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Impact of anaesthesia on systemic and cerebral metabolism of glucose in diabetes neurosurgical patients "Up dates of diabetes and neurosurgical anesthesia"

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Abstract

Accumulating evidences demonstrate that patients with diabetes have higher perioperative risk of complications and longer hospital stays than the patients without diabetes. Intensive insulin therapy (IIT) may improve outcomes in hyperglycemic neurosurgical patients. However, currently there is no adequate data/evidence regarding optimal insulin delivery protocols and targeted blood glucose concentration during IIT. IIT continues to be explored as a therapeutic method to reduce morbidity associated with derangements in glucose metabolism. Hypoglycemia is a common side effect of IIT with the potential to result in significant morbidity, especially in patients undergoing neurosurgical surgery. Surgical stimulus is a potent cause which affects patients stress response and influences the metabolic and endocrine system, which can lead to electrolyte imbalance and decrease of blood insulin level and subsequently result in impairment of immune response and increase of blood glucose level. The stress response can be prevented by sufficient Depth of anesthesia. So the Anesthesiologists play a very important role in manipulating the blood glucose of the diabetes neurosurgical patients during the neurosurgical operations. Narcotics affect systemic and cerebral metabolism, and studies indicate that most of anesthetics have restraining effects on brain oxygen and glucose consumption. For better regulating the blood glucose, the anesthesiologists should master the actions of every anesthetics. IIT is a double-edged sword, more investigations should be focused on the optimal blood glucose level for euglycemia maintenance in the intraoperative management of diabetes neurosurgical patients.

Biography

Dr. Youtan Liu received his PhD in Anesthesiology and Pathophysiology many years ago and had served as an anesthetist for 25 years in China. His main researching interests are in Diabetes and Neurosurgical Anaesthesia, Whole Body Hyperthermia and Perioperative Brain Protection. He is now a Consultant Dr. in the Department of Anesthesiology, The University of Hong Kong Shenzhen Hospital and an Honorary Associate Professor of Anesthesiology, The University of Hong Kong, He is also the Deputy President of Shenzhen Anesthesiology Association. He has published more than 30 papers in reputed journals and is now serving as an editorial board member of the International Journal of Anesthesiology and Resuscitation.