Letter to the Editor

Response to letter to the editor about the comparison of CT findings between outpatient and hospitalized COVID-19 patients

Dear Editor,

In response to the letter entitled "Can chest computed tomography findings be compared between outpatient and hospitalized COVID-19 patients?" [1] first, we would like to thank Cabrelle et al. for their interest in our study [2] and for expressing their concerns. We also thank the editor for allowing us to respond and provide more details about our study. In the mentioned letter to the editor [1], some potential concerns were noted regarding the factors that may affect the results, including the impact of the time interval between the incidence of symptoms and medical imaging and the possibility of the presence of background lung disease and comorbidities.

First of all, we must declare that our study [2] was conducted at the beginning of the outbreak of the disease in our country when not much information was available about this disease and there was still no opportunity to design a prospective study. Concerns about this deadly disease made us look for a method to estimate the prognosis of patients as soon as possible, so in this situation, we had to perform a retrospective study. Despite the disturbing conditions of that time and our compulsion to conduct a retrospective study, we tried not to neglect the distorting factors of the study but attempted to find and exclude them from the study in any appropriate way, which might not be perfect.

The first matter that the authors [1] pointed was the lack of information about the time interval between positive reverse transcription-polymerase chain reaction (RT-PCR) and CT scan or between symptom onset and CT. We should have declared that the time interval between RT-PCR and CT scan was less than a week for all patients in both groups. Some previous studies reported the temporal changes of CT findings in the course of COVID-19 disease [3,4]. Therefore, we were very careful that the time interval between the positive test result and the imaging of any patient was not more than one week. Due to the constraints imposed by the retrospective nature of this study, we could not gather the time interval between the inception of symptoms and the RT-PCR test for all patients, especially the out-patients group. However, this study [2] was performed since the first official declaration of the pandemic in our country when the people were announced to refer for RT-PCR test after the incidence of very first sign and symptoms; therefore, it was assumed that there was not a long time (atmost<1week) between the incidence of symptoms and RT-PCR test.

The second concern [1] was about the possibility of presenting underlying lung disease which might worsen the lung engagement and intensify CT findings. We agree that the underlying lung disease and other underlying diseases can affect the severity of the disease and CT findings, as reported in previous studies [5,6]. Therefore, it was tried to find and exclude the patients with a history of lung disease with any possible methods. All the patient information was gathered from the picture archiving and communication system (PACS). The patient's histories were assessed if there was any record of previous lung disease; they were excluded from the study. During reassessment of the images, if any differential diagnosis between COVID-19 and other chronic lung diseases happened, they were excluded from the study. The included patients were also assessed in terms of any previously recorded lung imaging due to respiratory problems; if there were any previous chest imaging, they were excluded from the study. As mentioned in the study's exclusion criteria, we excluded the severe cases who were diseased. Most of them had underlying lung disease and other comorbidities. Therefore, the probability of including a patient with chronic lung disease or other severe comorbidities was low.

The third issue raised in letter [1] was about the presence of background diseases. It should be highlighted that most of the patients with comorbidities were excluded from the study by excluding severe cases in the first imaging. Although it was observed that comorbidities such as diabetes and high blood pressure are more associated with the severity of the COVID-19, we know that many other details should be taken into account and checked. Suppose diabetes wanted to be assessed as a risk factor in both groups (hospitalized and outpatients). In that case, the diabetes type, antidiabetic drugs, and the presence of other diabetes-induced diseases such as kidney diseases or diabetic infections should also be evaluated [7,8], which was impossible. The same subject is also true about hypertension or other comorbidities. Therefore, as the study was retrospective

and we could not gather the details of comorbidities, their type, or the medication that patients had been used to match both groups, it was decided to assess the patients regardless of other comorbidities.

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