

PERFECT STORM OF LIFE-THREATENING HYPOCALCEMIA IN A SEVERE TRAUMA PATIENT

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Abstract

The presentations of patients with hypocalcemia varies from an asymptomatic biochemical abnormality to a life-threatening disorder, depending on the severity, duration, and rapidity of development. Hypocalcemia was frequently found in hospitalized patient, but severe low level with life-threatening manifestation in a short period of time rarely occurred. Herein, we reported a trauma patient with “Perfect Storm” scenario of severe hypocalcemia development. Multiple factors contributed to severe hypocalcaemia, included trauma injury with rhabdomyolysis, hyperphosphatemia, acute renal failure, and blood transfusion. Acute hypocalcemia can result in life-threatening complications such as refractory hypotension and cardiac arrhythmia that need rapid correction. Therefore, carefully observation of the clinical signs and monitoring calcium level is suggested in trauma patients.

Key Words: Severe hypocalcemia, Trauma injury, Cardiac arrhythmia

Introduction

Calcium regulation is critical for normal cell function, neural transmission, membrane stability, bone structure, blood coagulation, and intracellular signaling. Hypocalcemia in critically ill patients is not uncommon, but it seems often ignored and underestimated its risk. Hypocalcemia is highly prevalent in hospitalized patients (10% to 18%) and particularly common (70% to 80%) in the intensive care unit.^{1,2} The presentations of patients with hypocalcemia varies from an asymptomatic biochemical abnormality to a life-threatening disorder, depending on the severity, duration, and rapidity of development.

Case report

A 33-year-old man who with no known chronic illness was admitted to our intensive care unit because he suffered vehicle accident complicated with traumatic epidural hematoma and left subtrochanteric fracture. He underwent right frontal-temporal craniotomy with removal of epidural hematoma, intracranial pressure monitor implantation and skeletal traction of left distal femur on the same day. He received blood transfusion with packed red blood cells during surgery because blood loss. Besides, he also received glycerol treatment because head injury to prevent increasing intracranial pressure and brain swelling. After

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