

عنوان مقاله:

The Effects of High-dose Selenium Supplementation on the Oxidative Stress Status and Inflammatory Markers in Critically Ill Pediatric Patients after Gastrointestinal Surgery: A Randomized Clinical Trial Protocol Study

محل انتشار:

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خلاصه مقاله:

Introduction: Oxidative stress and inflammation could occur after major gastrointestinal surgeries. Selenium is a micronutrient with anti-inflammatory and antioxidant properties, which could improve the inflammatory markers in the children admitted to the intensive care unit (ICU) after gastrointestinal surgeries. Due to the lack of evidence on the potential effects of high-dose selenium on post-surgical critically ill children, the present study aimed to evaluate the effects of high-dose selenium supplementation on the levels of inflammatory markers and oxidative stress status in pediatric patients after gastrointestinal surgery. **Methods and analysis:** We will conduct a single-blinded, randomized, parallel group superiority trial at Akbar Pediatrics Hospital in Mashhad, Iran. The sample population will consist of 70 patients undergoing gastrointestinal surgery, who will admit to the ICU at the selected hospital. The control group will receive the recommended dietary allowance (RDA) doses of selenium, and the intervention group will receive 20 µg/kg/d of selenium. The primary outcomes, (the pro-oxidant-antioxidant balance (PAB) status, interleukin-1 beta (IL-1β), and high-sensitivity C-reactive protein (hs-CRP)) will be measured before surgery and upon discharge time. The secondary outcomes, (serum glutathione peroxidase (GPX) level and serum and urine selenium levels), will be measured before surgery, after surgery, and upon ICU discharge time. We will perform the intra-group and inter-group data analysis in SPSS software, and we will consider the intention-to-treat approach, statistical significance level of <0.05, and 95% confidence interval in all the statistical analyses

کلمات کلیدی:

Selenium, Inflammation, Oxidative stress, Intensive Care Unit, Pediatric

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