New Era ‘‘Soluble Triggering Receptor Expressed on Myeloid Cells-I’’ as a Marker for Early Detection of Infection in Trauma Patients

By

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Abstract

Background: Previous studies suggested that triggering receptor expressed on myeloid cells-1 is upregulated in the presence of infection.

Objectives: Assess the value of soluble triggering receptor expressed on myeloid cells-I (sTREM-I) in early differentiation of systemic inflammatory response syndrome (SIRS) from infection in trauma patients.

Design: Prospective study in Zagazig University Hospitals between January and September 2010. In Emergency Surgical Departments, Intensive Care of Anesthesia and Microbiology Department.

Participants: Eighty trauma patients divided into 10 patients without evidence of SIRS (control group), then 70 patients with two or more signs of SIRS were classified into low injury severity score group and high injury severity score group.

Measurements: Plasma concentration of sTREM-I in the three groups was compared. Sensitivity, specificity and predictive values of sTREM-I were compared with the results of procalcitonin. Also, microbiological cultures for infection were examined.

Results: There was a highly significant increase in the level of sTREM-I in patients with sepsis (475.7± 97.9 for HISS group and 398.5± 103.9 for LISS group) than in the control group (102.7± 42.6). Also, there was a highly significant increase in its level in patients with sepsis (475.7± 97.9 for HISS group and 398.5± 103.9 for LISS group) in comparison to those with SIRS (189.3± 26.5 for HISS group and 177.2 ±40 for LISS group). There was a highly significant increase in procalcitonin in septic patients in comparison to SIRS group (3.9 ± 0.86 for LISS and 7.1 ± 1.4 for HISS). The sensitivity and specificity of sTREM-I were significantly higher than those of procalcitonin (94.7% and 91.8% for sTREM-I and 84.2% and 75.4% for rocalcitonin).

Conclusion: The soluble TREM-I was a sensitive and specific marker for early differentiation of infection from SIRS in trauma patients.