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Estimations of a degree of steroid induced leukocytosis in critical care patients with acute infections

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Statement of the Problem: Glucocorticosteroids (GCS) are known to cause the hematologic effect of leukocytosis and neutrophilia. Leukocytosis is a key parameter in establishing the diagnosis of sepsis and in the estimation of its severity. In this study, we quantified the effect of chronic or acute GCS treatment on the level of leukocytosis in patients with acute infectious process in a critical care unit.

Methodology & Theoretical Orientation: We conducted a retrospective cohort study of patients with an acute infection hospitalized in tertiary medical center between the years 2003-2014. Patients were classified into three categories: Chronic GCS treatment, acute GCS treatment, no GCS treatment. The primary outcome was the maximal WBC count within the first 24 hours from admission.

Findings: We identified 5468 patients with acute infection: 333 of them with chronic GCS treatment, 213 with acute GCS treatment and 4922 with no GCS treatment. The overall maximal leukocytes count was higher in GCS therapy groups: $15.4 \pm 8.3 \times 10^9/L$ for the acute GCS treatment, $14.9 \pm 7.4 \times 10^9/L$ for chronic GCS treatment and $12.9 \pm 6.4 \times 10^9/L$ for the no GCS group ($P < 0.001$).

Conclusion & Significance: In patients with acute infections chronically treated with GCS, an increase in the WBC is at average of $5 \times 10^9/L$. These data must be taken into consideration while using the level of leukocytosis as a parameter in the diagnosis of the infectious process in critical care patients.

Biography

Amit Frenkel is a Medical Doctor with training in Critical Care and Internal Medicine. He is the Medical Director of the Critical Care outreach team at the Soroka University Medical Centre, a tertiary 1100 bed teaching hospital with more than 65,000 hospitalizations and about 200,000 emergency department visits annually. His current research includes the attention to the correlation between different diseases to their laboratory results.

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