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LETTER TO THE EDITOR
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Elevated erythrocyte sedimentation rate and clinical outcomes

The erythrocyte sedimentation rate (ESR), also referred to as the length of sedimentation reaction (LSR) in blood, measured by Westergren or Test-1 analyzer methods, is considered as a useful complementary diagnostic tool. It is based on the red cells forming rouleaux due to high titles of acute phase reactants (APRs), such as fibrinogen or globulins, in infections, allergy, rheumatic disease, surgery, and trauma.[1–7]

It is worth noting that nonspecific factors, including age, sex, race, and the use of antibiotics, oral contraceptives, anti-inflammatories, and other medications can influence the test results; notwithstanding, ESR levels exceeding 100 mm/hour are related to some severe conditions.[1–7]

A retrospective study conducted from May 2015 to June 2021 included 441 patients aged 18 years and above, with ESR >100 mm/hour. Mean age was 72.6 years, with 52.6% being female. Diagnoses included infection (34.0%), malignancy (31.5%), renal diseases (9.8%), rheumatologic diseases (3.8%), other diagnoses (5.0%), and undiagnosed causes (15.9%).

The authors emphasized that ESR level >100 mm/hour was related to severe clinical conditions, besides the infectious and malignant diseases representing two-thirds of cases.[1] Mortality rate was 64.4%, and was even higher (81.3%) in cases of malignancy, with older mean age, elevated ferritin levels, diabetes, cardiac failure, and anemia.[1]

Key words

Diagnosis
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Outcome

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One case reported a 75-year-old man with an anterior midline abscess of the neck, with normal thyroid function, lympho-histiocytic clusters and necrosis on biopsy, and positive tuberculin test, had confirmed primary tuberculosis of thyroid, managed by classical anti-tubercular treatment.[2] Moreover, ESR was markedly elevated at 118 mm/hour. Chest and abdominal imaging did not reveal any primary foci of tuberculosis. However, culture of the pus from the thyroid abscess revealed numerous acid-fast bacilli identified by the Ziehl-Neelsen staining.[2]

The authors commented on the case of a patient, who did not have the routine BGG vaccination; the markedly elevated ESR would support the diagnosis of tuberculosis with an uncommon site.[2]

A retrospective comparative study was performed in Kazakhstan including 156 women (50% pregnant) in patients diagnosed with COVID-19 between 15 July 2020 and 20 January 2022, following group matching with propensity score for COVID-19 disease severity and age.[3]

Pregnant women displayed elevated levels of ESR, creatinine, neutrophils, platelets, lymphocytes, liver enzymes, and C-reactive protein (CRP), compared to the nonpregnant group; they also had higher levels of D-dimers, and procalcitonin compared to the nonpregnant.[3] While 16.88% of the pregnant required intensive care unit (ICU) admission, only 2.6% were hospitalized. Poorer outcomes occurred in 8.3% of pregnant women, and 1.3% of the nonpregnant ones.[3] The authors suggested further research with larger matched samples to better clear the mechanisms of a pathological association between additional factors and clinical conditions.[3]

In a retrospective cohort study of 347 patients with a median age of 63 (55–69) years and metastatic inoperable neuroendocrine tumors (NETs) treated by peptide receptor radionuclide therapy from 2005 to 2015, the main sites were small intestine (51%) and pancreas (25%).[4] One-third of the cases exhibited high derived neutrophil to lymphocyte ratio and hypoalbuminemia, and one-fifth had high CRP; the majority had grade 1 (29%) and grade 2 (66%) tumors; Ki-67 was missing in nearly 15% of cases; and 366 (66%) died within 37 months.[4]

Interestingly, ESR had a higher predictive value than CRP in a subset of cases with both determinations; differing from CRP, which is a direct marker of APR, ESR acts as an indirect marker of inflammation, with slower increased levels that remain elevated for longer periods of time.[4] The authors highlighted that the ESR has potential as a useful biomarker, pending validation.

A retrospective study included 1,429 elderly patients (≥60 years) hospitalized with COVID-19 from March 2020 to August 2022. Researchers assessed inflammatory markers (CRP, procalcitonin, and ESR) and coagulation markers (prothrombin time, INR, D-dimer, and fibrinogen).[6]

According to findings, prothrombin activity averaged 74.22%, below normal levels, indicative of bleeding risk; fibrinogen levels were elevated, was indicative of hypercoagulability; prolonged prothrombin time and elevated international normalized ratio (INR) associated with the increased mortality; elevated D-dimer levels were indicative of thromboembolic risk. CRP and ESR with marked elevations were related to poor outcomes; and the elevated procalcitonin, indicative of bacterial infections, was also related with worsening prognosis.[6] The authors commented on the need for more strategies to reduce complications and mortality in this setting.

As a matter of fact, ESR or LSR continues to be one of the most widely used laboratory tests for monitoring the course of infections, inflammatory diseases, and some malignancies.[5,7]

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ΠΕΡΙΛΗΨΗ

Αυξημένη καθίζηση ερυθρών αιμοσφαιρίων και κλινικά αποτελέσματα

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Λέξεις ευρετηρίου: Διάγνωση, Έκβαση, Ρυθμός καθίζησης ερυθροκυττάρων

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