

## ECMO as a Palliative Bridge to Death

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To cite this article: Rachel Rutz Voumard, Zied Ltaief, Lucas Liaudet & Ralf J. Jox (2023) ECMO as a Palliative Bridge to Death, *The American Journal of Bioethics*, 23:6, 35-38, DOI: [10.1080/15265161.2023.2201217](https://doi.org/10.1080/15265161.2023.2201217)

To link to this article: <https://doi.org/10.1080/15265161.2023.2201217>



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Published online: 23 May 2023.



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THE AMERICAN JOURNAL OF BIOETHICS  
2023, VOL. 23, NO. 6, 35–38  
<https://doi.org/10.1080/15265161.2023.2201217>



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## ECMO as a Palliative Bridge to Death

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ECMO is a short-term measure providing temporary life support until resolution of the primary insult or transplantation. Thanks to technological advances in life support, its use has increased enormously over the past three decades, with less than 2,000 cases in the early 1990s to more than 20,000 in 2021 ([www.else.org](http://www.else.org); Extracorporeal Life Support Organization (ELSO) 2023). Although ECMO requires a minimum level of sedation and analgesia, there is a growing interest to

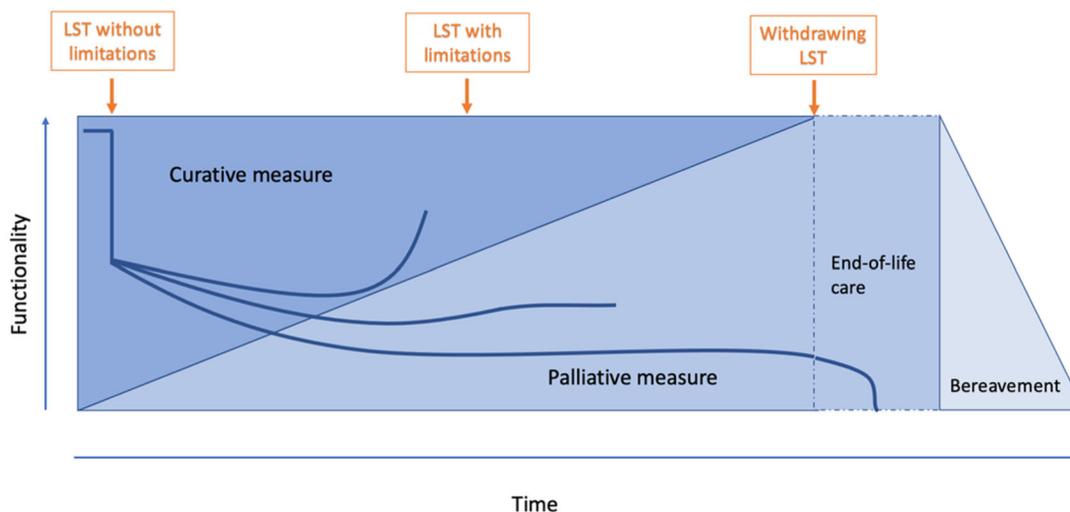
maintain patients awake with spontaneous breathing. Recent studies support such a strategy pointing to a positive impact on post-ECMO recovery and survival (Crotti 2017). Arguments in favor of keeping patients awake on ECMO include a reduced incidence of delirium, early mobilization, improved rehabilitation, and the promotion of interactions with families and clinicians (Langer 2016). By contrast, awake patients may experience discomfort, are exposed to increased risks

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**Figure 1.** Early integration of palliative care in the intensive care unit for patient with life-sustaining treatment (LST), adapted from Murray 2005.

of device displacement, and may develop patient self-induced lung injury (P-SILI) in case of elevated respiratory drive.

Currently, awake ECMO concerns only a minority of patients, as indicated in a recent multicenter analysis of 197 COVID-19 patients supported by veno-venous ECMO, which included 17 (8.6%) awake patients (Makhoul 2023). Among awake ECMO patients, a minority will neither recover nor be a candidate for transplantation (Langer 2016). We may assume that a proportion of them will have decisional capacity and may request the continuation of life-sustaining treatment. Although these represent only a small minority of all ECMO patients, their number may increase in years to come, challenging the ethical considerations regarding ECMO continuation for capacitated patients as a “bridge to nowhere”.

The so-called “bridge to nowhere” has in fact a destination; it is the reorientation of care to palliative measure. Palliative care (PC) in the intensive care unit (ICU) has been shown to be an effective integrative approach (Curtis et al. 2022). PC focuses on symptoms management, psycho-socio-spiritual support, goals-of-care conversations and advance care planning. All of these issues are particularly relevant to capacitated patients on ECMO, especially in the absence of any potential for recovery or transplantation. Addressing PC needs in the ICU reduces physical and psycho-socio-spiritual burden for patients and their families and improves end-of-life care (Metaxa 2021). In a descriptive study of patients with COVID-19 receiving ECMO, Siddiqui et al. (2023) showed that early integration of PC helps patients and families better understand the complexity of ECMO

therapy, its benefits, and its limitations. It also helps clinicians discuss goal-concordant care, which aims to align treatment decisions with the patient’s preferences. Concurrent intensive and palliative care is challenging as is early integration of PC in other medical domains. It should begin early and be responsive to the acute changes in the health state (Figure 1). However, this model offers unique opportunities for goals-concordant care conversations, as well as advance care planning to prepare the end of life.

For the few capacitated patients who wish to continue ECMO, we argue that ECMO can be used as a palliative measure with significant ethical value. In the context of goals-of-care conversations, the ICU team is dedicated to respecting the patients’ own values and their definition of quality of life, whether it could be surviving until the birth of a child or using the remaining time to accomplish unfinished tasks in life. The qualitative form of medical futility is co-defined by the patients themselves, since it depends on their perception of harms and risks caused by the treatment versus the benefit they personally gain from staying alive (Schneiderman 2011). Healthcare professionals may be uncomfortable accepting such a treatment based on their own conception of quality of life, which may be different from that of the patient. They may also invoke quantitative futility, pointing to the fact that ECMO cannot effectively maintain life in the long run. How long should they commit to maintain a patient under artificial measure in the ICU? How far should they engage to correct technical failures and complications related to ECMO therapy?

We invite clinicians to consider a paradigm shift. In such situations as presented above, the goal of care is

no longer to extend life until recovery or organ transplantation. Instead, the goal of ECMO in these situations can be to attain a sufficient quality of life, even if this is only for a limited period before death. ECMO is a life-sustaining technology that, more than any other form of assistance, allows clinicians to go beyond the limits of organ viability and survival. Yet, ECMO therapy is also associated with unavoidable severe complications (thrombo-embolic, hemorrhagic, infectious), jeopardizing the patient's consciousness and survival (Combes 2018). As any other life-sustaining treatment, it can increase quantity and quality of life but ultimately does not exempt from death. We face similar challenges regarding artificial nutrition or hydration for terminally ill patients. In such challenging cases, it may be beneficial and respectful to offer a delay, value its temporality, and support patients and families in their highly personal end-of-life process. While maintaining ECMO treatment, withholding treatment of future complications may be seen as more proportionate for awake patients on ECMO that withdrawing ECMO.

Our approach raises the issue of distributive justice. A patient on palliative ECMO will use important scarce resources in terms of technology, personnel, and cost. It can be argued that a patient on ECMO as bridge to organ transplantation also uses major resources, especially considering organ scarcity. Although their clinical trajectory will differ drastically, they share some similarities. Both were initially placed on ECMO as candidates for recovery or transplant. Both wish to prolong their lives. For sure, organ transplantation, while bearing its own risks, has the potential to prolong life significantly longer and lead to a certain recovery of health and functional status. Yet, it is ethically problematic to allocate scarce resources by comparing the values of different lives. A life sustained for a shorter time may not necessarily be less valuable than a life sustained for a longer time. Moreover, the value of a short life extension near the end of life may be experienced as extremely precious by the patient and his or her family. Besides, given the very low number of capacitated patients who want the ECMO therapy to continue for a usually limited time does not constitute the major reasons for resource scarcity in this context. Dilemmas in distributive justice would be more effectively prevented if the problems of organ shortage and adequate ICU resources would be addressed. We do not exclude that in concrete cases of local scarcity, such as in triage cases, it may be ethically appropriate to withhold ECMO and allocate it to another patient who will

derive a significantly higher benefit from it. But in general, we consider continuing wanted ECMO in capacitated patients to be a valid strategy respecting the principle of justice as well as the principles of respect for autonomy, beneficence and non-maleficence.

In conclusion, we consider that it would be more beneficial, proportionate, and respectful to withhold care of the unavoidable complications of ECMO than to withdraw ECMO in awake patients requesting continuation of therapy. ECMO as a bridge to death may paradoxically qualify as a palliative care measure, even though it sustains life. The limited time it offers can provide the patient a precious opportunity for life completion, social and spiritual relationships, and preparation for death and bereavement. There are strategies for balancing the principles of respect for autonomy and beneficence with the issue of just resource allocation and using ECMO as a "palliative bridge to death" may thus be ethically well justified.

## ACKNOWLEDGEMENT

This open peer commentary is inspired by the work of Prof. Randy Curtis (2/14/1960-2/6/2023), pioneer of the palliative care in the ICU, whose legacy continues to live in our thoughts and actions.

## FUNDING

The author(s) reported there is no funding associated with the work featured in this article.

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THE AMERICAN JOURNAL OF BIOETHICS  
2023, VOL. 23, NO. 6, 38–41  
<https://doi.org/10.1080/15265161.2023.2201213>



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## The Divergence of Technical and Human Teleology

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Childress et al. (2023) describe a disagreement between the competent patient and the physician recommending withdrawal of life-sustaining therapy (WLST). While the scenario is specific to ECMO, the issues are not isolated to ECMO. This case mirrors multiple scenarios of refusal of WLST by a substitute decision maker for an incapable patient. Nonetheless, I will agree with the authors that it is challenging to ethically justify WLST from a capable patient who has stringently objected to withdrawal. In this commentary, I aim to highlight several areas warranting clarification. The framing of ECMO as destination therapy is inaccurate. This framing obfuscates the clinical realities of ECMO as distinct from other ‘destination therapies’, such as ventricular assist devices (VAD) or laptop ventilators (LTV), which is key to understanding indications and purposes of the technology. Second, while I agree with the authors that decisions regarding ECMO support should be assessed through a lens of resource allocation and distributive justice, I argue that this lens should be applied to all ICU care

and is not isolated to ECMO support and individual patient cases.

### ECMO IS NOT A DESTINATION THERAPY

First, I strongly reject the authors’ characterization of ECMO as a “destination therapy” (Childress et al. 2023). This categorization distracts from the clinical realities of what can be achieved with an ECMO circuit. Destination therapies, such as VAD or LTV, are designed to function for indefinitely prolonged duration (years) with minimal monitoring, minimal maintenance, and established safety and efficacy in a non-monitored setting. The devices are smaller, more portable, and require only oral medications for maintenance (if any at all). Furthermore, the use of destination therapy devices can be taught in a number of weeks to patients or caregivers.

None of this applies to ECMO. Nor does it apply to other technologies such as ICU ventilators or continuous renal replacement machines. ECMO is a

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