

Hyperglycemia and postoperative outcomes in pediatric neurosurgery

Eduardo Mekitarian Filho

University of Sao Paulo, Brazil

Recent studies in adults have demonstrated the deleterious effects of hyperglycemia in intensive care patients and its substantial impact on crucial outcomes such as mortality. As a result, there is an increasing interest in the impact of this complication on the outcomes of critical illness in children. A clear association between hyperglycemia and poorer outcomes has been demonstrated in some specific clinical situations, such as septic shock, cardiac surgery, and traumatic brain injury. However, hyperglycemia has yet to be fully studied in the context of pediatric surgery, and no pediatric neurosurgical studies have analyzed the association between hyperglycemia, morbidity, and mortality. The charts of 198 patients were analyzed during the study. The most frequent surgeries were brain tumor resection (37.4%), craniostomosis (31.3%) and ventriculoperitoneal shunting (16.7%). A total of 139 glucose measurements were recorded for the patients included in the study. Hyperglycemia was diagnosed in 62.6% of the patients. The patient glucose level upon admission to the PICU and the highest glucose level noted in the first 24 hours post-admission were recorded. The mean glucose level was recorded following the 24-hour measurement. A univariate analysis identified a positive association between hyperglycemia and a prolonged duration of PICU stay (3.88 days vs. 2.46 days, $p = 0.042$). However, hyperglycemia was not associated with prolonged hospitalization or the duration of mechanical ventilation required. The multivariate analysis did not identify any positive associations between hyperglycemia and any of the three outcomes studied. Hyperglycemia is frequent in children following neurosurgery and was not found to be associated with the durations of mechanical ventilation, PICU stay, or hospital stay in this sample of pediatric patients. In pediatric patients, glucose levels should be carefully and accurately controlled after surgery, as this may reduce morbidity and hospitalization time. Further studies are necessary to elucidate the role of hyperglycemia in pediatric neurosurgical patients.

Biography

Dr. Eduardo Mekitarian Filho has completed his studies in Pediatrics and Pediatric Intensive Care in 2008, at University of Sao Paulo, and got his master's degree in 2011, at Federal University of Sao Paulo, studying perioperative factors associated with morbidity in pediatric neurosurgery. He's currently working in the pediatric emergency departments of University of Sao Paulo and Hospital Israelita Albert Einstein. He has published 9 articles in indexed journals and is currently reviewer for Clinics, J Pediatr (Rio J), Revista da Associação Médica Brasileira and Revista Brasileira de Terapia Intensiva.

emf2002@uol.com.br