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Letter to the Editor



Concerns regarding result analysis and the corresponding risk of pulmonary embolism severity and in-hospital mortality

Dear Editor,

I read with great interest the article by Miró et al., [1] as the paper discusses an important aspect of clinical medicine which is of great importance in the current coronavirus disease 2019 (COVID-19) era. It is questionable as to why the authors used simplified Pulmonary Embolism Severity Index (sPESI) scores while carrying out the risk analysis of both COVID-19 and non-COVID-19 patients, irrespective of the severity of the disease, for which the patients were previously diagnosed using a computed tomographic pulmonary angiogram (CTPA). The modified sPESI score (m-sPESI) proposed by As et al. could have proven to be of a more prognostic value for the COVID-19 patients and the regular sPESI score could have been used for the non-COVID-19 patients [2].

Moreover, the study also had a higher proportion of elderly patients, with a median age of 67 years, and studies indicate that age is significantly associated with a fatal Pulmonary Embolism (PE) [3]. Furthermore, the study had 19.9% of non-COVID-19 patients having been diagnosed with a previous deep vein thrombosis (DVT), compared to only 6.4% of COVID-19 patients having been diagnosed with a previous DVT. Studies have indicated that there is a high risk of fatality from recurrent PE or DVT, and this could have potentially affected the study results [4].

Another concerning aspect with respect to the list of risk factors for PE that was created for patients was that there is no classification indicating if patients had multiple risk factors, as multiple risk factors in a single patient could have led to there being a more possible chance for fatality from PE [5]. The absence of this classification fails to indicate the veracity of the findings as unfortunately if multiple COVID-19 patients were suffering from multiple risk factors, this could have been a possible reason for the higher mortality of COVID-19 patients as compared to non-COVID-19 patients.

According to the original sPESI article by Jiménez et al., patients with an sPESI score of 0 were considered low risk and those with 1 or more were at high risk for PE [6]. Considering these facts, from the patient risk scoring, an analysis of the total percentages of risk scorings could have been done, but instead a stratified form of risk analysis was provided. Though both modalities are independently useful, a comparison of the two could have been more enlightening.

Lastly, the main question is as to how the authors came to the end result. According to the article, there were 85 deaths, of which 56 were those of COVID-19 patients. In total, there were 747 subjects diagnosed

with COVID-19 (439 were clinically diagnosed and 308 were PCR-confirmed). Hence, the total percentage of COVID-19 deaths related to PE would have been 7.49%, but the authors reported 12.8%, and it is not clear how they reached this conclusion. Again, in the case of non-COVID-19 deaths, there were 29 deaths among the 549 non-COVID-19 subjects, and this would have resulted in 5.28% of deaths, which the authors rounded off to 5.3%, which can be acceptable but the percentage provided for COVID-19 deaths related to PE cannot be validated. This discontinuity in reporting, with different results for the same formula for relative deaths is concerning. It would prove to be beneficial if the authors could correspondingly provide valid reasoning as to how they reached the 12.8% instead of the 7.49% fatality result.

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