AMA Journal of Ethics®

May 2019, Volume 21, Number 5: E429-434

MEDICINE AND SOCIETY

How Should Mechanical Circulatory Support Be Deactivated for Patients With Depression at the End of Life?

Stephan R. Weinland, PhD, MS and James Levenson, MD

Abstract

Mechanical circulatory support (MCS) is an increasingly frequent treatment option for managing end-stage heart failure. Devices are implanted either as destination therapy or as bridge to transplant. Patients undergoing this treatment can experience significant symptoms of depression in addition to stresses associated with chronic illness. After implantation, some patients may decide that the burdens of an MCS device outweigh the benefits. Physician asked to assist in deactivating MCS devices in the face of depression must ensure appropriate assessment, informed consent, and multidisciplinary involvement to minimize suffering and maximize patient quality of life.

Depression and Mechanical Circulatory Support

With more than 2500 mechanical circulatory support (MCS) devices implanted per year, left ventricular assist devices (LVADs) and associated circulatory support devices are becoming an increasingly frequent method of bridging patients to transplant or prolonging life in the form of destination therapy.[1] When patients in the Interagency Registry for Mechanically Assisted Circulatory Support (INTERMACS) sample were asked about satisfaction with their decision to implant a device, more than 80% reported a favorable impression of their VAD experience during the first 2 years.[1] Quality of life also improved after VAD implantation in a majority of patients in the INTERMACS sample irrespective of preoperative disease severity.[1]

One important factor influencing quality of life in MCS patients is depression. Two studies have highlighted improvement in both depression and anxiety symptoms—largely due to functional improvements in activity level, sleep, and other symptoms—after device implantation.[2,3] Despite improvements in quality of life postimplantation for many patients, symptoms of depression can still be a common experience in patients with heart failure and MCS. Two studies, found that 29% and 43% of LVAD patients reported at least mild depressive symptoms while on the device.[4] Quality of life may decline in some MCS patients, and there is a bidirectional relationship in MCS patients between depression and poorer quality of life[5] (as is common with other chronic diseases[6]). Physical symptoms associated with heart disease can mirror those seen in

patients with depression, and it can be difficult to determine whether some physical symptoms are attributable to heart failure or clinical depression (eg, insomnia, fatigue, anorexia, poor concentration).[2]

Assessment by a psychiatrist or psychologist experienced with MCS patients can help clarify whether a patient has a true depressive disorder or is experiencing a period of depressed mood that can occur as part of a normal reaction or temporary adjustment to the stresses that often accompany advanced disease. Given that depression is prevalent preimplantation and postimplantation,[4] depressive symptoms should be identified as early as possible to enable evaluation and intervention, thereby allowing patients maximum time for stabilization or improvement in mood symptoms prior to implantation. The presence of clinical depression should never absolutely preclude MCS implantation; rather, clinical depression should be treated so as to ensure the highest likelihood of the patient's managing his or her care needs effectively postimplantation. Such an approach ensures that patients are at their most resilient in dealing with the upcoming stresses of a major medical procedure.[7]

Clinicians can thus expect that significant depressive symptoms frequently will be present when a patient expresses a desire to withdraw MCS care. When a patient's request to deactivate MCS appears to be influenced by depression, ethical uncertainty arises related to informed consent and medical decision-making capacity, necessitating a comprehensive health assessment and multidisciplinary involvement to minimize suffering and maximize patient quality of life.

Informed Consent for Implantation and Preimplant Discussion

Given that a medical decision to discontinue MCS can be made by a patient with decision-making capacity who is experiencing depression symptoms, preimplantation evaluation and informed consent become more critical. Comprehensive multidisciplinary assessment preimplantation can provide information about patients' past history of depression as well as how they have coped with significant prior medical challenges.[8] Routine informed consent includes not only informing patients of device risks and benefits and expectations for daily life with the device, but also discussion of end-of-life issues.[7] Specifically, patients should be informed of their right to disengage from MCS care from the time of initial evaluation and discussion, since patients with decision-making capacity are not required to receive therapy they no longer wish to receive.[9]

Capacitated adults' right to refuse life-sustaining treatment is both legal and ethical.[10] Discontinuation of MCS is considered equivalent to allowing natural death by restoring the patient's original heart failure trajectory.[10] It is ethically permissible if the aim of withdrawal is not to precipitate death.[8] Preimplantation discussion of patients' preferences is therefore highly desirable. The use of advance directives may serve as a starting point for such discussion but cannot substitute for in-depth exploration of how

patients view MCS benefits and burdens.[11] Even with appropriate preimplantation assessment and intervention, patients might choose at a later point to terminate use of their implanted MCS device.

Assessing a Request to Discontinue MCS in Light of the Patient's Health

Clinicians should anticipate situations in which requests for discontinuing MCS are likely to arise.[12] Devices may be withdrawn if they become ineffective or too burdensome or are no longer desired.[13,14] Some patients may consider life with MCS "worse than death" because MCS can prolong the dying process. Clinicians should consider how depression might be affecting patients' decision-making capacity, and clinicians and patients together should assess whether the device improves quality of life, not just length of life, as an extension of life that is accompanied by suffering may be experienced as an extension of the dying process.[12]

Mood. The clinical evaluation of the effect of depression on a patient's capacity to make medical decisions is difficult for several reasons.[15] Depression may seem a normal response to serious medical illness. It can distort decision making on a spectrum from subtle pessimism to extreme nihilism. Ultimately, a diagnosis of major depression is neither necessary nor sufficient to determine if the patient's medical decision making is impaired. Put differently, the diagnosis of a psychiatric disorder does not necessarily compromise a patient's ability to consent to or refuse treatment. Even most psychiatric inpatients retain decision-making capacity, and the rate of incapacity for psychiatric patients closely mirrors the rate for medical inpatients.[16] Early identification and treatment of depression may prevent its incursion into later decisions. When it remains uncertain whether depression has undermined decision-making capacity in a patient requesting discontinuation of MCS, consultation with psychiatry and ethics is advisable.

Coping. Physical suffering or limitations imposed by devices can affect patients' ability to think accurately about how they are managing. Assessing patient coping by asking questions such as "If you had less pain would you still want to turn off your device?" or "If you were able to unplug from the wall and be more active with batteries would you still want to proceed with deactivation?" may help clarify patients' motivation and identify issues that are modifiable with multidisciplinary team and support system involvement.

Decision Making Regarding Discontinuation of MCS

When a patient wants to discontinue therapy but the treatment team determines that the patient does not have the capacity to make that decision, a surrogate would become the decider. Who should serve as the appropriate surrogate decision maker is determined in the United States by state law. If a guardian had been previously court appointed or the patient had previously designated a health care power of attorney (POA), that individual would be the surrogate. In the absence of a guardian or POA, in

most states the closest next-of-kin would serve as the surrogate decision maker. Surrogates are supposed to base their decisions on what is known regarding the patient's values and, if those are unknown, what is in the patient's best interests.[17] In circumstances in which the patient is actively protesting the surrogate's decision, consultation with risk management and hospital legal counsel is advisable to determine if judicial involvement is warranted. In talking with families, it is important to communicate transparently about the prognosis and the patient's wishes regarding treatment. Assessing how well patients and their families understand the benefits and burdens is important in this stage of care as well.[13]

Shah et al advise that the process of deactivation should be coordinated by an interdisciplinary team to maximize patient comfort and family support.[18] Particularly when there is a lack of consensus, consulting a hospital ethics committee may be advisable. Involvement of the palliative care service from preimplantation to deactivation has been shown to reduce overall hospital costs and shorten intensive care unit stays.[18] One study found that in an MCS program that utilized palliative care services, patients were more likely to die in a supportive hospice setting rather than in an intensive care unit.[13]

Conclusion

Clinicians must plan for situations in which MCS is no longer medically appropriate or desired by patients, who have the right to decline or discontinue treatment if they have decision-making capacity.[9] End-of-life issues, including possible discontinuation of MCS, should be discussed prior to implantation. However, valid informed consent for implantation may be complicated by the presence of depression. Early identification and treatment of depression can enhance patients' capacity to make medical decisions, including future MCS discontinuation. More severe depression can impair patients' capacity to make such decisions but does not necessarily obviate it. When depression appears to impair decision-making capacity, psychiatric consultation should be obtained. Decisions to discontinue MCS should be multidisciplinary and involve patients' families. When there is a lack of consensus, involvement of an ethics committee and palliative care team can be helpful.

References

1. Kirklin JK, Pagani FD, Kormos RL, et al. Eighth annual INTERMACS report: special focus on framing the impact of adverse events. *J Heart Lung Transplant*. 2017;36(10):1080-1086.
2. Eisele M, Boczor S, Rakebrandt A, et al; RECODE-HF Study Group. General practitioners' awareness of depressive symptomatology is not associated with quality of life in heart failure patients—cross-sectional results of the observational RECODE-HF Study. *BMC Fam Pract*. 2017;18(1):100.

3. Yost G, Bhat G, Mahoney E, Tatooles A. Reduced anxiety and depression in patients with advanced heart failure after left ventricular assist device implantation. *Psychosomatics*. 2017;58(4):406-414.
4. Reynard AK, Butler RS, McKee MG, Starling RC, Gorodeski EZ. Frequency of depression and anxiety before and after insertion of a continuous flow left ventricular assist device. *Am J Cardiol*. 2014;114(3):433-440.
5. Lundgren S, Lowes BD, Zolty R, et al. Do psychosocial factors have any impact on outcomes after left ventricular assist device implantation? *ASAIO J*. 2018;64(4):e43-e47.
6. Alzoubi A, Abunaser R, Khassawneh A, Alfaqih M, Khasawneh A, Abdo N. The bidirectional relationship between diabetes and depression: a literature review. *Korean J Fam Med*. 2018;39(3):137-146.
7. Caro MA, Rosenthal JL, Kendall K, Pozuelo L, Funk MC. What the psychiatrist needs to know about ventricular assist devices: a comprehensive review. *Psychosomatics*. 2016;57(3):229-237.
8. Rady MY, Verheijde JL. Ethical challenges with deactivation of durable mechanical circulatory support at the end of life: left ventricular assist devices and total artificial hearts. *J Intensive Care Med*. 2014;29(1):3-12.
9. Chamsi-Pasha H, Chamsi-Pasha MA, Albar MA. Ethical challenges of deactivation of cardiac devices in advanced heart failure. *Curr Heart Fail Rep*. 2014;11(2):119-125.
10. Guidry-Grimes L, Sederstrom N. Expectation and suffering with LVAD deactivation. *Am J Bioeth*. 2015;15(7):74-76.
11. Bramstedt KA, Wenger NS. When withdrawal of life-sustaining care does more than allow death to take its course: the dilemma of left ventricular assist devices. *J Heart Lung Transplant*. 2001;20(5):544-548.
12. Wiegand DL, Kalowes PG. Withdrawal of cardiac medications and devices. *AACN Adv Crit Care*. 2007;18(4):415-425.
13. Nakagawa S, Garan AR, Takayama H, et al. End of life with left ventricular assist device in both bridge to transplant and destination therapy. *J Palliat Med*. 2018;21(9):1284-1289.
14. Powell TP, Oz MC. Discontinuing the LVAD: ethical considerations. *Ann Thorac Surg*. 1997;63(5):1223-1224.
15. Sullivan MD, Youngner SJ. Depression, competence, and the right to refuse lifesaving medical treatment. *Am J Psychiatry*. 1994;151(7):971-978.
16. Casida JM, Abshire M, Ghosh B, Yang JJ. The relationship of anxiety, depression, and quality of life in adults with left ventricular assist devices. *ASAIO J*. 2018;64(4):515-520.
17. Torke AM, Alexander GC, Lantos J. Substituted judgment: the limitations of autonomy in surrogate decision making. *J Gen Intern Med*. 2008;23(9):1514-1517.
18. Shah KB, Levenson JL, Mehra MR. Emergent use of mechanical circulatory support devices: ethical dilemmas. *Curr Opin Cardiol*. 2014;29(3):281-284.

Stephan R. Weinland, PhD, MS is an associate professor of psychiatry and surgery at VCU Medical Center in Richmond, Virginia. He is a clinical health psychologist who specializes in transplant psychosocial evaluation, and he works extensively with patients receiving mechanical circulatory support devices.

James Levenson, MD is a professor of psychiatry, medicine, and surgery at the Virginia Commonwealth University School of Medicine in Richmond, Virginia, where he is also the chair of the Division of Consultation-Liaison Psychiatry and vice chair for clinical affairs in the Department of Psychiatry.

Citation
AMA J Ethics. 2019;21(5):E429-434.

DOI
10.1001/amajethics.2019.429.

Conflict of Interest Disclosure
The author(s) had no conflicts of interest to disclose.

The viewpoints expressed in this article are those of the author(s) and do not necessarily reflect the views and policies of the AMA.

ISSN 2376-6980