CARDIOPULMONARY BYPASS FOR ADULTS WITH CONGENITAL HEART DISEASE

Prof. Maha Nassar

The incidence of congenital heart diseases and approved survival have resulted in increasing numbers of adults with congenital heart disease. Eventually, there will be more adult with congenital heart disease than children. They will require cardiac surgical interventions associated with progression of their congenital heart disease or for age-related disease, such as coronary revascularization. During bypass, anatomical shunts can result in dramatically lower systemic blood flow than pump flow.

Right-t-left shunts carry risks of massive air embolism and double or triple venous cannulation may be necessary. Cannulation of composite reconstructed aortas may be difficult, risking dissection or aortic obstruction, and double arterial cannulation may be indicated. Aberrant coronary arterial and venous anatomy may preclude adequate myocardial preservation with common techniques and can be complicated by aortic insufficiency.

Conventional monitoring, such central venous oximetry, may be misleading. Monitoring, such lactate measurement, near-infrared spectroscopy and transcranial Doppler blood velocity, offer advantages for such patients. The perfusionist need to be aware of such conditions as much congenital aberrancy may present unexpectedly during cardiac surgery.

References
perfusion (2006) 21, 45-53