

Vitamin D Deficiency in Critically Ill

Sir,

We read with interest the recently published research article titled, “Correlation of Serum Vitamin D Level with Mortality in Patients with Sepsis” by Vipul *et al.*^[1] The authors noted a high prevalence (74%) of Vitamin D deficiency (VDD) in critically ill adults ($n = 88$) with sepsis and there was an inverse correlation between VDD and duration of hospital stay. The authors noted no difference in the prevalence of VDD among survivors and deceased, but deceased patients had significantly lower levels of Vitamin D.

This paper is an interesting read, but we would like to make few comments. First, authors mentioned that they studied the correlation of various sepsis biomarkers with Vitamin D levels. However, they did not mention anything about biomarkers in methodology and results sections. Which biomarkers? What was the correlation? Second, readers would expect to read about the method used for Vitamin D estimation and cutoff values used to define VDD. Third, the authors had not stated how sample size was calculated. Fourth, it was wrongly mentioned that, out of 88 cases, 15 (18.2%) were sufficient, 7 (8%) were insufficient, and 52 (73.9%) were deficient in Vitamin D. In fact, out of 88 cases, 16 (18.2%) had sufficient, 7 (7.9%) had insufficient, and 65 (73.9%) had deficient levels of Vitamin D. The authors had not added patients who died to these figures (1 sufficient and 13 deficient in Vitamin D).

Fifth, in Tables 7 and 8 in their paper,^[1] the authors mistakenly mentioned the total number of patients to be 89 in the place of 88; Table 8 mentioned the number of patients died as 18 instead of 14. Sixth, it has been noted that patients having normal Vitamin D levels had higher APACHE II and SAPS II scores than patients with insufficient and deficient Vitamin D levels ($P = 0.044$ and 0.925 , respectively). This is in contrast to various studies which demonstrated that VDD is associated with greater severity of illness.^[2] Further, most of the points mentioned in conclusion sections were not justified on the basis of this study.

Findings of this study added significantly to the area of VDD among critically ill adults and its relationship with clinical outcomes.^[1] As far as critically ill children are concerned, the literature in this field is building up. Ponnarmeni *et al.*^[3] demonstrated that 50.81% of critically ill children with sepsis ($n = 124$) had VDD (level <20 ng/ml) and there was statistically nonsignificant trend toward the increased occurrence of septic shock and multiple organ dysfunction syndrome, requirement for vasoactive drugs and mechanical ventilation, and development of health-care-associated infection in cases with VDD. Moving a step forward, Amrein *et al.*^[4] in VITdAL-ICU trial demonstrated that administration of high dose of Vitamin D3 (540,000 IU once followed by monthly 90,000 IU for 5 months) in critically ill

patients ($n = 492$) did not reduced the duration of hospital stay, hospital mortality, or 6-month mortality.

Peer-reviewed original research articles play crucial roles in disseminating knowledge and research findings to wide readership and generate research questions for future research.^[5] Paper by Vipul *et al.*^[1] highlights the need for integrating all data and statistical interpretation while writing research papers and strict adherence to standard format.^[5]

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Conflicts of interest

There are no conflicts of interest.

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