

Category : **Sepsis: biomarkers**

A35 - Association of serum iron levels with mortality in sepsis patients : a retrospective study using the mimic-iv database

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Introduction:

Iron is essential for oxygen transport and tissue repair[1]. Recent evidence links iron to sepsis pathogenesis and prognosis[2], but its association with sepsis mortality is unclear[3,4]. This study aimed to examine the relationship between serum iron levels and 28-day all-cause mortality in sepsis patients.

Methods:

This retrospective cohort study used the MIMIC-IV database. The study included 9645 adult sepsis patients with admission serum iron levels. Patients were divided into high and low iron groups based on a 100µg/dl cut-off. Kaplan-Meier analysis compared 28-day all-cause mortality between groups. Cox proportional hazards modeling examined the association between iron levels and 28-day all-cause mortality, adjusting for confounders.

Results:

A total of 1712 patients (17.8%) died within 28 days, with 311 deaths (23.7%) occurring in the high serum iron group. Kaplan-Meier analysis showed a statistically significant increase in 28-day all-cause mortality in the high-serum iron group. Multivariate Cox proportional hazards analysis suggested that serum iron levels associated with 28-day all-cause mortality in sepsis patients (HR 1.60), with a J-shaped curve relationship on RCS. Subgroup analysis showed that iron levels, age, sex, and vasopressor use significantly influenced mortality.

Conclusion:

Serum iron levels show a significant association with 28-day all-cause mortality in individuals with sepsis and specifically are more predictive in patients under 60 years of age, males, and patients using vasodilators. Further prospective studies are warranted to confirm these findings.

References:

[1] Weiss G, Ganz T, Goodnough L T. Blood, 2019,133(1):40-50

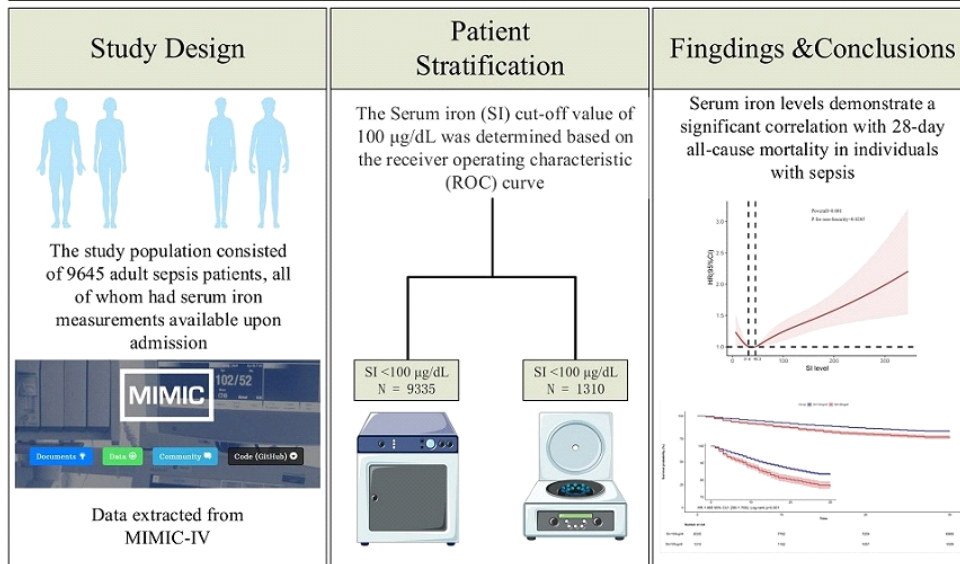
[2] Mohs R M, Paulsen J, Gustad L, et al. Intensive Care Med, 2018,44(8):1276-1283.

[3] Piagnerelli M, Vincent JL. Crit Care. 2004 Oct;8(5):306-7.

[4] Piagnerelli M, Cotton F, Herpain A, Rapotec A, Chatti R, Gulbis B, Vincent JL. Acta Clin Belg. 2013 Jan-Feb;68(1):22-7.

Image :

Association of serum iron levels with mortality in sepsis patients: a retrospective study using the MIMIC-IV database



Graphic abstract