Letter to Editor

Simple classification of COVID-19 patients

Dear editor,

The severe acute respiratory syndrome coronavirus 2 causes the coronavirus disease (COVID-19), which was detected in Wuhan, China, in December 2019, and subsequently spread to other continents and countries, to affect 28.0 million people and cause 908,500 deaths (until 10.09.2020).[1] The case-fatality rate of COVID-19 ranges from 1.6% to 16.0%, although the average rate is 3.5% worldwide.[2] The mortality rate in patients younger than 19 years is 0%, but varies from 3% to 11% and 10% to 27% among individuals in the age range of 65–84 and >85 years.[3] The common clinical symptoms of COVID-19 are cough, diarrhea, fever, headache, loss of smell or taste, myalgia or fatigue, pharyngitis, and dyspnea.[4] The spectrum of disease severity in 80–90% of COVID-19 patients includes asymptomatic individuals and patients with signs of lower or upper respiratory tract infections, lobar or multilobar viral pneumonia, acute respiratory distress syndrome, and cytokine storm. Besides these, clinical findings of secondary infections, cardiomyopathy, and thrombosis may be observed.[4]

The research that has been reported in the literature compares patients as follows: (a) nonsevere/ severe; (b) non-intensive care unit (ICU)/ICU; (c) improvement/progression; (d) general/refractory; (e) common type/severe; (f) noninvasive mechanical ventilation (IMV)/ IMV; (g) good/poor outcomes; and (h) survivors/non-survivors.

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Although classifications are recommended based on radiological imaging, also clinical classification is urgently needed.[5] Therefore, a uniform stratification of COVID-19 patients is necessary to standardize the future research studies and to enable meta-analyses that can more appropriately evaluate the data.

With this objective, the following classification (Table-1) of COVID-19 patients seems reasonable and, in routine clinical practice, the patients can be switched between these classes.

Table 1 Simple clinical classification

Grade	Type	Clinical findings
0	asymptomatic patients	individuals without clinical signs
I	mild	outpatients and patients with mild clinical symptoms or lower or upper respiratory tract infections.
II	moderate	patients requiring hospitalization, with lobar or multilobar pneumonia with/without the need for supplemental oxygen, or refractory to initial treatment.
III	severe	patients who need ICU treatment, noninvasive or invasive mechanical ventilatory support, or with acute respiratory distress syndrome and/or non-pulmonary involvement.
IV	very severe or critical	patients who need immunomodulatory therapy or with multiorgan failure and/or cytokine storm.
ICU, intensive care unit		

In conclusion, this simple classification can facilitate an appropriate initial categorization of COVID-19 patients that can be improved further based on various findings that emerge over time. However, a clustering model through clinical cases correlating with the prognosis would be needed for a classification to be reliable.

Ethics committee approval

According to the rule of our institution, there is no requirement of ethics committee approval for editorial letter.

Informed consent

Not required.

Conflicts of interest

The author has stated explicitly that there are no conflicts of interest in connection with this article.

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Authorship and contributorship

A.G. Concept and design, data collection, interpretation of data, manuscript preparation, and drafting of the manuscript.

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References

1. Reported Cases and Deaths by Country, Territory, or Conveyance. 2020.

2. WHO Coronavirus Disease (COVID-19) Dashboard.

3. CDC COVID-19 Response Team. Severe outcomes among patients with coronavirus disease 2019 (COVID-19) - United States, February 12-March 16, 2020. *MMWR Morb Mortal Wkly Rep.* 2020;69(12):343–346.

4. Auwaerter, Paul G. Coronavirus COVID-19 (SARS-CoV-2). Johns Hopkins ABX Guide, The Johns Hopkins University, 2020. Johns Hopkins Guide. 2020.

5. Gezer NS, Ergan B, Barış MM, et al. COVID-19 S: A new proposal for diagnosis and structured reporting of COVID-19 on computed tomography imaging. *Diagn Interv Radiol.* 2020.