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Clinical characteristics and the prognostic significance of changes in mean platelet volume during hospitalization for community-acquired Pneumonia

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Background: Clinical characteristics and the prognostic significance of changes in mean platelet volume (MPV) during hospitalization for community-acquired pneumonia (CAP) have not been investigated.

Methods: Among 976 adults hospitalized for CAP, clinical characteristics, in-hospital outcomes (transfer to the intensive care unit, treatment with mechanical ventilation, prolonged hospital stay and death), and all-cause mortality following discharge were compared according to ΔMPV (MPV on discharge minus MPV on admission): groups A (no rising MPV, ΔMPV <0.6 fL) and B (rising MPV, ΔMPV ≥0.6 fL).

Results: Groups A and B comprised 83.8% and 16.2% of patients, respectively. Patients with a rise in MPV were more likely to be older and to present with renal dysfunction, cerebrovascular disorder and severe pneumonia than were patients with no rise in MPV. Moreover, on discharge, lower values of platelets and higher levels of leukocytes and neutrophils were observed in group B. Rising MPV strongly predicted a need for mechanical ventilation and in-hospital death (the respective relative risks: 2.62 and 6.79; 95% confidence intervals: 1.54–4.45 and 3.48–13.20). The respective 90-day, 3-year and total (median follow-up of 54 months) mortality rates were significantly higher in group B (29.1%, 43.0% and 50.0%) than in group A (7.3%, 24.2% and 32.6%), p<0.001 for all comparisons. A rise in MPV was a powerful predictor of all-cause mortality (relative risk 1.26 and 95% confidence interval 1.11–1.43).

Conclusions: Rising MPV during hospitalization for CAP is associated with more severe clinical and laboratory characteristics than no rise in MPV. A rise in MPV strongly predicts in-hospital and long-term mortality. Repeated MPV determinations throughout hospitalization for CAP may provide useful prognostic information.

Biography

Oleg Gorelik has nearly 30 years of experience in clinical medicine and research. He has published more than 50 scientific publications. Currently, Gorelik serves as the Head of the Department of Internal Medicine "F" in the Assaf Harofeh Medical Center, Zerifin, Israel. He is also a clinical senior lecturer in the Sackler Faculty of Medicine of the Tel Aviv University.

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