



A SYSTEMATIC LITERATURE REVIEW OF THE INDICATIONS FOR THE USE OF EXTRACORPOREAL MEMBRANE OXYGENATION IN COVID-19 TREATMENT

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INTRODUCTION / OBJECTIVES

Currently, the use of extracorporeal membrane oxygenation (ECMO) is an important therapeutic strategy for patients affected by coronavirus disease 2019 (COVID-19) with acute respiratory distress syndrome (ARDS) or with refractory cardiocirculatory failure, acting as rescue therapy when there is no response to conventional treatments. This study aims to review the literature about the indications for the use of ECMO in COVID-19 patients.



Scientific databases used to perform the literature review about the indications for the use of ECMO in COVID-19 patients.

To perform this review, studies involving patients with COVID-19 published in the PubMed/MEDLINE, LILACS, and SCIELO scientific databases between December 2019 and September 2021 were searched, using the terms "Extracorporeal Membrane Oxygenation", "COVID-19", and "COVID-19 Treatment" individually and combined.

RESULTS

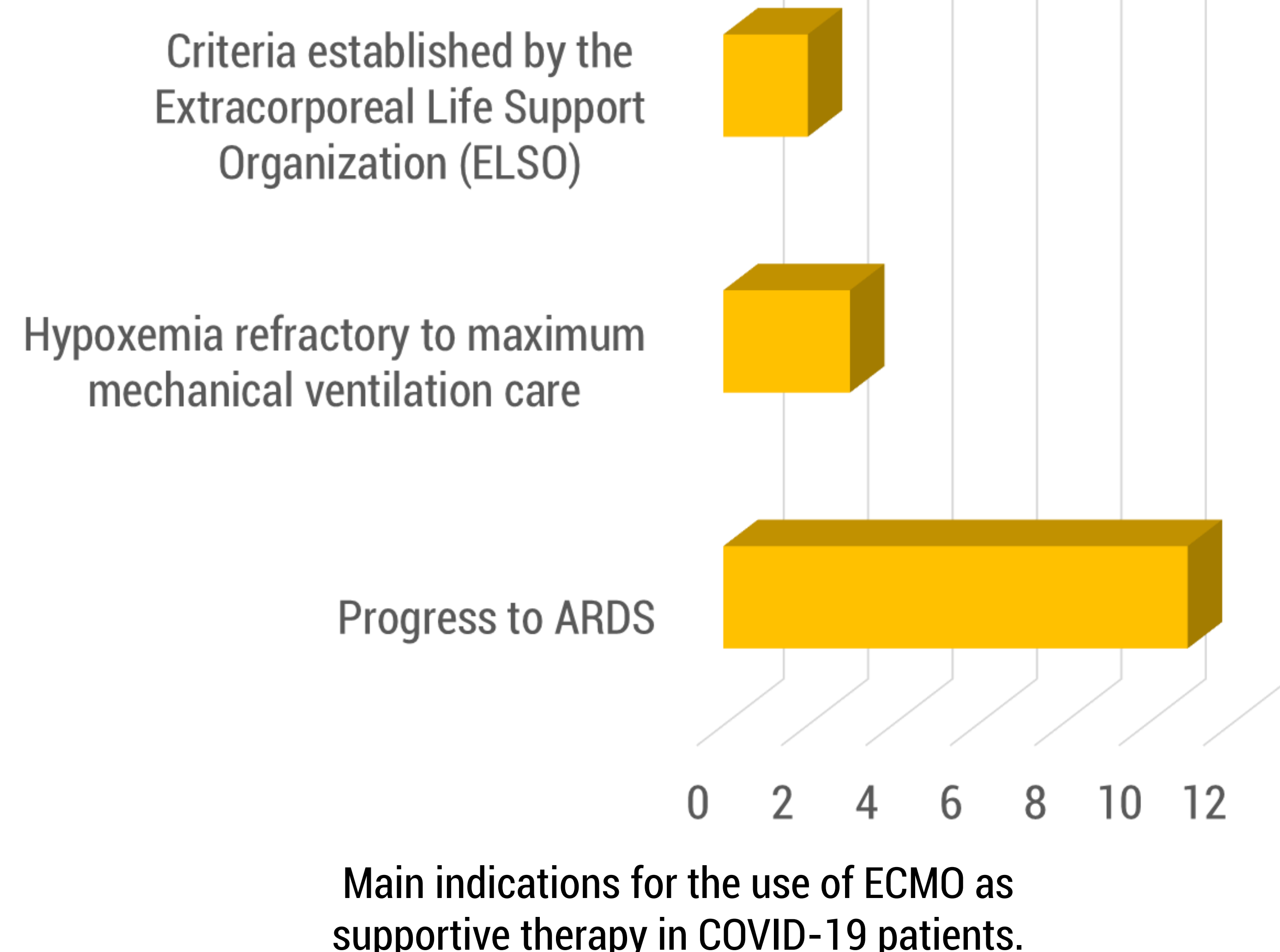
Individual searches of each term resulted in a total of 152,106 scientific publications in the databases, mostly on PubMed/MEDLINE (91.4%). Using the three combined terms "Extracorporeal Membrane Oxygenation AND COVID-19 AND COVID-19 Treatment" the number of publications dropped to 57 (0.04%).

Duplicate publications were removed, and inclusion/exclusion criteria were applied, mainly in relation to the title and abstract of each publication. After the final analysis step based on full texts, only 11 publications were included because they covered the objective of this review and addressed the clinical indications for the use of ECMO in COVID-19 patients.

DISCUSSION / CONCLUSIONS

After several steps within the literature review process, the results highlight the limited number of research that addressed the association of ECMO as supportive therapy in the treatment of COVID-19. The overall analysis of the 11 resulting publications suggests the progress to ARDS in patients with COVID-19 as the main indication for the use of ECMO as supportive therapy (100% of publications), followed by hypoxemia refractory to maximum mechanical ventilation care as the indication for ECMO implementation in COVID-19 patients (27%). Finally, 18% of the publications reinforce the importance of following the criteria established by the Extracorporeal Life Support Organization (ELSO) for cases related to ECMO and COVID-19. It is evident that further studies are needed to elucidate the most appropriate clinical conditions that justify the implementation of ECMO in patients affected by COVID-19, especially those in a critical state, in order to increase the chances of better results.

MATERIALS AND METHODS



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