

Chapter 85

REFERENCES

1. Wolf P, Cobb J, D'Agostino R. Epidemiology of stroke. In: Barnett H, Mohr J, Stein B, Yatsu F, eds. *Stroke: Pathophysiology, Diagnosis, and Management*. New York: Churchill Livingstone; 1992:3-29.
2. Lamassa M, Di Carlo A, Pracucci G, et al. Characteristics, outcome, and care of stroke associated with atrial fibrillation in Europe: data from a multicenter multinational hospital-based registry (The European Community Stroke Project). [Journal Article. Multicenter Study]. *Stroke*. 2001;32(2):392-398.
3. Markus HS, Alberts MJ. Update on genetics of stroke and cerebrovascular disease 2005. *Stroke*. 2006;37:288-290.
4. Silvestrini M, Vernieri F, Pasqualetti P, et al. Impaired cerebral vasoreactivity and risk of stroke in patients with asymptomatic carotid artery stenosis. *JAMA*. 2000;283(16):2122-2127.
5. Cheng W, Denton T, Fontana G, et al. Off-pump coronary surgery: effect on early mortality and stroke. *J Thorac Cardiovasc Surg*. 2002;124(2):313-320.
6. Stern A, Tunick P, Culliford A, et al. Protruding aortic arch atheromas: risk of stroke during heart surgery with and without aortic arch endarterectomy. *Am Heart J*. 1999;138(4 Pt 1):646-652.
7. Stamou S, Hill P, Dangas G, et al. Stroke after coronary artery bypass: incidence, predictors, and clinical outcome. *Stroke*. 2001;32(7):1508-1513.
8. Goldstein L, Davies R, Rizzo J, et al. Stroke in surgery of the thoracic aorta: incidence, impact, etiology, and prevention. [Surgery for Acquired Cardiovascular Disease (ACD)]. *J Thorac Cardiovasc Surg*. 2001;122(5):935-945.
9. Rothwell P, Slattery J, Warlow C. A systematic comparison of the risks of stroke and death due to carotid endarterectomy for symptomatic and asymptomatic stenosis. *Stroke*. 1996;27(2):266-269.
10. Rothwell P, Goldstein L. Carotid endarterectomy for asymptomatic carotid stenosis: asymptomatic carotid surgery trial. *Stroke*. 2004;35(10):2425-2427.
11. Naylor A, Rothwell P, Bell P. Overview of the principal results and secondary analyses from the European and North American randomised trials of endarterectomy for symptomatic carotid stenosis. *Eur J Vasc Endovasc Surg*. 2003;26(2):115-129.
12. Bond R, Narayan S, Rothwell P, Group ECSTC. Clinical and radiographic risk factors for operative stroke and death in the European Carotid Surgery Trial. *Eur J Vasc Endovasc Surg*. 2002;23:108-116.
13. Bond R, Rerkasem K, Cuffe R, Rothwell P. A systematic review of the associations between age and sex and the operative risks of carotid endarterectomy. *Cerebrovasc Dis*. 2005;20(2):69-77.
14. Rothwell P, Slattery J, Warlow C. Clinical and angiographic predictors of stroke and death from carotid endarterectomy: systematic review. *BMJ*. 1997;315(7122):1571-1577.
15. Rothwell PM. Carotid stenting: more risky than endarterectomy and often no better than medical treatment alone. *Lancet*. 2010;375:957-959.
16. International Carotid Stenting Study investigators, Ederle J, Dobson J, et al. Carotid artery stenting compared with endarterectomy in patients with symptomatic carotid stenosis (International Carotid Stenting Study): an interim analysis of a randomised controlled trial. *Lancet*. 2010;375:985-997.
17. Heyer E, Sahlein D, Rampersad A, Benvenisty A, Connolly EJ. Apoe ε4 may be associated with cognitive dysfunction after carotid endarterectomy. *Anesthesiology* 2003;99:A364.
18. Lanska D, Kryscio R. Risk factors for peripartum and postpartum stroke and intracranial venous thrombosis. *Stroke*. 2000;31(6):1274-1282.
19. Ogilvy C, Carter B, Kaplan S, Rich C, Crowell R. Temporary vessel occlusion for aneurysm surgery: risk factors for stroke in patients protected by induced hypothermia and hypertension and intravenous mannitol administration. *J Neurosurg*. 1996;84(5):785-791.
20. Parikh S, Cohen J. Perioperative stroke after general surgical procedures. *N Y State J Med*. 1993;93(3):162-165.
21. Bateman BT, Schumacher HC, Wang S, et al. Perioperative acute ischemic stroke in noncardiac and nonvascular surgery: incidence, risk factors, and outcomes. *Anesthesiology*. 2009;110:231-238.
22. Poise Study Group, Devereaux PJ, Yang H, et al. Effects of extended-release metoprolol succinate in patients undergoing non-cardiac surgery (POISE trial): a randomised controlled trial. *Lancet*. 2008;371:1839-1847.
23. van Lier F, Schouten O, van Domburg RT, et al. Effect of chronic beta-blocker use on stroke after noncardiac surgery. *Am J Cardiol*. 2009;104:429-433.
24. Landercasper J, Merz B, Cogbill T, et al. Perioperative stroke risk in 173 consecutive patients with a past history of stroke. *Arch Surg*. 1990;125(8):986-989.
25. Larsen S, Zaric D, Boysen G. Postoperative cerebrovascular accidents in general surgery. *Acta Anaesth Scand* 1988;32:698-701.

26. Limburg M, Wijndicks E, Li H: Ischemic stroke after surgical procedures: clinical features, neuroimaging, and risk factors. *Neurology* 1998;50(4):895-901.
27. Fleisher LA, Beckman JA, Brown KA, et al. ACC/AHA 2007 guidelines on perioperative cardiovascular evaluation and care for noncardiac surgery: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines on Perioperative Cardiovascular Evaluation for Noncardiac Surgery) developed in collaboration with the American Society of Echocardiography, American Society of Nuclear Cardiology, Heart Rhythm Society, Society of Cardiovascular Anesthesiologists, Society for Cardiovascular Angiography and Interventions, Society for Vascular Medicine and Biology, and Society for Vascular Surgery. *J Am Coll Cardiol*. 2007;50:e159-e241.
28. Kam P, Calcroft R. Peri-operative stroke in general surgical patients. *Anaesthesia*. 1997;52(9):879-883.
29. Collins GJ, Barber J, Zajtchuk R, et al. The effects of operative stress on the coagulation profile. *Am J Surg*. 1977;133:612-616.
30. Levine S. Anoxic-ischemic encephalopathy in rats. *Am J Pathol*. 1960;36:1.
31. Schroeder T. Cerebrovascular reactivity to acetazolamide in carotid artery disease. Enhancement of side-to-side CBF asymmetry indicates critically reduced perfusion pressure. *Neurol Res*. 1986;8(4):231.
32. Yonas H, Pindzola R. Clinical application of cerebrovascular reserve assessment as a strategy for stroke prevention. *Keio J Med*. 2000;49(1):A4-A10.
33. Yonas H, Pindzola R. Physiological determination of cerebrovascular reserves and its use in clinical management. *Cerebrovasc Brain Metab Rev*. 1994;6(4):325-340.
34. Nemoto E, Yonas H, Kuwabara H, et al. Identification of hemodynamic compromise by cerebrovascular reserve and oxygen extraction fraction in occlusive vascular disease. *J Cereb Blood Flow Metab*. 2004;24(10):1081-1089.
35. Imaizumi M, Kitagawa K, Hashikawa K, et al. Detection of misery perfusion with split-dose 123I-iodoamphetamine single-photon emission computed tomography in patients with carotid occlusive diseases. *Stroke*. 2002;33(9):2217-2223.
36. Werner C, Hoffman W, Thomas C, Miletich D, Albrecht R. Ganglionic blockade improves neurologic outcome from incomplete ischemia in rats: partial reversal by exogenous catecholamines. *Anesthesiology*. 1990;73:923.
37. Hoffman W, Kochs E, Werner C, Thomas C, Albrecht R. Dexmedetomidine improves neurologic outcome from incomplete ischemia in the rat. Reversal by the alpha 2-adrenergic antagonist atipamezole. *Anesthesiology*. 1991;75(2):328.
38. Werner C, Hoffman W, Kochs E, Rabito S, Miletich D. Captopril improves neurologic outcome from incomplete cerebral ischemia in rats. *Stroke*. 1991;22:910.
39. Sugawara T, Kawase M, Lewen A, et al. Effect of hypotension severity on hippocampal CA1 neurons in a rat global ischemia model. *Br Res*. 2000;877(2):281-287.
40. Castillo J, Davalos A, Noya M. Aggravation of acute ischemic stroke by hyperthermia is related to an excitotoxic mechanism. *Cerebrovasc Dis*. 1999;9(1):22-27.
41. Szczudlik A, Turaj W, Slowik A, Strojny J. Microalbuminuria and hyperthermia independently predict long-term mortality in acute ischemic stroke patients. *Acta Neuro Scand*. 2003;107(2):96-101.
42. Kim J, Kang S. Bleeding and subsequent anemia: a precipitant for cerebral infarction. *Eur Neurol*. 2000;43(4):201-208.
- 42a. Sontineni SP, Lee JM, Porter J. Hypoglycemia-induced pontine infarction in a diabetic male with basilar artery stenosis: insight into the mechanisms of hypoglycemic stroke. *Cerebrovasc Dis*. 2008;25(3):281-282.
43. Thompson S, Southern D, McKinnon J, Dort J, Ghali W. Incidence of perioperative stroke after neck dissection for head and neck cancer: a regional outcome analysis. *Ann Surgery*. 2004;239(3):428-431.
44. Weintraub M, Khoury A. Critical neck position as an independent risk factor for posterior circulation stroke. A magnetic resonance angiographic analysis. *J Neuroimaging*. 1995;5(1):16-22.
45. Petersen B, von Maravic M, Zeller J, Walker M, Kompf D, Kessler C. Basilar artery blood flow during head rotation in vertebrobasilar ischemia. *Acta Neurol Scand*. 1996;94(4):294-301.
46. Grundy B, Procopio P, Jannetta P, Lina A, Doyle E. Evoked potential changes produced by positioning for retromastoid craniectomy. *Neurosurgery*. 1982;10(6 Pt 1):766-770.
47. Weintraub M. Beauty parlor stroke syndrome: report of five cases. *JAMA*. 1993;269(16):2085-2086.
48. Basali A, Mascha E, Kalfas I, Schubert A. Relation between perioperative hypertension and intracranial hemorrhage after craniotomy. *Anesthesiology*. 2000;93(1):48-54.
49. Eng C, Lam A, Byrd S, Newell DW. The diagnosis and management of a perianesthetic cerebral aneurysmal rupture aided with transcranial Doppler ultrasonography. *Anesthesiology*. 1993;78(1):191-194.
50. Ohkuma H, Tsurutani H, Suzuki S. Incidence and significance of early aneurysmal rebleeding before neurosurgical or neurological management. *Stroke*. 2001;32(5):1176-1180.
51. Kim MN, Durduran T, Frangos S, et al. Noninvasive measurement of cerebral blood flow and blood oxygenation using near-infrared and diffuse correlation spectroscopies in critically brain-injured adults. *Neurocrit Care*. 2010;12:173-180.
52. Joshi B, Brady K, Lee J, et al. Impaired autoregulation of cerebral blood flow during rewarming from hypothermic cardiopulmonary bypass and its potential association with stroke. *Anesth Analg*. 2010;110:321-328.
53. Czosnyka M, Brady K, Reinhard M, Smielewski P, Steiner LA. Monitoring of cerebrovascular autoregulation: facts, myths, and missing links. *Neurocrit Care*. 2009;10:373-386.
54. Kim SS, Knight BP. Electrical and pharmacologic cardioversion for atrial fibrillation. *Cardiol Clin*. 2009;27:95-107, ix.
55. Brown M, Wade J, Marshall J. Fundamental importance of arterial oxygen content in the regulation of cerebral blood flow in man. *Brain*. 1985;108(Pt 1):81-93.
56. Floyd T, Clark J, Gelfand R, et al. Independent cerebral vasoconstrictive effects of hyperoxia and accompanying arterial hypocapnia at 1 ATA. [Clinical Trial. Journal Article]. *J App Physiol*. 2003;95(6):2453-2461.
57. Nakajima S, Meyer J, Amano T, Shaw T, Okabe T, Mortel K. Cerebral vasomotor responsiveness during 100% oxygen inhalation in cerebral ischemia. *Arch Neurol*. 1983;40(5):271-276.
58. Kilgannon JH, Jones AE, Shapiro NI, et al. Association between arterial hyperoxia following resuscitation from cardiac arrest and in-hospital mortality. *JAMA*. 2010;303:2165-2171.
59. Fiskum G, Rosenthal R, Vereczki V, et al. Protection against ischemic brain injury by inhibition of mitochondrial oxidative stress. *J Bioenerg Biomembr*. 2004;36(4):347-352.

60. Halsey JJ, Conger K, Garcia J, Sarvary E. The contribution of reoxygenation to ischemic brain damage. *J Cereb Blood Flow Metab.* 1991;11:994-1000.
61. Mickel H, Kempfski O, Feuerstein G, Parisi J, Webster H. Prominent white matter lesions develop in Mongolian gerbils treated with 100% normobaric oxygen after global brain ischemia. *Acta Neuropathol.* 1990;79:465-472.
62. Marsala J, Marsala M, Vanicky I, Galik J, Orendacova J. Post cardiac arrest hyperoxic resuscitation enhances neuronal vulnerability of the respiratory rhythm generator and some brainstem and spinal cord neuronal pools in the dog. *Neurosci Lett.* 1992;146:121-124.
63. Dings J, Meixensberger J, Jager A, Roosen K. Clinical experience with 118 brain tissue oxygen partial pressure catheter probes. *Neurosurgery.* 1998;43(5):1982-1995.
64. Kett-White R, Hutchinson PJ, Al-Rawi PG, et al. Cerebral oxygen and microdialysis monitoring during aneurysm surgery: effects of blood pressure, cerebrospinal fluid drainage, and temporary clipping on infarction. *J Neurosurg.* 2002;96:1013-1019.
65. Kett-White R, Hutchinson PJ, Al-Rawi PG, et al. Adverse cerebral events detected after subarachnoid hemorrhage using brain oxygen and microdialysis probes. *Neurosurgery.* 2002;50:1213-1221; discussion 1221-1222.
66. van den Brink W, van Santbrink H, Steyerberg E, et al. Brain oxygen tension in severe head injury. *Neurosurgery.* 2000;46(4):876-878.
67. Valadka A, Gopinath S, Contant C, Uzura M, Robertson C. Relationship of brain tissue PO₂ to outcome after severe head injury. *Crit Care Clin.* 1998;26(9):1576-1581.
68. van Santbrink H, vd Brink W, Steyerberg E, Carmona Suazo J, Avezaat C, Maas A. Brain tissue oxygen response in severe traumatic brain injury. *Acta Neurochir.* 2003;145(6):429-438.
69. Stiefel M, Spiotta A, Gracias V, et al. Reduced mortality rate in patients with severe traumatic brain injury treated with brain tissue oxygen monitoring. *J Neurosurg.* 2005;103:805-811.
70. Meixensberger J, Vath A, Jaeger M, Kunze E, Dings J, Roosen K. Monitoring of brain tissue oxygenation following severe subarachnoid hemorrhage. *Neurol Res.* 2003;25(5):445-450.
71. Ramakrishna R, Stiefel M, Udoetuk J, et al. Brain oxygen tension and outcome in patients with aneurysmal subarachnoid hemorrhage. [Erratum appears in *J Neurosurg.* 2009;110(3):613. Note: Udoetuk, Joshua [corrected to Udoetuk, Joshua]. *J Neurosurg.* 2008;109:1075-1082.
72. Spiotta AM, Stiefel MF, Gracias VH, et al. Brain tissue oxygen-directed management and outcome in patients with severe traumatic brain injury. *J Neurosurg.* 2010;113(3):571-580.
73. Jaeger M, Schuhmann MU, Soehle M, Meixensberger J. Continuous assessment of cerebrovascular autoregulation after traumatic brain injury using brain tissue oxygen pressure reactivity. *Crit Care Med.* 2006;34:1783-1788.
74. Klein J. Normobaric pulmonary oxygen toxicity. *Anesth Analg.* 1990;70(2):195-207.
75. West J. *Respiratory Physiology—The Essentials.* Baltimore: Williams and Wilkins; 1974.
76. Harper A, Glass H. Effect of alterations in the arterial carbon dioxide tension on the blood flow through the cerebral cortex at normal and low arterial blood pressures. *J Neurol Neurosurg Psychiatr.* 1965;28(5):449-452.
77. Koehler R, Traystman R. Bicarbonate ion modulation of cerebral blood flow during hypoxia and hypercapnia. *Am J Phys.* 1982;243(1):H33-H40.
78. Heffner J, Sahn S. Controlled hyperventilation in patients with intracranial hypertension. Application and management. *Arch Int Med.* 1983;143(4):765-769.
79. Coles J, Minhas P, Fryer T, et al. Effect of hyperventilation on cerebral blood flow in traumatic head injury: clinical relevance and monitoring correlates. *Crit Care Clin.* 2002;30(9):1950-1959.
80. Simon R, Niro M, Gwinn R. Brain acidosis induced by hypercarbic ventilation attenuates focal ischemic injury. *J Pharm Exper Therap.* 1993;267(3):1428-1431.
81. Muizelaar J, Marmarou A, Ward J, et al. Adverse effects of prolonged hyperventilation in patients with severe head injury: a randomized clinical trial. *J Neurosurg.* 1991;75:731.
82. Gopinath S, Valadka A, Uzura M, Robertson C. Comparison of jugular venous oxygen saturation and brain tissue PO₂ as monitors of cerebral ischemia after head injury. *Crit Care Clin.* 1999;27(11):2337-2345.
83. Thompson H, Tkacs N, Saatman K, Raghupathi R, McIntosh T. Hyperthermia following traumatic brain injury: a critical evaluation. *Neurobiol Dis.* 2003;12(3):163-173.
84. Suehiro E, Fujisawa H, Ito H, Ishikawa T, Maekawa T. Brain temperature modifies glutamate neurotoxicity in vivo. *J Neurotrauma.* 1999;16(4):285-297.
85. Rosomoff H, Holaday D. Cerebral blood flow and cerebral oxygen consumption during hypothermia. *Am J Physiol.* 1954;179:85-88.
86. Michenfelder J, Theye R. The effects of anesthesia and hypothermia on canine cerebral ATP and lactate during anoxia produced by decapitation. *Anesthesiology.* 1970;33(4):430-439.
87. Nemoto E, Klementavicius R, Melick J, Yonas H. Suppression of cerebral metabolic rate for oxygen (CMRO₂) by mild hypothermia compared with thiopental. *J Neurosurg Anesth.* 1996;8(1):52-59.
88. Busto R, Globus M, Dietrich W, Martinez E, Valdes I, Ginsberg M. Effect of mild hypothermia on ischemia-induced release of neurotransmitters and free fatty acids in rat brain. *Stroke.* 1989;20(7):904-910.
89. Wypij D, Newburger J, Rappaport L, 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.
90. Haverich A, Hagl C. Organ protection during hypothermic circulatory arrest. *J Thorac Cardiovasc Surg.* 2003;125(3):460-462.
91. Clifton G, Miller E, Choi S, et al. Lack of effect of induction of hypothermia after acute brain injury. *N Engl J Med.* 2001;344(8):556-563.
92. Marion D. Moderate hypothermia in severe head injuries: the present and the future. *Curr Opin Crit Care.* 2002;8(2):111-114.
93. Clifton G, Choi S, Miller E, et al. Intercenter variance in clinical trials of head trauma—experience of the National Acute Brain Injury Study: Hypothermia. *J Neurosurg.* 2001;95(5):751-755.
94. Kofke WA. Incrementally applied multifaceted therapeutic bundles in neuroprotection clinical trials . . . time for change. *Neurocrit Care.* 2010;12:438-444.
95. Cheung A, Bavaria J, Weiss S, Patterson T, Stecker M. Neurophysiologic effects of retrograde cerebral perfusion used for aortic reconstruction. *J Cardiothorac Vasc Anesth.* 1999;12(3):252-259.
96. Horn M, Schlote W, Henrich H. Global cerebral ischemia and subsequent selective hypothermia. *Acta Neuropath.* 1991;81:443-449.

97. Sterz F, Safar P, Tisherman S, et al. Mild hypothermic cardiopulmonary resuscitation improves outcome after prolonged cardiac arrest in dogs. *Crit Care Med.* 1991;19:379-389.
98. Hicks S, DeFranco D, Callaway C. Hypothermia during reperfusion after asphyxial cardiac arrest improves functional recovery and selectively alters stress-induced protein expression. *J Cereb Blood Flow Metab.* 2000;20:520-530.
99. Nozari A, Safar P, Stezoski SW, et al. Mild hypothermia during prolonged cardiopulmonary cerebral resuscitation increases conscious survival in dogs. *Crit Care Med.* 2004;32(10):2110-2116.
100. Hypothermia After Cardiac Arrest Group. Mild therapeutic hypothermia to improve the neurologic outcome after cardiac arrest. *N Engl J Med.* 2002;346(8):549-556.
101. Bernard S, Gray T, Buist M, et al. Treatment of comatose survivors of out-of-hospital cardiac arrest with induced hypothermia. *N Engl J Med.* 2002;346(8):557-563.
102. Nolan J, Morley PT, Vanden Hoek TL, et al. Therapeutic hypothermia after cardiac arrest an advisory statement by the Advanced Life Support Task Force of the International Liaison Committee on Resuscitation Writing Group. *Circulation.* 2003;108:118-121.
103. Darby J. Letter to the editor. *N Engl J Med.* 2002;347:63.
104. Kofke W. Making clinical decisions based on animal research data: pro. *J Neurosurg Anesth.* 1996;8:68-72.
105. Minamisawa H, Nordstrom C, Smith M, Siesjo B. The influence of mild body and brain hypothermia on ischemic brain damage. *J Cereb Blood Flow Metab.* 1990;10(1121):365-374.
106. Dietrich W, Busto R, Valdes I, Loor Y. Effects of normothermic versus mild hyperthermic forebrain ischemia in rats. *Stroke.* 1990;21:1318-1325.
107. Minamisawa H, Smith M, Siesjo B. The effect of mild hyperthermia and hypothermia on brain damage following 5, 10, and 15 minutes of forebrain ischemia. *Ann Neurol.* 1990;28:26-33.
108. Todd M, Hindman B, Clarke W, Torner J. Intraoperative Hypothermia for Aneurysm Surgery Trial (IHAST) Investigators. Mild intraoperative hypothermia during surgery for intracranial aneurysm. *N Engl J Med.* 2005;352(2):135-145.
109. Hindman B, Todd M, Gelb A, et al. Mild hypothermia as a protective therapy during intracranial aneurysm surgery: a randomized prospective pilot trial. *Neurosurgery.* 1999;44(1):23-32.
110. Marion D, Penrod L, Kelsey S, et al. Treatment of traumatic brain injury with moderate hypothermia. *N Engl J Med.* 1997;336(8):540-546.
111. Oliveira-Filho J, Ezzeddine M, Segal A, et al. Fever in subarachnoid hemorrhage. *Neurology.* 2001;56:1299-1304.
112. Rossitch EJ, Bullard D. The autonomic dysfunction syndrome: aetiology and treatment. *Brit J Neurosurg.* 1988;2(4):471-478.
113. Commichau C, Scarmeas N, Mayer S. Risk factors for fever in the neurologic intensive care unit. *Neurology.* 2003;60(5):837-841.
114. Oddo M, Frangos S, Milby A, et al. Induced normothermia attenuates cerebral metabolic distress in patients with aneurysmal subarachnoid hemorrhage and refractory Fever. *Stroke.* 2009;40:1913-1916.
- 114a. Castillo J, Davalos A, Marrugat J, et al. Timing for fever-related brain damage in acute ischemic stroke. *Stroke.* 1998;29:2455-2460.
115. Azzimondi G, Bassein L, Nonino F, et al. Fever in acute stroke worsens prognosis: a prospective study. *Stroke.* 1995;26:2043-2050.
116. Reith J, Jorgensen H, Pedersen P, et al. Body temperature in acute stroke: relation to stroke severity, infarct size, mortality, and outcome. *Lancet.* 1996;347:422-425.
117. Ginsberg M, Busto R. Combating hypothermia in acute stroke: a significant clinical concern. *Stroke.* 1998;29:529-534.
118. Schwarz S, Aschoff A, Schwab S. Incidence and prognostic significance of fever following cerebral hemorrhage. *Neurology.* 2000;54:354-361.
119. Bachert C, Chuchalin A, Eisebitt R, Netayzhenko V, Voelker M. Aspirin compared with acetaminophen in the treatment of fever and other symptoms of upper respiratory tract infection in adults: a multicenter, randomized, double-blind, double-dummy, placebo-controlled, parallel-group, single-dose, 6-hour dose-ranging study. *Clin Ther.* 2005;27(7):993-1003.
120. Grebe W, Ionescu E, Gold M, Liu J, Frank W. A multicenter, randomized, double-blind, double-dummy, placebo- and active-controlled, parallel-group comparison of diclofenac-K and ibuprofen for the treatment of adults with influenza-like symptoms. *Clin Ther.* 2003;25(2):444-458.
121. Dippel D, van Breda E, van der Worp H, et al. Effect of paracetamol (acetaminophen) and ibuprofen on body temperature in acute ischemic stroke PISA, a phase II double-blind, randomized, placebo-controlled trial [ISRCTN98608690]. *BMC Cardiovasc Dis.* 2003;3:2.
122. Johnston S, Pelletier L. Enhanced hepatotoxicity of acetaminophen in the alcoholic patient: two case reports and a review of the literature. *Medicine.* 1997;75:185-191.
123. Wolfe, M.M., et al., *Gastrointestinal toxicity of nonsteroidal antiinflammatory drugs.* New England Journal of Medicine, 1999. 340(24): p. 1888-99.
124. Diringer M, Neurocritical Care Fever Reduction Trial Group. Treatment of fever in the neurologic intensive care unit with a catheter-based heat exchange system. *Crit Care Clin.* 2004;32(2):559-564.
125. Van den Berghe G, Wouters P, Weekers F, et al. Intensive insulin therapy in critically ill patients. *N Engl J Med.* 2001;345:1359-1367.
126. Van den Berghe G, Wilmer A, Hermans G, et al. Intensive insulin therapy in the medical ICU. *N Engl J Med.* 2006;354(5):449-461.
127. Brunkhorst FM, Engel C, Bloos F, et al. Intensive insulin therapy and pentastarch resuscitation in severe sepsis. *N Engl J Med.* 2008;358:125-139.
128. Preiser JC, Devos P, Ruiz-Santana S, et al. A prospective randomised multi-centre controlled trial on tight glucose control by intensive insulin therapy in adult intensive care units: the Glucontrol study. *Intensive Care Med.* 2009;35:1738-1748.
129. Van den Berghe G, Schetz M, Vlasselaers D, et al. Clinical review: intensive insulin therapy in critically ill patients: NICE-SUGAR or Leuven blood glucose target? *J Clin Endocrinol Metab.* 2009;94:3163-3170.
130. Rabinstein AA, Rabinstein AA. Hyperglycemia in critical illness: lessons from NICE-SUGAR. *Neurocrit Care.* 2009;11:131-132.
131. Pulsinelli W, Levy D, Sigsbee B, Scherer P, Plum F. Increased damage after ischemic stroke in patients with hyperglycemia with or without established diabetes mellitus. *Am J Med.* 1983;74:540.
132. Siemkovicz E. Hyperglycemia in the reperfusion period hampers recovery from cerebral ischemia. *Acta Neurolog Scand.* 1981;64:207.

133. Rehncrona S, Rosen I, Siesjo B. Brain lactic acidosis and ischemic cell damage: 1. Biochemistry and neurophysiology. *J Cereb Blood Flow Metab.* 1981;1:297.
134. De Salles A, Muizelaar J, Young H. Hyperglycemia, cerebrospinal fluid lactic acidosis, and CBF in severely head-injured patients. *Neurosurgery.* 1987;21:45.
135. Li P, Shamloo M, Smith M, Katsura K, Siesjo B. The influence of plasma glucose concentrations on ischemic brain damage is a threshold function. *Neurosci Lett.* 1994;177:63.
136. Warner D, Gionet T, Todd M, McAllister A. Insulin-induced normoglycemia improves ischemic outcome in hyperglycemic rats. *Stroke.* 1992;23:1775.
137. Siemkowicz E, Gjedde A. Post-ischemic coma in rat: effect of different pre-ischemic blood glucose levels on cerebral metabolic recovery after ischemia. *Acta Physiol Scand.* 1980;110:225.
138. Lanier W, Stangland K, Scheithauer B, Milde J, Michenfelder J. 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.
139. Murros K, Fogelholm R, Kettunen S, Vuorela A. Serum cortisol and outcome of ischemic brain infarction. *J Neurol Sci.* 1993;116:12.
140. Broderick J, Hagen T, Brott T, Tomsick T. Hyperglycemia and hemorrhagic transformation of cerebral infarcts. *Stroke.* 1995;26:484.
141. Murros K, Fogelholm R, Kettunen S, Vuorela A, Valve J. Blood glucose, glycosylated haemoglobin, and outcome of ischemic brain infarction. *J Neurol Sci.* 1992;111:59.
142. Matchar D, Divine G, Heyman A, Feussner J. The influence of hyperglycemia on outcome of cerebral infarction. *Ann Intern Med.* 1992;117:449.
143. de Courten-Myers G, Kleinholz M, Holm P, et al. Hemorrhagic infarct conversion in experimental stroke. *Ann Emerg Med.* 1992;21:120.
144. Sieber F, Traystman R. Special issues: glucose and the brain. [Review]. *Crit Care Med.* 1992;20:104.
145. Yip P, He Y, Hsu C, Garg N, Marangos P, Hogan E. Effect of plasma glucose on infarct size in focal cerebral ischemia-reperfusion. *Neurology.* 1991;41:899.
146. Vazquez-Cruz J, Marti-Vilalta J, Ferrer I, Perez-Gallofre A, Folch J. Progressing cerebral infarction in relation to plasma glucose in gerbils. *Stroke.* 1990;21:1621.
147. Kushner M, Nencini P, Reivich M, et al. Relation of hyperglycemia early in ischemic brain infarction to cerebral anatomy, metabolism, and clinical outcome. *Ann Neurol.* 1990;28:129.
148. Kraft S, Larson CJ, Shuer L, Steinberg G, Benson G, Pearl R. Effect of hyperglycemia on neuronal changes in a rabbit model of focal cerebral ischemia. *Stroke.* 1990;21:447.
149. Zasslow M, Pearl R, Shuer L, Steinberg G, Lieberson R, Larson CJ. Hyperglycemia decreases acute neuronal ischemic changes after middle cerebral artery occlusion in cats. *Stroke.* 1989;20:519.
150. de Courten-Myers G, Myers R, Schoolfield L. Hyperglycemia enlarges infarct size in cerebrovascular occlusion in cats. *Stroke.* 1988;19:623.
151. Duverger D, MacKenzie E. The quantification of cerebral infarction following focal ischemia in the rat: influence of strain, arterial pressure, blood glucose concentration, and age. [Review]. *J Cereb Blood Flow Metab.* 1988;8:449.
152. Nedergaard M. Mechanisms of brain damage in focal cerebral ischemia. [Review]. *Acta Neurol Scand.* 1988;77:81.
153. Prado R, Ginsberg M, Dietrich W, Watson B, Busto R. Hyperglycemia increases infarct size in collaterally perfused but not end-arterial vascular territories. *J Cereb Blood Flow Metab.* 1988;8:186.
154. Ginsberg M, Prado R, Dietrich W, Busto R, Watson B. Hyperglycemia reduces the extent of cerebral infarction in rats. *Stroke.* 1987;18:570.
155. Nedergaard M. Transient focal ischemia in hyperglycemic rats is associated with increased cerebral infarction. *Brain Res.* 1987;408:79.
156. Nedergaard M, Astrup J. Infarct rim: effect of hyperglycemia on direct current potential and [14C]2-deoxyglucose phosphorylation. *J Cereb Blood Flow Metab.* 1986;6:607.
157. Bhatia A, Cadman B, Mackenzie I. Hypoglycemia and cardiac arrest in a critically ill patient on strict glycemetic control. *Anesth Analg.* 2006;102(2):549-551.
158. Oddo M, Schmidt JM, Carrera E, et al. Impact of tight glycemetic control on cerebral glucose metabolism after severe brain injury: a microdialysis study. *Crit Care Med.* 2008;36:3233-3238.
159. Kofke W, Ahdab-Barmada M, Rose M, Clyde C, Nemoto E. Substantia nigra damage after flurothyl-induced seizures in rats worsens after post seizure recovery: no exacerbation with hyperglycemia. *Neurol Res.* 1993;15:333.
160. Swan J, Meldrum B, Simon R. Hyperglycemia does not augment neuronal damage in experimental status epilepticus. *Neurology.* 1986;36(10):1351.
161. Ingvar M, Folbegrova J, Siesjo B. Metabolic alterations underlying the development of hypermetabolic necrosis in the substantia nigra in status epilepticus. *J Cereb Blood Flow Metab.* 1987;7(1):103.
162. Lundberg N. Continuous recording and control of ventricular fluid pressure in neurosurgical practice. *Acta Psychiatr Neurol Scand.* 1960;36(149 Suppl):1.
163. Risberg J, Lundberg N, Ingvar D. Regional cerebral blood volume during acute rises in the intracranial pressure(plateau waves). *J Neurosurg.* 1969;31:303.
164. Rosner M, Becker D. Origin and evolution of plateau waves. Experimental observations and a theoretical model. *J Neurosurg.* 1984;50:312.
165. Rosner M, Becker D. The etiology of plateau waves: a theoretical model and experimental observations. In: *Intracranial Pressure.* Ishii S, Nagai H, Brock M, eds. New York: Springer-Verlag; 1983:301.
166. Matakas F, Von Waechter R, Knupling R, Potolicchio SJ. Increase in cerebral perfusion pressure by arterial hypertension in brain swelling. A mathematical model of the volume-pressure relationship. *J Neurosurg.* 1975;42:282.
167. Steiner LA, Czosnyka M, Piechnik SK, et al. Continuous monitoring of cerebrovascular pressure reactivity allows determination of optimal cerebral perfusion pressure in patients with traumatic brain injury. *Crit Care Med.* 2002;30:733-738.
168. Nakagawa Y, Tsuru M, Yada K. Site and mechanism for compression of the venous system during experimental intracranial hypertension. *J Neurosurg.* 1974;41:427-434.
169. Nemoto EM. Dynamics of cerebral venous and intracranial pressures. *Acta Neurochir Suppl.* 2006;96:435-437.
170. McPherson RW, Koehler RC, Traystman RJ. Effect of jugular venous pressure on cerebral autoregulation in dogs. *Am J Physiol.* 1988;255:1516-1524.
171. Piechnik SK, Czosnyka M, Richards HK, Whitfield PC, Pickard JD. Cerebral venous blood outflow: a theoretical model based on laboratory simulation. *Neurosurgery.* 2001;49:1214-1222.

172. Grande P, Asgeirsson B, Nordstrom C. Volume-targeted therapy of increased intracranial pressure: the Lund concept unifies surgical and non-surgical treatments. *Acta Anaesth Scand.* 2002;46(8):929-941.
173. Kongstad L, Grande PO. Arterial hypertension increases intracranial pressure in cat after opening of the blood-brain barrier. *J Trauma.* 2001;51:490-496.
174. Czosnyka M, Smielewski P, Piechnik S, Steiner LA, Pickard JD. Cerebral autoregulation following head injury. *J Neurosurg.* 2001;95:756-763.
175. Zweifel C, Lavinio A, Steiner LA, et al. Continuous monitoring of cerebrovascular pressure reactivity in patients with head injury. *Neurosurg Focus.* 2008;25(4):E2.
176. Brady KM, Lee JK, Kibler KK, et al. Continuous time-domain analysis of cerebrovascular autoregulation using near-infrared spectroscopy. *Stroke.* 2007;38:2818-2825.
177. Lang EW, Lagopoulos J, Griffith J, et al. Noninvasive cerebrovascular autoregulation assessment in traumatic brain injury: validation and utility. *J Neurotrauma.* 2003;20:69-75.
178. Lang EW, Mehdorn HM, Dorsch NWC, Czosnyka M. Continuous monitoring of cerebrovascular autoregulation: a validation study. *J Neurol Neurosurg Psychiatry.* 2002;72:583-586.
179. Brady KM, Lee JK, Kibler KK, et al. Continuous time-domain analysis of cerebrovascular autoregulation using near-infrared spectroscopy. *Stroke.* 2007;38:2818-2825.
180. Joshi BL, Brady K, Hogue CW. Real-time monitoring of cerebral blood flow autoregulation with NIRS during cardiac surgery. *Proceedings of the 2009 Annual Meeting of the American Society Anesthesiologists.* New Orleans, LA: American Society Anesthesiologists; 2009.
181. Czosnyka M, Pickard JD. Monitoring and interpretation of intracranial pressure. *J Neurol Neurosurg Psychiatry.* 2004;75:813-821.
182. Czosnyka M, Smielewski P, Kirkpatrick P, Laing RJ, Menon D, Pickard JD. Continuous assessment of the cerebral vasomotor reactivity in head injury. *Neurosurgery.* 1997;41:11-17.
183. Lang EW, Lagopoulos J, Griffith J, et al. Cerebral vasomotor reactivity testing in head injury: the link between pressure and flow. *J Neurol Neurosurg Psychiatry.* 2003;74:1053-1059.
184. Coles JP, Fryer TD, Smielewski P, et al. Incidence and mechanisms of cerebral ischemia in early clinical head injury. *J Cereb Blood Flow Metab.* 2004;24:202-211.
185. Coles JP, Fryer TD, Smielewski P, et al. Defining ischemic burden after traumatic brain injury using 15O PET imaging of cerebral physiology. *J Cereb Blood Flow Metab.* 2004;24:191-201.
186. Menon DK, Coles JP, Gupta AK, et al. Diffusion limited oxygen delivery following head injury. *Crit Care Med.* 2004;32:1384-1390.
187. Manno E, Atkinson J, Fulgham J, Wijdicks E. Emerging medical and surgical management strategies in the evaluation and treatment of intracerebral hemorrhage. *Mayo Clin Proc.* 2005;80(3):420-433.
188. Busto R, Harik S, Yoshida S, Scheinberg P, Ginsberg M. Cerebral norepinephrine depletion enhances recovery after brain ischemia. *Ann Neurol.* 1985;18:329.
189. Kofke, W.A., et al., *Opioid neurotoxicity: role of neurotransmitter systems.* *Neurol Res.* 2000. 22(7): p. 733-7.
190. Neil-Dwyer G, Walter P, Cruickshank J. Beta-blockade benefits patients following a subarachnoid hemorrhage. *Eur J Clin Pharmacol.* 1985;28:25.
191. Schroeder T, Schierbeck J, Howardy P, Knudsen L, Skafte-Holm P, Gefke K. Effect of labetalol on CBF and middle cerebral arterial flow velocity in healthy volunteers. *Neurol Res.* 1991;13:10.
192. Orłowski J, Shiesley D, Vidt D, et al. Labetalol to control blood pressure after cerebrovascular surgery. *Crit Care Med.* 1988;16:765.
193. Van Aken H, Puchstein C, Schweppe M-L, et al. Effect of labetalol on intracranial pressure in dogs with and without intracranial hypertension. *Acta Anaesth Scand.* 1982;26:615.
194. Kakariika A, Schakel E, Fritze J. Clinical experiences with nimodipine in cerebral ischemia. [Review]. *J Neural Trans Suppl.* 1994;43:13.
195. Rosenbaum D, Zabramski J, Frey J, et al. Early treatment of ischemic stroke with a calcium antagonist. *Stroke.* 1991;22:437.
196. Anonymous. A multicenter trial of the efficacy of nimodipine on outcome after severe head injury. The European Study Group on Nimodipine in Severe Head Injury. *J Neurosurg.* 1994;80:797.
197. Pickard J, Murray G, Illingworth R, et al. Effect of oral nimodipine on cerebral infarction and outcome after subarachnoid haemorrhage: British aneurysm nimodipine trial. *BMJ.* 1989;298:636.
198. Kucharczyk J, Chew W, Derugin N, et al. Nicardipine reduces ischemic brain injury. Magnetic resonance imaging/spectroscopy study in cats. *Stroke.* 1989;20(2):268.
199. Alps B, Calder C, Hass W, Wilson A. Comparative protective effects of nicardipine, flunarizine, lidoflazine and nimodipine against ischaemic injury in the hippocampus of the Mongolian gerbil. *Br J Pharmacol.* 1988;93(4):877.
200. Grotta J, Spydell J, Pettigrew C, Ostrow P, Hunter D. The effect of nicardipine on neuronal function following ischemia. *Stroke.* 1986;17(2):213.
201. Bedford R, Dacey R, Winn H, Lynch CD. Adverse impact of a calcium entry-blocker (verapamil) on intracranial pressure in patients with brain tumors. *J Neurosurg.* 1983;59(5):800.
202. Hayashi M, Kobayashi H, Kawano H, Handa Y, Hirose S. Treatment of systemic hypertension and intracranial hypertension and intracranial hypertension in cases of brain hemorrhage. *Stroke.* 1988;19:314.
203. Stanek B, Zimpfer M, Fitzal S, Raberger G. Plasma catecholamines, plasma renin activity and haemodynamics during sodium nitroprusside-induced hypotension and additional beta-blockage with bunitrolol. *Eur J Clin Pharmacol.* 1981;19:317.
204. Stiefel M, Heuer G, Abrahams J, et al. The effect of nimodipine on cerebral oxygenation in patients with poor-grade subarachnoid hemorrhage. *J Neurosurg.* 2004;101(4):594-599.
205. Overgaard J, Skinhoj E. A paradoxical cerebral hemodynamic effect of hydralazine. *Stroke.* 1975;6(4):402.
206. Griswold W, Roznik V, Mendoza S. Nitroprusside induced intracranial hypertension. *JAMA.* 1981;246:2679.
207. Marsh M, Shapiro H, Smith R, et al. Changes in neurologic status and intracranial pressure associated with sodium nitroprusside administration. *Anesthesiology.* 1979;51:336.
208. Dohi S, Matsumoto M, Takahashi K. The effects of nitroglycerin on cerebrospinal fluid pressure in awake and anesthetized humans. *Anesthesiology.* 1981;54:511.
209. Cheung AT, Guvakov DV, Weiss SJ, Savino JS, Salgo IS, Meng QC. Nicardipine intravenous bolus dosing for acutely decreasing arterial blood pressure during general anesthesia for car-

- diac operations: pharmacokinetics, pharmacodynamics, and associated effects on left ventricular function. *Anesth Analg*. 1999;89:1116-1123.
210. Cheung DG, Gasster JL, Neutel JM, Weber MA. Acute pharmacokinetic and hemodynamic effects of intravenous bolus dosing of nicardipine. *Am Heart J*. 1990;119:438-442.
 211. Meinig G, Reulen H, Hadjidimos A, Siemon C, Bartko D, Schurmann K. Induction of filtration edema by extreme reduction of cerebrovascular resistance associated with hypertension. *Eur Neurol*. 1972;8:97.
 212. Langfitt T, Marshall W, Kassell N, Schutta H. The pathophysiology of brain swelling produced by mechanical trauma and hypertension. *Scand J Clin Lab Invest Suppl*. 1968;102(XIV):B.
 213. Marshall W, Jackson J, Langfitt T. Brain swelling caused by trauma and arterial hypertension. Hemodynamic aspects. *Arch Neurol*. 1969;21:545.
 214. Schutta H, Kassell N, Langfitt T. Brain swelling produced by injury and aggravated by arterial hypertension. A light and electron microscopic study. *Brain*. 1968;91:281.
 215. Marshall W, Weinstein J, Langfitt T. The pathophysiology of brain swelling produced by mechanical trauma and hypertension. *Surg Forum*. 1968;19:431.
 216. Olesen J. The effect of intracarotid epinephrine, norepinephrine, and angiotensin on the regional CBF in man. *Neurology*. 1972;22:978-987.
 217. MacKenzie E, McCulloch J, Harper A. Influence of endogenous norepinephrine on CBF and metabolism. *Am J Physiol*. 1976;231:489.
 218. Darby J, Yonas H, Marks E, Durham S, Snyder R, Nemoto E. Acute CBF response to dopamine-induced hypertension after subarachnoid hemorrhage. *J Neurosurg*. 1994;80:857.
 219. Stein S, Cracco R. Cortical injury without ischemia produced by topical monoamines. *Stroke*. 1982;13:74.
 220. Hindman B, Funatsu N, Cheng D, Bolles R, Todd M, Tinker J. Differential effect of oncotic pressure on cerebral and extracerebral water content during cardiopulmonary bypass in rabbits. *Anesthesiology*. 1990;73:951.
 221. Kaieda R, Todd M, Warner D. Prolonged reduction in colloid oncotic pressure does not increase brain edema following cryogenic injury in rabbits. *Anesthesiology*. 1989;71(4):554.
 222. Kaieda R, Todd M, Cook L, Warner D. Acute effects of changing plasma osmolality and colloid oncotic pressure on the formation of brain edema after cryogenic injury. *Neurosurgery*. 1989;24:671.
 223. Zornow M, Scheller M, Todd M, Moore S. Acute cerebral effects of isotonic crystalloid and colloid solutions following cryogenic brain injury in the rabbit. *Anesthesiology*. 1988;69:180.
 224. Tommasino C, Moore S, Todd M. Cerebral effects of isovolemic hemodilution with crystalloid or colloid solutions. *Crit Care Med*. 1988;16:862.
 225. Zornow M, Todd M, Moore S. The acute cerebral effects of changes in plasma osmolality and oncotic pressure. *Anesthesiology*. 1987;67:936.
 226. Cruickshank J, Neil-Dwyer G, Lane J. The effect of oral propranolol upon the ECG changes occurring in subarachnoid hemorrhage. *Cardiovasc Res*. 1975;9:236.
 227. Kono T, Morita H, Kuroiwa T, Onaka H, Takatsuka H, Fujiwara A. Left ventricular wall motion abnormalities in patients with subarachnoid hemorrhage: neurogenic stunned myocardium. *J Am Coll Cardiol*. 1994;24:636.
 228. Kolin A, Norris J. Myocardial damage from acute cerebral lesions. *Stroke*. 1984;15:990.
 229. Svengaard N, Brismar J, Delgado TJ, Rosengren E, Stenevi U. Subarachnoid hemorrhage in the rat: effect on the development of cerebral vasospasm of lesions in the central serotonergic and dopaminergic systems. *Stroke*. 1986;17:86.
 230. Svengaard N, Delgado T, Arbab M. Catecholaminergic and peptidergic systems underlying cerebral vasospasm: CBF and CMRgl changes following an experimental subarachnoid hemorrhage in the rat. In: Wilkins R. *Proceedings of the Charlottesville Conference, Cerebral Vasospasm*, April 29-May 1. New York, Raven Press; 1987:175.
 231. Hartmann A, Dettmers C, Schuler F, Wassmann H, Schumacher H. Effect of stable xenon on regional CBF and the electroencephalogram in normal volunteers. *Stroke*. 1991;22(2):181.
 232. Shapiro H, Marshall L. Intracranial pressure responses to PEEP in head-injured patients. *J Trauma*. 1978;18:254.
 233. Huseby J, Luce J, Cary J, Pavlin E, Butler J. Effects of positive end-expiratory pressure on intracranial pressure in dogs with intracranial hypertension. *J Neurosurg*. 1981;55(5):704.
 234. Shapiro H. Intracranial hypertension: therapeutic and anesthetic considerations. *Anesthesiology*. 1975;43:445.
 235. Aidinis S, Lafferty J, Shapiro H. Intracranial responses to PEEP. *Anesthesiology*. 1976;45(3):275-286.
 236. Harken A, Brennan M, Smith B, et al. The hemodynamic response to positive end-expiratory ventilation in hypovolemic patients. *Surgery*. 1974;76:786-793.
 237. Luce J, Huseby J, Kirk W, Butler J. A Starling resistor regulates cerebral venous outflow in dogs. *J Appl Physiol*. 1982;53:1496.
 238. Borgstrom L, Johannsson H, Siesjo B. The influence of acute normovolemic anemia on cerebral blood flow and oxygen consumption of anesthetized rats. *Acta Physiol Scand*. 1975;93(40):505-514.
 239. Floyd T, McGarvey M, Ochroch E, et al. Perioperative changes in cerebral blood flow after cardiac surgery: influence of anemia and aging. *Ann Thoracic Surg*. 2003;76(6):2037-2042.
 - 239a. Dexter F, Hindman BJ. Effect of haemoglobin concentration on brain oxygenation in focal stroke: a mathematical modeling study. *Br J Anaesth* 1997;79:346-351.
 240. Kim J, Kang S. Bleeding and subsequent anemia: a precipitant for cerebral infarction. *Eur Neurol*. 2000;43(4):201-208.
 241. Oddo M, Milby A, Chen I, et al. Hemoglobin concentration and cerebral metabolism in patients with aneurysmal subarachnoid hemorrhage. *Stroke*. 2009;40:1275-1281.
 242. Smith M, Maggee S, Stiefel M, Bloom S, Gracias V, Le Roux P. Packed red blood cell transfusion increases local cerebral oxygenation. *Crit Care Clin*. 2005;33:1104-1108.
 243. McIntyre L, Hebert P, Wells G, et al. CCCT: is a restrictive transfusion strategy safe for resuscitated and critically ill trauma patients? *J Trauma*. 2004;57(3):563-568.
 244. Corwin HL, Gettinger A, Pearl RG, et al. The CRIT study: anemia and blood transfusion in the critically ill—current clinical practice in the United States. *Crit Care Med*. 2004;32:39-52.
 245. Gajic O, Rana R, Winters JL, et al. Transfusion-related acute lung injury in the critically ill: prospective nested case-control study. *Am J Resp Crit Care Med*. 2007;176:886-891.
 246. Netzer G, Shah CV, Iwashyna TJ, et al. Association of RBC transfusion with mortality in patients with acute lung injury. *Chest*. 2007;132:1116-1123.

247. Vincent JL, Baron JF, Reinhart K, et al. Anemia and blood transfusion in critically ill patients. *JAMA*. 2002;288:1499-1507.
248. Smith MJ, Le Roux PD, Elliott JP, et al. Blood transfusion and increased risk for vasospasm and poor outcome after subarachnoid hemorrhage. *J Neurosurg*. 2004;101:1-7.
249. George ME, Skarda DE, Watts CR, et al. Aggressive red blood cell transfusion: no association with improved outcomes for victims of isolated traumatic brain injury. *Neurocrit Care*. 2008;8:337-343.
250. McIntyre LA, Fergusson DA, Hutchison JS, et al. Effect of a liberal versus restrictive transfusion strategy on mortality in patients with moderate to severe head injury. *Neurocrit Care*. 2006;5:4-9.
251. Koch CG, Li L, Sessler DI, et al. Duration of red-cell storage and complications after cardiac surgery. *N Engl J Med*. 2008;358:1229-1239.
252. Goldstein A, Wells B, Keats A. Increased tolerance to cerebral anoxia by pentobarbital. *Arch Int Pharmacodyn Ther*. 1966;138:138.
253. Bleyaert A, Nemoto E, Safar P, et al. Thiopental amelioration of brain damage after global ischemia-in-monkeys. *Anesthesiology*. 1978;49:390.
254. Gisvold S, Safar P, Hendrickx H, Alexander H. Thiopental treatment after global brain ischemia in monkeys. *Anesthesiology*. 1981;55:A97.
255. Steen P, Milde J, Michenfelder J. No barbiturate protection in a dog model of complete cerebral ischemia. *Ann Neurol*. 1979;5:343.
256. Anonymous. Randomized clinical study of thiopental loading in comatose survivors of cardiac arrest. Brain Resuscitation Clinical Trial I Study Group. *N Engl J Med*. 1986;314(7):397-403.
257. Selman W, Spetzler RF, Roski RA, Roessmann U, Crumrine R, Macko R. Barbiturate coma in focal cerebral ischemia. Relationship of protection to timing of therapy. *J Neurosurg*. 1982;56(5):685-690.
258. Selman W, Spetzler R, Roessmann U, Rosenblatt J, Crumrine R. Barbiturate-induced coma therapy for focal cerebral ischemia. Effect after temporary and permanent MCA occlusion. *J Neurosurg*. 1981;55:220.
259. Warner D, Takaoka S, Wu B, et al. Electroencephalographic burst suppression is not required to elicit maximal neuroprotection from pentobarbital in a rat model of focal cerebral ischemia. *Anesthesiology*. 1996;84(6):1475-1484.
260. Watson J, Drummond J, Patel P, et al. A comparison of the cerebral protective effects of etomidate in a model of incomplete forebrain ischemia. *Neurosurgery*. 1992;30:540-544.
261. Sano T, Patel P, Drummond J, Cole D. A comparison of the cerebral protective effects of etomidate, thiopental and isoflurane in a model of forebrain ischemia in the rat. *Anesth Analg*. 1993;76:990-997.
262. Xue Q, Yu B, Wang Z, Chen H. Effects of ketamine, midazolam, thiopental, and propofol on brain ischemia injury in rat cerebral cortical slices. *Acta Pharma Sinica*. 2004;25(1):115-120.
263. Chen L, Gong Q, Xiao C. Effects of propofol, midazolam and thiopental sodium on outcome and amino acids accumulation in focal cerebral ischemia-reperfusion in rats. *Chinese J Med*. 2003;116(2):292-296.
264. Ito H, Watanabe Y, Isshiki A, Uchino H. Neuroprotective properties of propofol and midazolam, but not pentobarbital, on neuronal damage induced by forebrain ischemia, based on the GABAA receptors. *Acta Anaesth Scand*. 1999;43(2):153-162.
265. Engelhard K, Werner C, Eberspacher E, et al. Influence of propofol on neuronal damage and apoptotic factors after incomplete cerebral ischemia and reperfusion in rats: a long-term observation. *Anesthesiology*. 2004;101(4):912-917.
266. Bayona N, Gelb A, Jiang Z, Wilson J, Urquhart B, Cechetto D. Propofol neuroprotection in cerebral ischemia and its effects on low-molecular-weight antioxidants and skilled motor tasks. *Anesthesiology*. 2004;100(5):1151-1159.
267. Wang J, Yang X, Camporesi C, et al. Propofol reduces infarct size and striatal dopamine accumulation following transient middle cerebral artery occlusion: a microdialysis study. *Eur J Pharm*. 2002;452(3):303-308.
268. Drummond J, Cole D, Patel P, Reynolds L. Focal cerebral ischemia during anesthesia with etomidate, isoflurane, or thiopental: a comparison of the extent of cerebral injury. *Neurosurgery*. 1995;37(4):742-748; discussion 748-749.
269. Velly L, Guillet B, Masmajeun F, et al. Neuroprotective effects of propofol in a model of ischemic cortical cell cultures: role of glutamate and its transporters. *Anesthesiology*. 2003;99(2):368-375.
270. Kofke W, Towfighi J, Garman R, Graybeal J, Housman C, Hawkins R. Effects of anesthetics on neuropathologic sequelae of status epilepticus in rats. *Anesth Analg*. 1993;77:330.
271. Newberg L, Michenfelder J. Cerebral protection by isoflurane during hypoxemia or ischemia. *Anesthesiology*. 1983;59(1):29-35.
272. Warner D, McFarlane C, Todd M, Ludwig P, McAllister A. Sevoflurane and halothane reduce focal ischemic brain damage in the rat. *Anesthesiology*. 1993;79:985-962.
273. Warner D, Ludwig P, Pearlstein R, Brinkhous A. Halothane reduces focal ischemic injury in the rat when brain temperature is controlled. *Anesthesiology*. 1995;82:1237-1245.
274. Baughman V, Hoffman W, Thomas C, Miletich D, Albrecht RF. Comparison of methohexital and isoflurane on neurologic outcome and histopathology following incomplete ischemia in rats. *Anesthesiology*. 1990;72:85-94.
275. Baughman V, Hoffman W, Miletich D, Albrecht R, Thomas C. Neurologic outcome in rats following incomplete cerebral ischemia during halothane, isoflurane or N₂O. *Anesthesiology*. 1988;69:192-198.
276. Miura Y, Grocott H, Bart R, Pearlstein R, Dexter F, Warner DS. Differential effects of anesthetic agents on outcome from near-complete but not incomplete global ischemia in the rat. *Anesthesiology*. 1998;89:391-400.
277. Soonthan-Brant V, Patel P, Drummond J, Cole D, Kelly P, Watson M. Fentanyl does not increase brain injury after focal cerebral ischemia in rats. *Anesth Analg*. 1999;88:49-55.
278. Saito R, Graf R, Hubel K, Fujita T, Rosner G, Heiss W. Reduction of infarct volume by halothane: effect on cerebral blood flow or perifocal spreading depression-like depolarizations. *J Cereb Blood Flow Metab*. 1997;17:857-864.
279. Kawaguchi M, Kimbro J, Drummond J, Cole D, Kelly P, Patel PM. Isoflurane delays but does not prevent cerebral infarction in rats subjected to focal ischemia. *Anesthesiology*. 2000;92:1335-1342.
280. Inoue S, Drummond J, Davis D, Cole D, Patel P. Combination of isoflurane and caspase inhibition reduces cerebral injury in rats subjected to focal cerebral ischemia. *Anesthesiology*. 2004;101(1):75-81.

281. Elserly H, Sheng H, Lynch J, Moldovan M, Pearlstein R, Warner D. Effects of isoflurane versus fentanyl-nitrous oxide anesthesia on long-term outcome from severe forebrain ischemia in the rat. *Anesthesiology*. 2004;100(5):1160-1166.
282. Kofke W, Garman R, Janosky J, Rose M. Opioid neurotoxicity: neuropathologic effects of different fentanyl congeners and effects of hexamethonium-induced normotension. *Anesth Analg*. 1996;83:141-146.
283. Kofke W, Garman R, Stiller R, Rose M, Garman R. Opioid neurotoxicity: fentanyl dose response effects in rats. *Anesth Analg*. 1996;83:1298-1306.
284. Kofke W, Garman R, Tom W, et al. Alfentanil-induced hypermetabolism, seizure, and neuropathology in rats. *Anesth Analg*. 1992;75:953.
285. Kofke W, Attaallah A, Kuwabara H, et al. Neuropathologic effects in rats and neurometabolic effects in humans of high-dose remifentanil. *Anesth Analg*. 2002;94:1229-1236.
286. Kofke W, Blissitt P, Rao H, Wang J, Addya K, Detre J. Remifentanil-induced cerebral blood flow effects in normal humans: dose and ApoE genotype effects. *Anesth Analg*. 2007;105(1):167-175.
287. Kearse LJ, Koski G, Husain M, et al. Epileptiform activity during opioid anesthesia. *Electroenceph Clin Neurophysiol*. 1993;87:374.
288. Kofke W, Garman R, Garman R, Rose M. Opioid neurotoxicity: fentanyl-induced exacerbation of forebrain ischemia in rats. *Anesthesiology*. 1994;81:A820.
289. Statler K, Kochanek P, Dixon C, et al. Isoflurane improves long-term neurologic outcome versus fentanyl after traumatic brain injury in rats. *J Neurotrauma*. 2000;17(12):1179-1189.
290. Sinz E, Kofke W, Garman R. Phenytoin, midazolam, and naloxone protect against fentanyl-induced brain damage in rats. *Anesth Analg*. 2000;91:1443-1449.