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Abstract

**Introduction** Hospitalised patients with coronavirus disease 2019 (COVID-19) as a result of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection have a high mortality rate and frequently require non-invasive respiratory support or invasive mechanical ventilation. Optimising and standardising management through evidence-based guidelines may improve quality of care and therefore patient outcomes.

**Methods** A task force from the European Respiratory Society, and endorsed by the Chinese Thoracic Society, identified priority interventions (pharmacological and non-pharmacological) for inclusion in this “living guideline” using the PICO (Population, Intervention, Comparator, Outcomes) format. The GRADE (Grading of Recommendations, Assessment, Development and Evaluations) approach was used for assessing the quality of evidence and strength of recommendations. Systematic literature reviews were performed, and data pooled by meta-analysis where possible. Evidence tables were presented and evidence-to-decision frameworks were used to formulate recommendations.
Results Based on the available evidence at the time of guideline update (14 February 2022) the panel makes a strong recommendation in favour of the use of systemic corticosteroids in patients requiring supplementary oxygen or ventilatory support, and of interleukin-6 receptor antagonist monoclonal antibodies or baricitinib for patients requiring supplementary oxygen and for the use of anticoagulation in hospitalised patients. The panel makes a conditional recommendation for continuous positive airway pressure in patients with acute hypoxaemic respiratory failure and for combination treatment with casirivimab and imdevimab in patients who have no detectable SARS-CoV-2 spike antibodies (seronegative) and a susceptible variant. No recommendation was made for remdesivir in patients requiring supplemental oxygen. The panel recommended against multiple therapeutics, including hydroxychloroquine, azithromycin, convalescent plasma, lopinavir-ritonavir and colchicine. Further recommendations for research are made.

Conclusion Several interventions reduce mortality and improve clinical outcomes in patients with severe COVID-19 infection. These guidelines will be regularly updated as further evidence becomes available.