

Chapter 53

REFERENCES

1. Fyler DC. Report of the New England Regional Infant Cardiac Program. *Pediatrics*. 1980;65(Suppl 2):375.
2. Journois D, Israel-Biet D, Pouard P, et al. High-volume, zero-balanced hemofiltration to reduce delayed inflammatory response to cardiopulmonary bypass in children. *Anesthesiology*. 1996;85(5):965-976.
3. Rudolph AM. *Congenital Diseases of the Heart*. Chicago, IL: Year Book Medical Publishing; 1974:79-87.
4. Moorthy SS, Dierdorf SF, Krishna G, Caldwell RL, Alcorn DM. Transient hypoxemia from a transient right-to-left shunt in a child during emergence from anesthesia. *Anesthesiology*. 1987;66(2):234-235.
5. Nadas AS, Fyler DC. *Pediatric Cardiology*. Philadelphia, PA: WB Saunders; 1972.
6. Kontras SB, Sirak HD, Newton WA Jr. Hematologic abnormalities in children with congenital heart disease. *JAMA*. 1966;195(8):611-615.
7. Haworth SG. Normal pulmonary vascular development and its disturbance in congenital heart disease. In: Godman MJ, ed. *Paediatric Cardiology*. New York, NY: Churchill-Livingstone; 1983:46-55.
8. Talner NS. Heart failure. In: Adams FH, Emmanouilides GC, eds. *Moss' Heart Diseases in Infants, Children and Adolescents*. Baltimore, MD: Williams and Wilkins; 1983:708-725.
9. Flanagan MF, Fujii AM, Colan SD, Flanagan RG, Lock JE. Myocardial angiogenesis and coronary perfusion in left ventricular pressure-overload hypertrophy in the young lamb. Evidence for inhibition with chronic protamine administration. *Circ Res*. 1991;68(5):1458-1470.
10. Wong DH. Perioperative stroke. Part I: general surgery, carotid artery disease, and carotid endarterectomy. *Can J Anaesth*. 1991;38(3):347-373.
11. Friesen RH, Lichtor JL. Cardiovascular effects of inhalation induction with isoflurane in infants. *Anesth Analg*. 1983;62(4):411-414.
12. Jonas RA, Lang P, Hansen D, Hickey P, Castaneda AR. First-stage palliation of hypoplastic left heart syndrome. The importance of coarctation and shunt size. *J Thorac Cardiovasc Surg*. 1986;92(1):6-13.
13. Emery JL, Mithal A. Weights of cardiac ventricles at and after birth. *Br Heart J*. 1961;23:313-316.
14. Humphreys JE, Cummins P. Regulatory proteins of the myocardium. Atrial and ventricular tropomyosin and troponin-I in the developing and adult bovine and human heart. *J Mol Cell Cardiol*. 1984;16(7):643-657.
15. Nakanishi T, Seguchi M, Tsuchiya T, Yasukouchi S, Takao A. Effect of acidosis on intracellular pH and calcium concentration in the newborn and adult rabbit myocardium. *Circ Res*. 1990;67(1):111-123.
16. Van Hare GF, Hawkins JA, Schmidt KG, Rudolph AM. The effects of increasing mean arterial pressure on left ventricular output in newborn lambs. *Circ Res*. 1990;67(1):78-83.
17. Kirkpatrick SE, Pitlick PT, Naliboff J, Friedman WF. Frank-Starling relationship as an important determinant of fetal cardiac output. *Am J Physiol*. 1976;231(2):495-500.
18. Kenny J, Plappert T, Doubilet P, Salzman D, Sutton MG. Effects of heart rate on ventricular size, stroke volume, and output in the normal human fetus: a prospective Doppler echocardiographic study. *Circulation*. 1987;76(1):52-58.
19. Downing SE, Talner NS, Gardner TH. Ventricular function in the newborn lamb. *Am J Physiol*. 1965;208:931-937.
20. Kirklin JK, Westaby S, Blackstone EH, Kirklin JW, Chenoweth DE, Pacifico AD. Complement and the damaging effects of cardiopulmonary bypass. *J Thorac Cardiovasc Surg*. 1983;86(6):845-857.
21. Hickey PR, McGowan FX. Adhesion molecules and inflammation: the next targets for perioperative organ protection? *Anesth Analg*. 1995;81(6):1123-1124.
22. Ridley PD, Ratcliffe JM, Alberti KG, Elliott MJ. The metabolic consequences of a "washed" cardiopulmonary bypass pump-priming fluid in children undergoing cardiac operations. *J Thorac Cardiovasc Surg*. 1990;100(4):528-537.
23. Greeley WJ, Ungerleider RM, Smith LR, Reves JG. The effects of deep hypothermic cardiopulmonary bypass and total circulatory arrest on cerebral blood flow in infants and children. *J Thorac Cardiovasc Surg*. 1989;97(5):737-745.
24. Wong PC, Barlow CF, Hickey PR, et al. Factors associated with choreoathetosis after cardiopulmonary bypass in children with congenital heart disease. *Circulation*. 1992;86(5 Suppl):II118-II126.
25. Kern FH, Jonas RA, Mayer JE Jr, Hanley FL, Castaneda AR, Hickey PR. Temperature monitoring during CPB in infants: does it predict efficient brain cooling? *Ann Thorac Surg*. 1992;54(4):749-754.
26. Ferry PC. Neurologic sequelae of open-heart surgery in children. An 'irritating question'. *Am J Dis Child*. 1990;144(3):369-373.

27. DeLeon S, Ilbawi M, Arcilla R, et al. Choreoathetosis after deep hypothermia without circulatory arrest. *Ann Thorac Surg.* 1990;50(5):714-719.
28. Greeley WJ, Kern FH, Ungerleider RM, et al. The effect of hypothermic cardiopulmonary bypass and total circulatory arrest on cerebral metabolism in neonates, infants, and children. *J Thorac Cardiovasc Surg.* 1991;101(5):783-794.
29. Bellinger DC, Jonas RA, Rappaport LA, et al. Developmental and neurologic status of children after heart surgery with hypothermic circulatory arrest or low-flow cardiopulmonary bypass. *N Engl J Med.* 1995;332(9):549-555.
30. Newburger JW, Jonas RA, Wernovsky G, et al. A comparison of the perioperative neurologic effects of hypothermic circulatory arrest versus low-flow cardiopulmonary bypass in infant heart surgery. *N Engl J Med.* 1993;329(15):1057-1064.
31. Limperopoulos C, Majnemer A, Shevell MI, Rosenblatt B, Rohlicek C, Tchervenkov C. Neurodevelopmental status of newborns and infants with congenital heart defects before and after open heart surgery. *J Pediatr.* 2000;137(5):638-645.
32. Dent CL, Spaeth JP, Jones BV, et al. Brain magnetic resonance imaging abnormalities after the Norwood procedure using regional cerebral perfusion. *J Thorac Cardiovasc Surg.* 2006;131(1):190-197.
33. Clancy RR, McGaurn SA, Wernovsky G, et al. Preoperative risk-of-death prediction model in heart surgery with deep hypothermic circulatory arrest in the neonate. *J Thorac Cardiovasc Surg.* 2000;119(2):347-357.
34. Wypij D, Newburger JW, Rappaport LA, et al. The effect of duration of deep hypothermic circulatory arrest in infant heart surgery on late neurodevelopment: the Boston Circulatory Arrest Trial. *J Thorac Cardiovasc Surg.* 2003;126(5):1397-1403.
35. Scallan MJ. Brain injury in children with congenital heart disease. *Paediatr Anaesth.* 2003;13(4):284-293.
36. Coselli JS, Crawford ES, Beall AC Jr, Mizrahi EM, Hess KR, Patel VM. Determination of brain temperatures for safe circulatory arrest during cardiovascular operation. *Ann Thorac Surg.* 1988;45(6):638-642.
37. van der Linden J, Astudillo R, Ekroth R, Scallan M, Lincoln C. Cerebral lactate release after circulatory arrest but not after low flow in pediatric heart operations. *Ann Thorac Surg.* 1993;56(6):1485-1489.
38. Watanabe T, Orita H, Kobayashi M, Washio M. Brain tissue pH, oxygen tension, and carbon dioxide tension in profoundly hypothermic cardiopulmonary bypass. Comparative study of circulatory arrest, nonpulsatile low-flow perfusion, and pulsatile low-flow perfusion. *J Thorac Cardiovasc Surg.* 1989;97(3):396-401.
39. Swain JA, McDonald TJ Jr, Griffith PK, Balaban RS, Clark RE, Ceckler T. Low-flow hypothermic cardiopulmonary bypass protects the brain. *J Thorac Cardiovasc Surg.* 1991;102(1):76-83; discussion 83-84.
40. Zimmerman AA, Burrows FA, Jonas RA, Hickey PR. The limits of detectable cerebral perfusion by transcranial Doppler sonography in neonates undergoing deep hypothermic low-flow cardiopulmonary bypass. *J Thorac Cardiovasc Surg.* 1997;114(4):594-600.
41. Rossi R, van der Linden J, Ekroth R, Scallan M, Thompson RJ, Lincoln C. No flow or low flow? A study of the ischemic marker creatine kinase BB after deep hypothermic procedures. *J Thorac Cardiovasc Surg.* 1989;98(2):193-199.
42. Coles JG, Taylor MJ, Pearce JM, et al. Cerebral monitoring of somatosensory evoked potentials during profoundly hypothermic circulatory arrest. *Circulation.* 1984;70(3 Pt 2):I96-I102.
43. Lanier WL, Stangland KJ, Scheithauer BW, Milde JH, Michenfelder JD. The effects of dextrose infusion and head position on neurologic outcome after complete cerebral ischemia in primates: examination of a model. *Anesthesiology.* 1987;66(1):39-48.
44. Benzing G 3rd, Francis PD, Kaplan S, Helmsworth JA, Sperling MA. Glucose and insulin changes in infants and children undergoing hypothermic open-heart surgery. *Am J Cardiol.* 1983;52(1):133-136.
45. de Ferranti S, Gauvreau K, Hickey PR, et al. Intraoperative hyperglycemia during infant cardiac surgery is not associated with adverse neurodevelopmental outcomes at 1, 4, and 8 years. *Anesthesiology.* 2004;100(6):1345-1352.
46. Bashein G, Townes BD, Nessly ML, et al. A randomized study of carbon dioxide management during hypothermic cardiopulmonary bypass. *Anesthesiology.* 1990;72(1):7-15.
47. Bellinger DC, Wypij D, du Plessis AJ, et al. Developmental and neurologic effects of alpha-stat versus pH-stat strategies for deep hypothermic cardiopulmonary bypass in infants. *J Thorac Cardiovasc Surg.* 2001;121(2):374-383.
48. Andropoulos DB, Stayer SA, McKenzie ED, Fraser CD Jr. Novel cerebral physiologic monitoring to guide low-flow cerebral perfusion during neonatal aortic arch reconstruction. *J Thorac Cardiovasc Surg.* 2003;125(3):491-499.
49. Watzman HM, Kurth CD, Montenegro LM, Rome J, Steven JM, Nicolson SC. Arterial and venous contributions to near-infrared cerebral oximetry. *Anesthesiology.* 2000;93(4):947-953.
50. Russo G, Profeta G, Acampora S, Troisi F. Transcranial Doppler ultrasound. Examination technique and normal reference values. *J Neurosurg Sci.* 1986;30(3):97-102.
51. Bishop CC, Powell S, Rutt D, Browse NL. Transcranial Doppler measurement of middle cerebral artery blood flow velocity: a validation study. *Stroke.* 1986;17(5):913-915.
52. Taylor RH, Burrows FA, Bissonnette B. Cerebral pressure-flow velocity relationship during hypothermic cardiopulmonary bypass in neonates and infants. *Anesth Analg.* 1992;74(5):636-642.
53. Gold JP, Jonas RA, Lang P, Elixson EM, Mayer JE, Castaneda AR. Transthoracic intracardiac monitoring lines in pediatric surgical patients: a ten-year experience. *Ann Thorac Surg.* 1986;42(2):185-191.
54. Moore RA, Mc Nicholas K, Gallagher JD, Niguidula F. Migration of pediatric pulmonary artery catheters. *Anesthesiology.* 1983;58(1):102-104.
55. Sprague DH, Sherwood HL. Retrograde cannulation of a persistent superior vena cava. *Anesthesiology.* 1980;53(3):268.
56. Cyran SE, Kimball TR, Meyer RA, et al. Efficacy of intraoperative transesophageal echocardiography in children with congenital heart disease. *Am J Cardiol.* 1989;63(9):594-598.
57. Greeley WJ, Kern FH, Ungerleider RM, Kisslo JA. Intramyocardial air causes right ventricular dysfunction after repair of a congenital heart defect. *Anesthesiology.* 1990;3(5):1042-1046.
58. Ungerleider RM, Greeley WJ, Sheikh KH, et al. Routine use of intraoperative epicardial echocardiography and Doppler color flow imaging to guide and evaluate repair of congenital heart lesions. A prospective study. *J Thorac Cardiovasc Surg.* 1990;100(2):297-309.
59. Macartney FJ, Taylor JF, Graham GR, De Leval M, Stark J. The fate of survivors of cardiac surgery in infancy. *Circulation.* 1980;62(1):80-91.
60. Castaneda AR, Mayer JE Jr, Jonas RA, Lock JE, Wessel DL, Hickey PR. The neonate with critical congenital heart

- disease: repair—a surgical challenge. *J Thorac Cardiovasc Surg.* 1989;98(5 Pt 2):869-875.
61. Lavoie J, Burrows FA, Hansen DD. Video-assisted thoracoscopic surgery for the treatment of congenital cardiac defects in the pediatric population. *Anesth Analg.* 1996;82(3):563-567.
 62. Lavoie J, Javorski JJ, Donahue K, Sanders SP, Burke RP, Burrows FA. Detection of residual flow by transesophageal echocardiography during video-assisted thoracoscopic patent ductus arteriosus interruption. *Anesth Analg.* 1995;80(6):1071-1075.
 63. Arciniegas E, Farooki ZQ, Hakimi M, Perry BL, Green EW. Classic shunting operations for congenital cyanotic heart defects. *J Thorac Cardiovasc Surg.* 1982;84(1):88-96.
 64. Hickey PR, Wessel DL, Streitz SL, et al. Transcatheter closure of atrial septal defects: hemodynamic complications and anesthetic management. *Anesth Analg.* 1992;74(1):44-50.
 65. Laussen PC, Hansen DD, Perry SB, et al. Transcatheter closure of ventricular septal defects: hemodynamic instability and anesthetic management. *Anesth Analg.* 1995;80(6):1076-1082.
 66. Coats L, Tsang V, Khambadkone S, et al. The potential impact of percutaneous pulmonary valve stent implantation on right ventricular outflow tract re-intervention. *Eur J Cardiothorac Surg.* 2005;27(4):536-543.
 67. Beekman RH, Rocchini AP. Transcatheter treatment of congenital heart disease. *Prog Cardiovasc Dis.* 1989;32(1):1-30.
 68. Burrows PE, Benson LN, Williams WG, et al. Iliofemoral arterial complications of balloon angioplasty for systemic obstructions in infants and children. *Circulation.* 1990;82(5):1697-1704.
 69. Rothman A, Perry SB, Keane JF, Lock JE. Early results and follow-up of balloon angioplasty for branch pulmonary artery stenoses. *J Am Coll Cardiol.* 1990;15(5):1109-1117.
 70. Glenski JA, Friesen RH, Berglund NL. Comparison of the hemodynamic and echocardiographic effects of sufentanil, fentanyl, isoflurane, and halothane for pediatric cardiac surgery. *J Cardiovasc Anesth.* 1988;2:147-155.
 71. Anand KJ, Sippell WG, Aynsley-Green A. Randomised trial of fentanyl anaesthesia in preterm babies undergoing surgery: effects on the stress response. *Lancet.* 1987;1(8524):62-66.
 72. Anand KJ, Hickey PR. Halothane-morphine compared with high-dose sufentanil for anesthesia and postoperative analgesia in neonatal cardiac surgery. *N Engl J Med.* 1992;326(1):1-9.
 73. Hensley FA, Larach DR, Stauffer RA. The effect of halothane/nitrous oxide/oxygen mask induction on arterial hemoglobin. *Anesthesiology.* 1985;63:A3 (abstract).
 74. Anand KJ, Hansen DD, Hickey PR. Hormonal-metabolic stress responses in neonates undergoing cardiac surgery. *Anesthesiology.* 1990;73(4):661-670.
 75. Friesen RH, Henry DB. Cardiovascular changes in preterm neonates receiving isoflurane, halothane, fentanyl, and ketamine. *Anesthesiology.* 1986;64(2):238-242.
 76. Murray D, Forbes R, Murphy K, Mahoney L. Nitrous oxide: cardiovascular effects in infants and small children during halothane and isoflurane anesthesia. *Anesth Analg.* 1988;67(11):1059-1064.
 77. Holzman RS, van der Velde ME, Kaus SJ, et al. Sevoflurane depresses myocardial contractility less than halothane during induction of anesthesia in children. *Anesthesiology.* 1996;85(6):1260-1267.
 78. Nishiyama T. Hemodynamic and catecholamine response to a rapid increase in isoflurane or sevoflurane concentration during a maintenance phase of anesthesia in humans. *J Anesth.* 2005;19(3):213-217.
 79. Rivenes SM, Lewin MB, Stayer SA, et al. Cardiovascular effects of sevoflurane, isoflurane, halothane, and fentanyl-midazolam in children with congenital heart disease: an echocardiographic study of myocardial contractility and hemodynamics. *Anesthesiology.* 2001;94(2):223-229.
 80. Zwass MS, Fisher DM, Welborn LG, et al. Induction and maintenance characteristics of anesthesia with desflurane and nitrous oxide in infants and children. *Anesthesiology.* 1992;76(3):373-378.
 81. Mehta M, Sokoll MD, Gergis SD. Effects of venous air embolism on the cardiovascular system and acid base balance in the presence and absence of nitrous oxide. *Acta Anaesthesiol Scand.* 1984;28(2):226-231.
 82. Tuman KJ, McCarthy RJ, Spiess BD, Overfield DM, Ivankovich AD. Effects of nitrous oxide on coronary perfusion after coronary air embolism. *Anesthesiology.* 1987;67(6):952-959.
 83. Schulte-Sasse U, Hess W, Tarnow J. Pulmonary vascular responses to nitrous oxide in patients with normal and high pulmonary vascular resistance. *Anesthesiology.* 1982;57(1):9-13.
 84. Hickey PR, Hansen DD, Strafford M, Thompson JE, Jonas RE, Mayer JE. Pulmonary and systemic hemodynamic effects of nitrous oxide in infants with normal and elevated pulmonary vascular resistance. *Anesthesiology.* 1986;65(4):374-378.
 85. Laishley RS, Burrows FA, Lerman J, Roy WL. Effect of anesthetic induction regimens on oxygen saturation in cyanotic congenital heart disease. *Anesthesiology.* 1986;65(6):673-677.
 86. Lawler PG, Nunn JF. A reassessment of the validity of the iso-shunt graph. *Br J Anaesth.* 1984;56(12):1325-1335.
 87. Tanner GE, Angers DG, Barash PG, Mulla A, Miller PL, Rothstein P. Effect of left-to-right, mixed left-to-right, and right-to-left shunts on inhalational anesthetic induction in children: a computer model. *Anesth Analg.* 1985;64(2):101-107.
 88. Stoelting RK, Longnecker DE. The effect of right-to-left shunt on the rate of increase of arterial anesthetic concentration. *Anesthesiology.* 1972;36(4):352-356.
 89. Cook DJ, Carton EG, Housmans PR. Mechanism of the positive inotropic effect of ketamine in isolated ferret ventricular papillary muscle. *Anesthesiology.* 1991;74(5):880-888.
 90. Levin RM, Seleny FL, Streczyn MV. Ketamine-pancuronium-narcotic technic for cardiovascular surgery in infants—a comparative study. *Anesth Analg.* 1975;54(6):800-805.
 91. Hickey PR, Hansen DD, Cramolini GM, Vincent RN, Lang P. Pulmonary and systemic hemodynamic responses to ketamine in infants with normal and elevated pulmonary vascular resistance. *Anesthesiology.* 1985;62(3):287-293.
 92. Sarkar M, Laussen PC, Zurakowski D, Shukla A, Kussman B, Odegard KC. Hemodynamic responses to etomidate on induction of anesthesia in pediatric patients. *Anesth Analg.* 2005;101(3):645-650, table of contents.
 93. Nguyen NK, Magnier S, Georget G, et al. [Anesthesia for heart catheterization in children. Comparison of 3 techniques]. *Ann Fr Anesth Reanim.* 1991;10(6):522-528.
 94. Donmez A, Kaya H, Haberal A, Kutsal A, Arslan G. The effect of etomidate induction on plasma cortisol levels in children undergoing cardiac surgery. *J Cardiothorac Vasc Anesth.* 1998;12(2):182-185.

95. Ellis DJ, Steward DJ. Fentanyl dosage is associated with reduced blood glucose in pediatric patients after hypothermic cardiopulmonary bypass. *Anesthesiology*. 1990;72(5):812-815.
96. Yaster M. The dose response to fentanyl in neonatal surgery. *Anesthesiology*. 1985;63:A471.
97. Hickey PR, Hansen DD. Fentanyl- and sufentanil-oxygen-pancuronium anesthesia for cardiac surgery in infants. *Anesth Analg*. 1984;63(2):117-124.
98. Hickey PR, Hansen DD, Wessel DL, Lang P, Jonas RA. Pulmonary and systemic hemodynamic responses to fentanyl in infants. *Anesth Analg*. 1985;64(5):483-486.
99. Salmenpera M, Peltola K, Takkunen O, Heinonen J. Cardiovascular effects of pancuronium and vecuronium during high-dose fentanyl anesthesia. *Anesth Analg*. 1983;62(12):1059-1064.
100. Motomura S, Kissin I, Aultman DF, Reves JG. Effects of fentanyl and nitrous oxide on contractility of blood-perfused papillary muscle of the dog. *Anesth Analg*. 1984;63(1):47-50.
101. Davis PJ, Cook DR, Stiller RL, Davin-Robinson KA. Pharmacodynamics and pharmacokinetics of high-dose sufentanil in infants and children undergoing cardiac surgery. *Anesth Analg*. 1987;66(3):203-208.
102. den Hollander JM, Hennis PJ, Burm AG, Bovill JG. Alfentanil in infants and children with congenital heart defects. *J Cardiothorac Anesth*. 1988;2(1):12-17.
103. Akpek EA, Erkaya C, Donmez A, et al. Remifentanil use in children undergoing congenital heart surgery for left-to-right shunt lesions. *J Cardiothorac Vasc Anesth*. 2005;19(1):60-66.
104. Ogletree ML, Sprung J, Moravec CS. Effects of remifentanil on the contractility of failing human heart muscle. *J Cardiothorac Vasc Anesth*. 2005;19(6):763-767.
105. Davis PJ, Wilson AS, Siewers RD, Pigula FA, Landsman IS. The effects of cardiopulmonary bypass on remifentanil kinetics in children undergoing atrial septal defect repair. *Anesth Analg*. 1999;89(4):904-908.
106. Stowe DF, Bosnjak ZJ, Kampine JP. Comparison of etomidate, ketamine, midazolam, propofol, and thiopental on function and metabolism of isolated hearts. *Anesth Analg*. 1992;74(4):547-558.
107. Marcus B, Steward DJ, Khan NR, et al. Outpatient transesophageal echocardiography with intravenous propofol anesthesia in children and adolescents. *J Am Soc Echocardiogr*. 1993;6(2):205-209.
108. Lebovic S, Reich DL, Steinberg LG, Vela FP, Silvey G. Comparison of propofol versus ketamine for anesthesia in pediatric patients undergoing cardiac catheterization. *Anesth Analg*. 1992;74(4):490-494.
109. Jones RD, Visram AR, Chan MM, Bacon-Shone J, Mya GH, Irwin MG. A comparison of three induction agents in paediatric anaesthesia—cardiovascular effects and recovery. *Anaesth Intensive Care*. 1994;22(5):545-555.
110. Saarnivaara L, Hiller A, Oikkonen M. QT interval, heart rate and arterial pressures using propofol, thiopentone or methohexitone for induction of anaesthesia in children. *Acta Anaesthesiol Scand*. 1993;37(4):419-423.
111. Chrysostomou C, Di Filippo S, Manrique AM, et al. Use of dexmedetomidine in children after cardiac and thoracic surgery. *Pediatr Crit Care Med*. 2006;7(2):126-131.
112. Finkel JC, Johnson YJ, Quezado ZM. The use of dexmedetomidine to facilitate acute discontinuation of opioids after cardiac transplantation in children. *Crit Care Med*. 2005;33(9):2110-2112.
113. Maunukela EL, Gattiker RI. Use of pancuronium in children with congenital heart disease. *Anesth Analg*. 1981;60(11):798-801.
114. Cabal LA, Siassi B, Artal R, Gonzalez F, Hodgman J, Plajstek C. Cardiovascular and catecholamine changes after administration of pancuronium in distressed neonates. *Pediatrics*. 1985;75(2):284-287.
115. Goudsouzian NG, Martyn JJ, Liu LM, Gionfriddo M. Safety and efficacy of vecuronium in adolescents and children. *Anesth Analg*. 1983;62(12):1083-1088.
116. Bettendorf M, Schmidt KG, Grulich-Henn J, Ulmer HE, Heinrich UE. Tri-iodothyronine treatment in children after cardiac surgery: a double-blind, randomised, placebo-controlled study. *Lancet*. 2000;356(9229):529-534.
117. Follath F, Cleland JG, Just H, et al. Efficacy and safety of intravenous levosimendan compared with dobutamine in severe low-output heart failure (the LIDO study): a randomised double-blind trial. *Lancet*. 2002;360(9328):196-202.
118. Moiseyev VS, Pöder P, Andrejevs N, et al. Safety and efficacy of a novel calcium sensitizer, levosimendan, in patients with left ventricular failure due to an acute myocardial infarction. A randomized, placebo-controlled, double-blind study (RUSSLAN). *Eur Heart J*. 2002;23(18):1422-1432.
119. Claudius I, Lan YT, Chang RK, Wetzel GT, Alejos J. Usefulness of B-type natriuretic peptide as a noninvasive screening tool for cardiac allograft pathology in pediatric heart transplant recipients. *Am J Cardiol*. 2003;92(11):1368-1370.
120. Webber SA. The current state of, and future prospects for, cardiac transplantation in children. *Cardiol Young*. 2003;13(1):64-83.
121. Mital S, Addonizio LJ, Lamour JM, Hsu DT. Outcome of children with end-stage congenital heart disease waiting for cardiac transplantation. *J Heart Lung Transplant*. 2003;22(2):147-153.
122. Spray T. Demographics of heart failure in the pediatric population. In: *47th Annual ASAIO Conference*. New York, 2001.
123. Duncan BW. Mechanical circulatory support in children: extracorporeal membrane oxygenation and ventricular assist devices. *Expert Rev Med Devices*. 2005;2(3):239-241.
124. de Mos N, van Litsenburg RR, McCrindle B, Bohn DJ, Parshuram CS. Pediatric in-intensive-care-unit cardiac arrest: incidence, survival, and predictive factors. *Crit Care Med*. 2006;34(4):1209-1215.
125. Allan CK, Thiagarajan RR, Armsby LR, del Nido PJ, Laussen PC. Emergent use of extracorporeal membrane oxygenation during pediatric cardiac catheterization. *Pediatr Crit Care Med*. 2006;7(3):212-219.
126. Rozmiarek AJ, Qureshi FG, Cassidy L, et al. How low can you go? Effectiveness and safety of extracorporeal membrane oxygenation in low-birth-weight neonates. *J Pediatr Surg*. 2004;39(6):845-847.
127. Kirshbom PM, Bridges ND, Myung RJ, Gaynor JW, Clark BJ, Spray TL. Use of extracorporeal membrane oxygenation in pediatric thoracic organ transplantation. *J Thorac Cardiovasc Surg*. 2002;123(1):130-136.
128. Walczak R, Lawson DS, Kaemmer D, et al. Evaluation of a preprimed microporous hollow-fiber membrane for rapid response neonatal extracorporeal membrane oxygenation. *Perfusion*. 2005;20(5):269-275.
129. Imamura M, Schmitz ML, Watkins B, et al. Venovenous extracorporeal membrane oxygenation for cyanotic congenital heart disease. *Ann Thorac Surg*. 2004;78(5):1723-1727.

130. Minami K, Knyphausen E, Suzuki R, et al. Mechanical ventricular circulatory support in children; Bad Oeynhausen experience. *Ann Thorac Cardiovasc Surg.* 2005;11(5):307-312.
131. Daily BB, Pettitt TW, Sutura SP, Pierce WS. Pierce-Donachy pediatric VAD: progress in development. *Ann Thorac Surg.* 1996;61(1):437-443.
132. Schmid C, Tjan TD, Etz C, et al. First clinical experience with the InCor left ventricular assist device. *J Heart Lung Transplant.* 2005;24(9):1188-1194.
133. Reinhartz O, Copeland JG, Farrar DJ. Thoratec ventricular assist devices in children with less than 1.3 m² of body surface area. *ASAIO J.* 2003;49(6):727-730.
134. Reinhartz O, Keith FM, El-Banayosy A, et al. Multicenter experience with the thoratec ventricular assist device in children and adolescents. *J Heart Lung Transplant.* 2001;20(4):439-448.
135. Agati S, Mignosa C, Ciccarello G, Dario S, Undar A. Pulsatile ECMO in neonates and infants: first European clinical experience with a new device. *ASAIO J.* 2005;51(5):508-512.
136. Merkle F, Boettcher W, Stiller B, Hetzer R. Pulsatile mechanical cardiac assistance in pediatric patients with the Berlin heart ventricular assist device. *J Extra Corpor Technol.* 2003;35(2):115-120.
137. Busch U, Waldenberger FR, Redlin M, Hausdorf G, Konertz W. Successful treatment of postoperative right ventricular heart failure with the HIA-Medos-assist system in a 2-year-old girl. *Pediatr Cardiol.* 1999;20(2):161-163.
138. Stiller B, Lemmer J, Merkle F, et al. Consumption of blood products during mechanical circulatory support in children: comparison between ECMO and a pulsatile ventricular assist device. *Intensive Care Med.* 2004;30(9):1814-1820.
139. Hansen DD, Hickey PR. Anesthesia for hypoplastic left heart syndrome: use of high-dose fentanyl in 30 neonates. *Anesth Analg.* 1986;65(2):127-132.
140. Vacanti JP, Crone RK, Murphy JD. The pulmonary hemodynamic response to perioperative anesthesia in the treatment of high-risk infants with congenital diaphragmatic hernia. *J Pediatr Surg.* 1984;19(6):672-679.
141. Wessel DL, Adatia I. Clinical applications of inhaled nitric oxide in children with pulmonary hypertension. *Adv Pharmacol.* 1995;34:475-504.
142. Wessel DL, Adatia I, Thompson JE, Hickey PR. Delivery and monitoring of inhaled nitric oxide in patients with pulmonary hypertension. *Crit Care Med.* 1994;22(6):930-938.
143. Chang AC, Zucker HA, Hickey PR, Wessel DL. Pulmonary vascular resistance in infants after cardiac surgery: role of carbon dioxide and hydrogen ion. *Crit Care Med.* 1995;23(3):568-574.
144. Ferrara B, Johnson DE, Chang PN, Thompson TR. Efficacy and neurologic outcome of profound hypocapneic alkalosis for the treatment of persistent pulmonary hypertension in infancy. *J Pediatr.* 1984;105(3):457-461.
145. West JB, Dollery CT, Naimark A. Distribution of blood flow in isolated lung; relation to vascular and alveolar pressures. *J Appl Physiol.* 1964;19:713-724.
146. Nudel DB, Berman MA, Talner NS. Effects of acutely increasing systemic vascular resistance on oxygen tension in tetralogy of Fallot. *Pediatrics.* 1976;58(2):248-251.
147. Berman WJ. The hemodynamics of shunts in congenital heart disease. In: Johansen K, Burggren WW, eds. *Cardiovascular Shunts: Phylogenetic, Ontogenetic, and Clinical Aspects.* New York, NY: Raven Press; 1985:399-410.
148. Rabinovitch M, Haworth SG, Castaneda AR, Nadas AS, Reid LM. Lung biopsy in congenital heart disease: a morphometric approach to pulmonary vascular disease. *Circulation.* 1978;58(6):1107-1122.