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POSTER COMMUNICATION · INTERNAL MEDICINE

ECMO for ARDS in the COVID-19 Era: Patient Selection, Outcomes, and Complications—Narrative Review (2020–2024)

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KEY MESSAGES

1. ECMO is reserved for the most critically ill ARDS patients and is associated with high mortality and complication rates.
2. Patient selection, timing, and center expertise are key determinants of ECMO outcomes in severe ARDS.
3. Standardized pathways and early referral improve outcomes; ongoing research is needed for optimization in COVID-19 and tuberculosis contexts.

ABSTRACT

Introduction. Acute respiratory distress syndrome (ARDS) is a severe inflammatory lung injury caused by various triggers. ECMO is considered a rescue therapy for severe ARDS refractory to conventional treatments. Previous trials and guidelines suggest benefits in selected patients at experienced centers. This review summarizes recent advances in ECMO for ARDS focusing on outcomes, complications, and patient selection during the COVID-19 era.

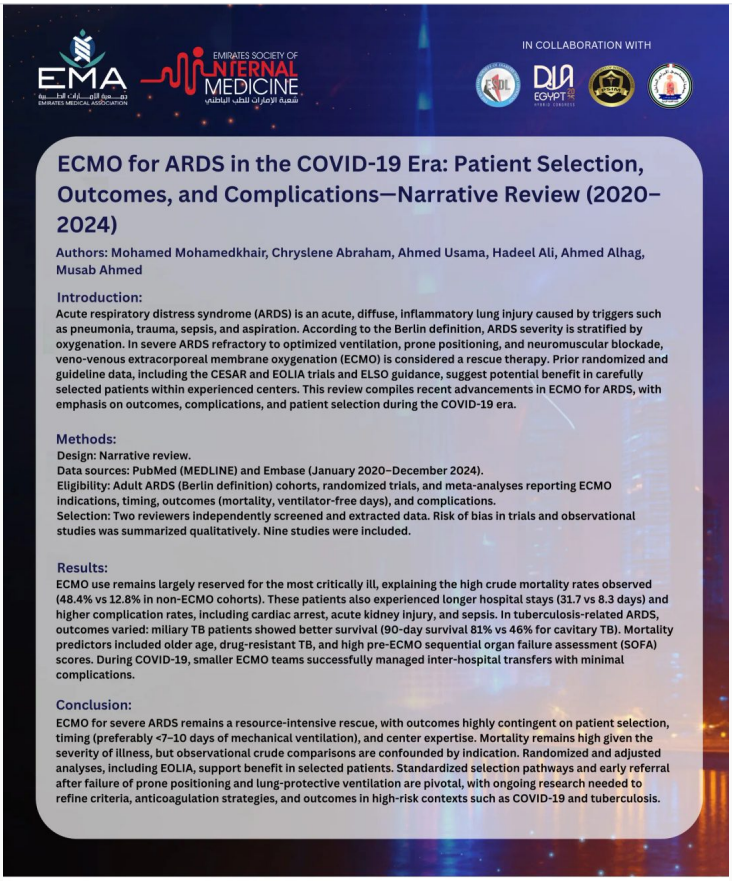
Materials and methods. Narrative review using PubMed (MEDLINE) and Embase databases from January 2020 to December 2024. Included adult ARDS cohorts, randomized trials, and meta-analyses reporting ECMO indications, timing, outcomes, and complications. Data extraction was performed independently by two reviewers. Risk of bias was qualitatively summarized. Nine studies were included.

Results. ECMO is mainly used for the most critically ill patients, associated with high crude mortality and longer hospital stays. Complications include cardiac arrest, acute kidney injury, and sepsis. In tuberculosis-related ARDS, survival varies by TB type. During COVID-19, smaller ECMO teams managed inter-hospital transfers with minimal complications.

Conclusion. ECMO remains a resource-intensive rescue for severe ARDS with outcomes dependent on patient selection, timing, and center expertise. Mortality is high but confounded by indication. Evidence supports benefit in selected patients. Standardized selection and early referral after failure of other therapies are crucial. Further research is needed to refine criteria, anticoagulation, and outcomes in high-risk contexts like COVID-19 and tuberculosis.

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