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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Letter to the Editor

Nutritional management and clinical outcome of critically ill patients with COVID-19: A retrospective study in a tertiary hospital

Keywords:
COVID-19
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Vit D
Viral load

Dear Editor,

We review with interest and congratulate the study by Velasco et al. [1] for its relevance. It is about the nutritional management and clinical outcome of critically ill patients with coronavirus disease 2019 (COVID-2019). The study sought to describe the characteristics of patients treated at a tertiary hospital in Madrid.

Our attention was drawn to the fact that in their methods, Velasco et al. [1] did not specify the type of test performed for the diagnosis of COVID-19. The detection of viral nucleic acid from the reverse transcription polymerase chain reaction (RT-PCR), is considered the gold standard for the diagnosis of COVID-19. This technique is also used to obtain an indirect viral load value, which may be associated with clinical outcomes in hospitalized patients [2]. Furthermore, the quantification of viral load can be correlated with infectivity, disease phenotype, morbidity and mortality [2]. Thus, the inclusion of this information can help in the patient's prognosis and in the conduct to be performed.

Regarding the laboratory variables collected, Velasco et al. [1] mention that the d-dimer levels presented one of the highest values during the first week of hospitalization in the intensive care unit (ICU). Evidence suggests that critically ill COVID-19 patients who have high viral loads may also have indicators of coagulation activation (D-dimer) and elevated pro-inflammatory cytokines [3,4]. Thus, the viral load associated with d-dimer levels can be another item used to identify the severity of these individuals [3,4].

In the structured form used by the authors, we noticed the absence of a relevant item, the investigation of nutritional supplementation prior to contamination, since this can increase the defense of the immune system, and interfere with the severity of the disease [5]. Regarding vitamin D (vit D), this is mentioned in Table 1 and brings the information that 67 patients had vitamin D deficiency, and among these, 21 died. Vit D deficiency is prevalent in COVID-19 patients and has been associated with an increase in ICU length of stay [6]. Thus, its monitoring and classification becomes important, which can be at three levels: insufficient, deficient and severe, significantly interfering with the patient's health status [6].

We confirm that the present study brings an important scientific and clinical contribution to the current moment. In times of a pandemic, it is essential to investigate the nutritional treatment

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Table 1
Influence of baseline characteristics, nutritional treatment and analytical data on mortality.

Variable	Overall	Survived	Died	P value
Number patients	176	112	64	
Age, (years) mean ± SD	60.1 ± 13.5	57.3 ± 14.4	66.1 ± 10.2	<0.001*
Male, n (%)	128 (72.7)	78 (69.6)	50 (78.1)	0.224
BMI, mean ± SD	29.9 ± 5.4	29.9 ± 5.3	29.8 ± 5.6	0.613
Severityrowhead				
PaFi, median (IQR)	90 (42)	89.5 (43.5)	90 (40)	0.874
Charlson, median (IQR)	1 (2)	1 (2)	2 (3)	0.001*
APACHE, median (IQR)	15 (7)	14 (6)	16 (7.5)	0.023*
SOFA at admission, median (IQR)	5 (3)	4 (3)	6 (4)	0.016*
Comorbiditiesrowhead				
HTA, n (%)	85 (49.1)	45 (40.9)	40 (63.5)	0.004*
Obesity grade I, n (%)	40 (23.4)	31 (28.2)	9 (14.8)	0.047*
Diabetes mellitus, n (%)	35 (20.3)	17 (15.6)	18 (28.6)	0.042*
Dyslipidaemia, n (%)	71 (41.4)	43 (39.1)	29 (45.3)	0.422
COPD, n (%)	29 (17.1)	19 (17.6)	10 (16.1)	0.807
Oncological disease, n (%)	16 (9.4)	10 (9.2)	6 (9.7)	0.914
Inmunological disease, n (%)	6 (3.5)	2 (1.8)	4 (6.5)	0.115
Nutritional medical therapyrowhead				
Time to start (hours), median (IQR)	48 (48)	48 (24)	48 (48)	0.268
At day 4throwhead				
% calories administered of estimated, mean ± SD	81.5 ± 34.4	79.9 ± 34.1	84.1 ± 34.9	0.244
% protein administered of estimated, mean ± SD	72.7 ± 30.2	71.3 ± 30.6	75 ± 29.6	0.435
At day 7throwhead				
% calories administered of estimated, mean ± SD	89.7 ± 32.8	88.5 ± 34.3	91.8 ± 30.3	0.326
% protein administered of estimated, mean ± SD	81.4 ± 31.6	80.1 ± 33.4	83.5 ± 28.5	0.553
Laboratory datarowhead				
D dimer, median (IQR)	3173 (7752)	2552 (5102)	5957 (9124)	<0.001*
Fibrinogen, median (IQR)	845 (202)	851 (212)	832 (182)	0.530
CRP, median (IQR)	23.3 (16.1)	23.6 (15.6)	23 (17.6)	0.564
Ferritin, median (IQR)	1387 (1933)	1409 (1997)	1347 (1914)	0.667
Mg, median (IQR)	2 (0.3)	2 (0.3)	1.9 (0.45)	0.544
P, median (IQR)	2.1 (1)	2.1 (1.1)	2 (1)	0.741
Triglyceride, median (IQR)	309 (250)	304 (234)	325 (264)	0.590
Hypertriglyceridemia, n (%)	119 (83.8)	74 (78.7)	45 (93.8)	0.022*
Hyperglycaemia, n (%)	137 (77.8)	77 (69)	60 (94)	<0.001*
Folate deficiency, n (%)	30 (27.3)	18 (23.4)	12 (36.4)	0.161
Vit D deficiency, n (%)	67 (72)	46 (67.6)	21 (84)	0.119

*p < 0.05, HTA: hypertension, COPD: chronic obstructive pulmonary disease.

used in critically ill patients with COVID-19, as this evidence contributes to the decision-making of the team involved in the treatment.

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MERAS idealized the letter, writing of the manuscript. APSS, VONS and WMAB writing and revision of the manuscript. All authors read and approved the final version the manuscript.

Conflicts of interest

The authors have no conflicts of interest to report.

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