

CASE AND COMMENTARY

Should Long-Term Life-Sustaining Care Be Started in Emergency Settings?

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Abstract

Decision making on behalf of an incapacitated patient is challenging, particularly in the context of venoarterial extracorporeal membrane oxygenation (VA-ECMO), a medically complex, high-risk, and costly intervention that provides cardiopulmonary support. In the absence of a surrogate and an advance directive, the clinical team must make decisions for such patients. Because states vary in terms of which decisions clinicians can make, particularly at the end of life, the legal landscape is complicated. This commentary on a case of withdrawal of VA-ECMO in an unrepresented patient discusses Extracorporeal Life Support Organization guidelines for decision making, emphasizing the importance of proportionality in a benefits-to-burdens analysis.

Case

TM is a 42-year-old man who was brought by emergency medical service personnel to an emergency department in refractory ventricular tachycardia. After multiple rounds of cardiopulmonary resuscitation (CPR), defibrillations, and administration of antidysrhythmic drugs, TM, who does not have a surrogate or advance directive, is put on venoarterial extracorporeal membrane oxygenation (VA-ECMO) and admitted by Dr A to the hospital's cardiac intensive care unit.^{1,2} Dr A's team learns little about TM's medical history and life, and Dr A decides that TM is not a candidate for heart transplantation or left ventricular assist device placement. Over the next days, Dr A's team members agree that TM is unlikely to recover from heart failure. They wonder whether and when to withdraw VA-ECMO support and how to decide.

Commentary

Making complex decisions for incapacitated, unrepresented patients presents both clinical and ethical challenges. The absence of an [advance directive](#) or surrogate means clinical team members must make decisions. States vary in terms of which decisions clinicians can make, particularly at the end of life,³ so the legal landscape is complicated. The Extracorporeal Life Support Organization (ELSO) guidelines can help clinicians make decisions for patients like TM about whether to initiate or discontinue VA-ECMO, a type of extracorporeal life support.

Initiation of VA-ECMO and Emergency Presumption of Consent

VA-ECMO provides mechanical cardiopulmonary support for patients with refractory cardiac arrest. (This differs from veno-venous ECMO, which provides pulmonary support.) VA-ECMO does not fix underlying cardiopulmonary pathology; rather, it is a temporizing measure that offers patients time for their heart to recover or—in the absence of recovery—for transition to long-term circulatory support, such as a ventricular assist device (VAD) or cardiac transplantation.⁴ In a life-threatening situation, the emergency presumption of consent justifies caring for an incapacitated patient without consent from a surrogate.⁵ Treatment is provided based on the assumption that a reasonable patient with decision-making capacity would consent to a life-saving intervention.

One ethical question is whether VA-ECMO should be considered different from other forms of life-sustaining therapy typically covered under the emergency presumption, such as intubation and mechanical ventilation.⁶ VA-ECMO is a medically complex, [high-risk, and costly therapy](#), so it could be argued that its use should be restricted and offered only to patients who will clearly benefit. A challenge is that it can be difficult to prognosticate in the midst of a crisis. Although clinical factors have been identified retrospectively that are associated with more favorable outcomes when VA-ECMO is implemented for refractory cardiac arrest,⁷ discussion of this issue is beyond the scope of this article; prospective studies are needed to better predict outcomes. For now, ELSO suggests that VA-ECMO be considered as an aid to CPR if the patient has a reversible cause for the arrest and has had excellent CPR.⁸

When considering initiation of VA-ECMO in an emergency, irrespective of whether the patient has a surrogate, clinicians should use the same clinical judgment as they do when making decisions about other life-sustaining treatments. The team should reflect on the patient's clinical condition and expected prognosis.⁹ *Proportionality* is one ethical value suggested by the ELSO guidelines; to apply it, clinicians should consider whether the potential benefits of VA-ECMO are likely to outweigh its risks or burdens, given the patient's clinical situation. They should also incorporate patient preferences when set forth in an advance directive or in prior interactions. Respecting a patient's wishes articulated when he or she had decision-making capacity is paramount to respecting that patient's autonomy when incapacitated. These wishes can then be used to guide clinicians and surrogates in determining goals and a plan of care.

The clinical and ethical appropriateness of VA-ECMO should be assessed similarly to that of other life-sustaining measures. It should be initiated when its potential to benefit a patient outweighs its potential to burden the patient and when it promotes reasonable goals of care. Additionally, like any other life-sustaining treatment, VA-ECMO should not be withheld from a patient who lacks decision-making capacity simply because there is no surrogate decision maker or advance directive.

Continuing VA-ECMO

Regardless of whether there is a surrogate, decision making in emergencies, when time is short, often does not permit ethical deliberation as described above.⁶ Once clinical team members understand a patient's diagnosis and a patient is stabilized, informed consent can be revisited. By informed consent in the context of VA-ECMO, we mean an ongoing process of frequent discussions with patients or surrogates about the prognosis, goals of care, and benefits and burdens of VA-ECMO.¹⁰

As a patient's clinical status evolves, newly emerging information can be used to guide goals-of-care discussions and decision making. Over time, a VA-ECMO patient's likelihood of cardiopulmonary recovery tends to become clearer, as does the presence or absence of renal impairment, neurologic injury, or other complications related to VA-ECMO.¹¹ Ongoing application of the ethical value of proportionality—that is, continued consideration of the relative benefits and burdens of VA-ECMO—is essential to a good ongoing consent process. Palliative care or clinical ethics consultations, depending on institutional availability, can also inform deliberations and help guide decision making. When benefits outweigh burdens, generally, it makes ethical and clinical sense to continue VA-ECMO for a patient.

Discontinuing VA-ECMO

When patients do not recover on VA-ECMO and are not candidates for a VAD or cardiac transplantation, [terminal discontinuation](#) is most likely the only option. Unlike mechanical ventilation—which can be provided long term, via a tracheostomy, and outside intensive care settings—presently, there are no options for long-term VA-ECMO support. This is one reason ELSO recommends that VA-ECMO for refractory cardiac arrest “be discontinued promptly if there is no hope for healthy survival,” where healthy survival is defined as “three to five days of no cardiac function in a patient who is not a VAD or transplant candidate.”¹²

Decision making about discontinuation of ECMO can be complicated. When a patient has a surrogate, the clinical team can have an informed discussion with this person to consider the rationale for terminal discontinuation and, ideally, obtain consent to stop VA-ECMO. If—after a good faith effort to locate a patient's friends, family, or advance directive (and to document such efforts)—no surrogate is found when VA-ECMO is initiated for a patient, then palliative care, clinical ethics, social work, and chaplaincy colleagues, for example, should be formally included in thoughtful discussion and deliberation about next steps. An incapacitated patient is incredibly vulnerable, and inclusivity of deliberation can be essential to ensuring that the patient receives the standard of care. If all generally agree that the patient under consideration would not likely survive after VA-ECMO removal or could not be converted to long-term support (such as transplantation or implantable VAD), terminal discontinuation is most likely the only option. We suggest clinicians also seek guidance from hospital legal counsel about

proceeding with discontinuation in accordance with applicable state law. Once a decision to discontinue VA-ECMO is made, the clinical team should proceed expeditiously, as delays tend to prolong a patient's dying process. Prior to discontinuing VA-ECMO, clinicians should be prepared to manage any distressing symptoms a patient could experience between the time of separation from VA-ECMO and his or her death.¹³

Making VA-ECMO decisions on behalf of an incapacitated patient with no surrogate or advance directive tends to be **stressful** for clinicians; any decision will likely impact anyone who has cared for the patient. Postponing determination of goals of care or critical discussions about a patient's status or prognosis can be burdensome for team members, particularly if they are concerned about patient suffering, wasted resources, or continued care offering minimal or no benefit. Maintaining inclusivity in discussions and deliberations can help make members of a care team feel that their contributions to thoughtful consideration about the patient's care are important.

Conclusion

In emergencies, VA-ECMO should probably be provided to all patients, regardless of whether they have a surrogate or advance directive, particularly when potential benefits are thought to outweigh potential burdens. If the patient fails to recover and is not a candidate for a VAD or cardiac transplantation, VA-ECMO should be discontinued when its burdens outweigh its benefits or potential benefits. How best to proceed respectfully with terminal VA-ECMO discontinuation will vary depending on state law. Clinicians should prioritize their duties to incapacitated patients with no surrogate due to their extreme vulnerability.

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