diseases a child gets after birth that need surgery. The surgery is needed for the child's well-being. There are many kinds of heart defects. Some are minor, and others are more serious. Defects can occur inside the heart or in the large blood vessels outside the heart. Some heart defects may need surgery right after the baby is born. For others, your child may be able to safely wait for months or years to have surgery. One surgery may be enough to repair the heart defect, but sometimes a series of procedures is needed (*Bonow et al., 2007*).

The development of cardiopulmonary bypass (CPB) has brought cardiac surgery from a very limited and hazardous endeavor to a routine and relatively safe practice that addresses an incredible variety of diseases and conditions in patients from a few hours to nine or decades old (*Mammen et al., 1985*).

With facilities for accurate diagnosis and scope of complete correction, more and more children and infants are undergoing surgical treatment for congenital heart disease in the neonatal period and infancy, and there is an increasing demand for dedicated personnel for the specialized intensive care of these critically ill children. This has translated into better outcomes in several centers (*Balachandran et al., 2010*).

Pediatric cardiac intensive care has evolved as a distinct limb of efficient pediatric cardiac programs in the developed nations. With increasing demand for congenital heart surgery in the developing nations, concept of pediatric cardiac intensive care units (PCICU) is critical to the success of these programs. In the early years of development of congenital heart surgery, the pediatric cardiac surgeons were primarily responsible for postoperative intensive care. Over the past three decades, other pediatric cardiac professionals (cardiology, cardiac anesthesia, critical care physicians, and

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