Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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An outcome study in patients with COVID-19 admitted to ICU: HAS a miss?

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Dear Editor,— It could have never been more explicable than in the times of an ongoing inexplicable pandemic to comprehend well the factors associated with the outcomes of those requiring intensive care unit (ICU) admission. Appropriate to the context, the recent Kukoč et al. study focuses on the outcome predictive links of the clinical and on-admission laboratory parameters in 692 critically ill coronavirus disease 2019 (COVID-19) patients.[1] Evaluating the risk-factors predisposing to mortality in a retrospective research approach, the authors overlook three readily available on-admission parameters: Haemoglobin, Albumin and Sugar (HAS), each having its' own importance in purview of the global nutritional-to-metabolic health-related challenges.

Zuin et al. identified anaemia as a major comorbidity in COVID-19 with a pooled prevalence of 25.6% emanating from their meta-analysis including 9623 patients.[2] Considering Kukoč et al. employed mortality as a primary study end-point, it is worthwhile to elucidate that the Zuin et al. meta-analysis revealed a significant association of anaemia with an accentuated mortality risk (adjusted odds ratio (aOR): 1.69, 95% confidence interval (CI): 1.28–2.24, p value<0.001, with low heterogeneity I^2 =0%).[1,2]

While Kukoč et al. understandably portray interest in the markers of inflammation in their COVID-19 study, the absence of an account of the albumin levels is difficult to comprehend, particularly when hypoalbuminemia presents both nutritional and inflammatory prognostic potential.[1,3,4] Indeed, a systematic review and meta-analysis by Soetedjo et al. across 19 studies and 6200 patients outlined an increased mortality in background of hypoalbuminemia (OR: 6.26, 95% CI: 3.26–12.04, p value<0.001). A subgroup-analysis delineated 0.59 (95% CI: 0.46–0.70) sensitivity and 0.82 (95% CI: 0.72–0.88) specificity for hypoalbuminemia guided mortality prediction.[4] This assumes an even enhanced importance when hypoalbuminemia has been documented in as high as 40–60% of COVID-19 patients.[5]

At the same time, diabetic status categorization alone in Kukoč et al. study is far from comprehensive when on-admission hyperglycaemia has been linked to severe COVID-19 regardless of preexisting diabetes mellitus.[1,6] Lazarus et al. highlight 33% increased risk of a severe disease for every rise of 1 mmol/L in the on-admission fasting blood glucose (FBG, across a range between 4.5 mmol/L-14.1 mmol/L), in their meta-analysis including 35 studies with a total of 14,502 patients.[7] Moreover, the research group deciphered a moderate quality evidence for the FBG association with mortality subsequent to the modified Grading of Recommendations Assessment, Development, and Evaluation (GRADE) framework assessment.[7]

Needless to say, the inclusion of HAS in the Kukoč et al. analysis could have yielded potentially interesting results,[1] which would have served as additional prognostic representatives for their patients requiring ICU admission while ailing from COVID-19.

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Conflicts of Interest

None.

We do not have any conflict of interest, any commercial or financial interest in this material & agree to abide by the rules of your journal regarding publication of this article.

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