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POSTER COMPETITIONS

Respiratory Rate and Systolic Blood Pressure on Hospital Admission as Prognostic Factor in COVID-19: A Systematic Review and Meta-Analysis

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Introduction

From December 2019 to September 10, 2021, More than 223 million people have been infected with COVID-19, resulting in more than 223 million 4.6 million deaths. The mortality rate is high in certain groups and particularly high in the absence of proven effective standard management measures. The use of a simple and accurate predictor for COVID-19 prognosis will be beneficial for the clinical management of patients. Therefore, we perform this systematic review and meta-analysis to reveal the association of specific clinical characteristics, that is respiratory rate (RR) and systolic blood pressure (SBP) on the first admission, with the COVID-19 severity.

Objective

To reveal the association of RR and SBP on first admission, with the COVID-19 severity.

Methods

We performed a systematic search in PubMed, ScienceDirect, and ProQuest for studies reporting clinical characteristics of mild and severe COVID-19 case. Included studies were evaluated for risk of bias based on Newcastle Ottawa Score. A meta-analysis was conducted using the data extracted from each study. Review Manager (RevMan) 5.4 was utilized to compute the summary of mean difference (MD) and 95% confidence intervals (CI) for the outcome.

Results:

We included 6 studies involving 1,265 patients (severe

cases=348 and mild cases=917), conducted in China, with several different outcomes. We found that increased RR (MD: 1.59; 95% CI: 0.31, 2.88; p<0.00001; I2= 86%) and increased SBP (MD: 5.27; 95% CI: 1.14, 9.40; p= 0.23; I2= 28%) and composite of both (MD: 2.09; 95% CI: 0.81, 3.38; p= 0.10; I2= 64.0%) were associated with severe COVID-19.

Conclusion

RR and SBP associated with the severity of COVID-19. Therefore, this clinical findings could be a prognostic factor of severe COVID-19 case among all the clinical manifestation. Longitudinal studies may reveal more long-term impacts of SARS-CoV-2 infection along the association of it's clinical manifestation.

Keywords

COVID-19; Severity; Respiratory rate; Systolic blood pressure