



Serum Ferritin Level, a Prognostic Marker of Morbidity and Mortality in Pediatric Intensive Care Unit in Correlation with PRISM III Score

Nishant Tawari^{1,2} · Shobha Sharma¹ · Neil Castellino¹ · Nandkishore Kabra³

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To the Editor: We conducted this study at a tertiary pediatric intensive care unit (PICU) with an aim to find out correlation between serum ferritin levels and the severity of illness and risk of mortality as defined by PRISM 3 score [1].

As we know that serum ferritin is an acute phase reactant and elevated serum ferritin level is not unusual in a sick child (mild or severe) [2]. Hence, to establish ferritin as a predictive marker of illness severity, it needs to be correlated with established scoring system. We chose PRISM 3 score, as it provides better guidance in discriminating the severity of the patient's condition.

In this study, total 413 patients were enrolled after considering inclusion and exclusion criteria. Out of 413 patients, 10 died in PICU. Non-survivors had significant higher mean ferritin (3461.6 ng/mL; $p < 0.0001$) as compared to survivors (670.77 ng/mL). Serum ferritin ≥ 300 ng/mL was associated with a 43.35 times ($p < 0.0001$) more risk of death than patients having serum ferritin < 300 ng/mL. Many studies like the study conducted by Dermirkol et al. show that serum ferritin level is directly or indirectly related to mortality [3].

PRISM 3 score were independently associated with mortality and also had moderate correlation with serum ferritin value (Spearman's coefficient 0.63; $p < 0.0001$). Patients with high serum ferritin levels at admission had higher PRISM 3 score, longer duration of stay in hospital and morbidities. These results were independent of iron deficiency anemia. This finding is similar to the study conducted by Ghosh et al. [4].

With the help of Fisher's exact test and Spearman's coefficient we found that high serum ferritin level is associated with poor outcome in PICU patients which is not affected by presence or absence of iron deficiency anemia and hence, it can be used as a predictive marker of morbidity and mortality along with current prognostic scores.

Declarations

Conflict of Interest None.

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✉ Nishant Tawari
drnstawari@gmail.com

¹ Department of Pediatrics, Surya Children's Medicare Pvt. Ltd, Mumbai, India

² Flat 401, Keshav Kala Apartment, Diksha Bhoomi Road, Rahate Colony, Nagpur, Maharashtra 440020, India

³ Department of Pediatrics- Neonatology, Surya Children's Medicare Pvt. Ltd, Mumbai, India