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## Letter to the Editor

**A score combining early detection of cytokines accurately predicts COVID-19 severity and intensive care unit transfer: If early cytokine score results are available and to compare with existing severity scores and CT scan observations**



Nagant et al. recently reported combining the levels of cytokines detected in the early phase of coronavirus disease 2019 (COVID-19) to provide a score that predicts the severity of the disease and the probability of transfer to the intensive care unit (Nagant et al., 2020).

While cytokines are easily evaluable in serum and have been proposed as potential immunological biomarkers for predicting disease progression (Lucas et al., 2020; Zhu et al., 2020), this evaluation remains dependent on the delay between hospital admission and the time at which the serum determinations are made. This delay is a critical factor for a score combining only the levels of cytokines detected to predict disease progression. It is important to know how long after admission the cytokine results were obtained when calculating the prediction score in COVID-19 patients. This important information was not reported in this interesting work by Nagant et al. (2020).

The cytokine score results could be correlated with more easily and quickly obtainable patient evaluations, such as the results of clinical examination (respiratory rate) or blood gas evaluation with cutaneous oxygen saturation follow-up, oxygen supplementation, or arterial blood gas examinations with determination of PaO<sub>2</sub> and the PaO<sub>2</sub>/FiO<sub>2</sub> ratio. Different existing scores using this readily available information, like the Quick COVID-19 Severity Index (qCSI) and the ROX score, have been developed to assess the probability of respiratory distress, which remains one of the major causes of intensive care unit admission for COVID-19 patients, as well as to identify patients in this population at risk of severe respiratory complications (Haimovich et al., 2020; Roca et al., 2019). As reported by Nagant et al., the World Health Organization classification effectively refers to these well-known and easily available data collected in emergency rooms to classify COVID-19 patients.

It would also be interesting to compare the results of the calculated cytokine score with chest computed tomography scan results, which also provide information on the severity of the disease, particularly the extent of the lung area showing typical pulmonary infiltrates suggesting COVID-19 lesions (Li et al., 2020; Marini and Gattinoni, 2020).

So, although calculation of this cytokine score could make an effective contribution to confirming the severity of the COVID-19 illness, this score needs to be obtained quickly after emergency admission. Otherwise other well-described scores or easy-to-perform examinations can rapidly give a significant indication

regarding the severity of the COVID-19 illness and the probability of intensive care unit admission, in most cases for respiratory support.

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#### Ethical approval

None.

#### Conflict of interest

The authors declare that they have no conflict of interest.

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