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ECMO can be a treatment modality for poisoning cases

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Background: Although there have been many developments related to specific strategies for treating patients after poisoning exposure, the mainstay of therapy remains symptomatic and supportive care.
Objectives: To highlight different techniques of ECMO, indications, contraindications, and some case reports of its use in patients with poisoning.
Methods: PubMed and the Cochrane database were searched using the terms "extracorporeal membrane oxygenation", "ECMO", and "poison".
Results: Two types of ECMO are used: veno-venous ECMO (VV-ECMO) and veno-arterial ECMO (VA-ECMO).
Indications: As the clinical impact of intoxication is often temporary, ECMO can be used as a "bridge to recovery".
Contraindications: Absolute contraindications are uncontrolled coagulopathy and severe intracranial bleeding, which precludes the use of anticoagulation therapy. Relative contraindications to ECMO include advanced age, severe irreversible brain injury, untreatable metastatic cancer, and severe organ dysfunction.
In different case reports, ECMO has been successfully used in treating cases of aluminum phosphide poisoning,[1,2] hydrocarbon aspiration,[3] and calcium channel blocker toxicity.[4,5]
Patients with aluminum phosphide poisoning treated with ECMO recovered very well and were safely discharged from hospital.[2]
There is evidence that pulmonary parenchymal tissue can recover from hydrocarbon pneumonitis, but the degree of injury and recovery is variable. In the Extracorporeal Life Support Organization Registry, 19 children with hydrocarbon pneumonitis were treated with extracorporeal membrane oxygenation during 1985 to 1994 and 68% survived compared with the 52% overall survival of 883

pediatric cases who had a diagnosis of a respiratory condition.[3]
For calcium channel blocker toxicity, ECMO was an efficient and relatively safe last resort therapy in critically ill poisoned patients (i.e. cardiac arrest and refractory shock) who did not respond to conventional therapies.[4]
Conclusions: Recently, ECMO equipment has improved considerably, rendering it more biocompatible, and it has been used more frequently as an assist device for patients needing oxygenation as well as circulatory support. ECMO is considered a bridge for patients who are severely poisoned with acute respiratory distress syndrome (ARDS) or refractory circulatory shock.

Keywords: ECMO, extracorporeal membrane oxygenation, TOX, poisoned

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