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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A commentary on ''C-Reactive protein and SOFA scale: A simple score as early predictor of critical care requirement in patients with COVID-19 pneumonia in Spain'' (Revista Española de Anestesiología y Reanimación 68 (2021) 513—522)☆

Un comentario sobre «Proteína C reactiva y escala SOFA: una simple escala como factor predictivo temprano de la necesidad de cuidados críticos en los pacientes con neumonía causada por COVID-19 en España» (Revista Española de Anestesiología y Reanimación 68 (2021) 513—522)

To the Editor:

We read with great interest the article published by Vaquero et al.[1] titled ''C-Reactive protein and SOFA scale: A simple score as early predictor of critical care requirement in patients with COVID-19 pneumonia in Spain'', where the authors identify a SOFA score of ≥2 combined with CRP ≥ 9.1 mg/mL on admission as potential predictors of the need for critical care in patients with pneumonia caused by COVID-19. We thank the authors for such valuable evidence; however, we would like to add a few comments.

In some patients, severe COVID-19 respiratory infection may manifest as a rapidly developing acute respiratory distress syndrome with other serious complications that may eventually be followed by multiple organ failure and death. Studies in patients with COVID-19 have shown that a low lymphocyte count, particularly CD8+ cells, and a high leukocyte count together with increased levels of lactate dehydrogenase (LDH), creatine kinase (CK), C-reactive protein (CRP), D-dimer, and high levels of proinflammatory cytokines are associated with more severe inflammation and extensive lung damage, and with higher intensive care unit (ICU) admission and mortality rates.[2]

Smilowitz et al.[3] found that an initial CRP value above the median level (CRP ≥ 10.8 mg/dL) was associated with critical illness (47.6% vs. 25.9%; adjusted odds ratio [aOR] 2.83, 95% CI 2.37–3.37) and in-hospital mortality (32.2% vs 17.8%; ORa 2.59, 95% CI 2.11–3.18) compared to an initial CRP value below the median level (CRP < 10.8 mg/dL). They also correlated CRP values with D-dimer values, and concluded that patients with concomitant elevation of CRP and D-dimer (>384 ng/mL) are at greater risk of in-hospital adverse outcomes. Although they also correlate high CRP values with critical illness and mortality, they establish a higher cut-off point than that suggest by Vaquero et al., who do not include D-dimer as a marker of severity. This is important, as other studies have shown the usefulness of D-dimer determination.[1]

Lalueza et al.[4] found the NEWS scale (area under the curve [AUC]): 0.75; 95% CI: 0.69–0.8, p < 0.0001) to be the most accurate predictor of respiratory failure in patients with COVID-19 at admission, and the difference between this scale and the SOFA scale approached statistical significance (AUC: 0.73; 95% CI: 0.67–0.79; <0.0001). Regarding mortality, the SOFA score (AUC: 0.77; 95% CI: 0.72–0.83; p < 0.0001) was somewhat more accurate than the other scores, and in this regard the NEWS scale approached statistical significance (AUC: 0.72; 95% CI: 0.66–0.78; <0.0001). This indicates that the NEWS scale is the best predictor of respiratory failure, since it obtained the best AUC in this study, while the SOFA scale is the best instrument for predicting mortality. The foregoing reconfirms the usefulness of sepsis scales in the initial clinical evaluation of patients with COVID-19. It also shows the need for studies evaluating the NEWS scale in conjunction with inflammatory markers, because findings suggest that it may more effective than SOFA at predicting the need for early critical care in patients with pneumonia caused by COVID-19.

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In addition, Vaquero et al. excluded patients older than 76 years from the study, when it is precisely these patients that most require critical care due to their increased risk of serious illness and mortality. It would have been important to include this population in the analysis, because the results obtained could have helped develop strategies to improve the poor prognosis of elderly patients with COVID-19.

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