



ECMO for ARDS due to COVID-19

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As the COVID-19 pandemic began, early reports from China suggested that mortality with the use of extracorporeal membrane oxygenation (ECMO) was unacceptably high. It was unclear whether this was because of the pathophysiology of the disease or because it was being used in desperation by overwhelmed healthcare systems. As COVID-19 swept across Europe and North America, published data from experienced ECMO centres suggested that outcomes following ECMO for COVID-19 were comparable to non-COVID-related lung disease. This may have led to an increase in the use of ECMO for refractory COVID-19 acute respiratory distress syndrome (ARDS).

As the pandemic has continued, a number of important randomized clinical trials demonstrated the effectiveness of specific treatments which appear to alter the natural history of COVID-19 in some patient populations, such as the use of dexamethasone in oxygen-dependent patients. More recent data have highlighted that outcomes following ECMO for COVID-19 appear to be worsening. Possible reasons include differences in patient selection, use of ECMO by less experienced centres, emergence of new viral variants, or changes in the standard management of critically ill COVID-19 patients.

Outcomes following ECMO for COVID-19 are no longer comparable to outcomes after ECMO for other causes of ARDS. The median duration of ECMO for COVID-19 is demonstrably longer than at the beginning of the pandemic. Taken together, these two issues have significant implications about the use of ECMO in healthcare settings under strain from the pandemic.

The role of ECMO at this point in the pandemic will be discussed in detail.