Author has nothing to disclose with regard to commercial support.

viewpoint. A broader discussion of what constitutes killing can be found in Beauchamp and Childress's classic treatise *Principles of Biomedical Ethics*,³ which makes it clear that the meaning of terms such as *killing* and *letting die* is highly controversial: "The meanings of 'killing' and 'letting die' are vague and inherently contestable. Attempts to refine their meanings likely will produce controversy without closure."³ Other definitions could lead to a conclusion that discontinuing a continuous flow ventricular assist device (cfVAD) is less like killing and more like letting die.

Fischkoff and colleagues¹ suggest that the presence of acute severe aortic insufficiency equivalent physiology (AI-EP) when a cfVAD is disconnected does not render the act unethical. The critical ethical issue in the case of cfVAD withdrawal is not the new lethal physiologic condition of AI-EP, but rather it is the presence of a voluntary and fully informed request for discontinuation of an unwanted medical device by a terminally ill patient with decision-making capacity. In this case, the terminally ill patient is receiving life support with a cfVAD, so discontinuing the device is neither physician-assisted suicide nor voluntary active euthanasia—it is letting die, equivalent to disconnecting a ventilator from a ventilator-dependent patient.

Neither Entwistle and Fenton² nor Fischkoff and colleagues² mention an important alternative possibility for decommissioning a cfVAD, namely, blocking retrograde flow through the device. Transcutaneous insertion of an obstructive plug in the conduit⁴ or ligation of the conduit through a small thoracotomy incision⁵ can prevent backflow, placing the patient in the same clinical situation he was in before the cfVAD was implanted, thus allowing him to die as a result of heart failure, as he wishes, without AI-EP. Obstructing backflow obviates all the ethical issues Entwistle and Fenton² raise.

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REPLY: THERE ARE LIMITS TO AUTONOMY

Reply to the Editor:

We appreciate the concerns of Fischkoff and colleagues¹ regarding the ethics of withdrawal of left ventricular assist device (LVAD) support, and we agree with 2

important points they have made: first, that it would be "unethical to force patients to suffer at the end of life without appropriate palliative care," and second, that the discontinuation of VAD support is not permissible in all circumstances. We do wish to make a few comments.

We agree with the established consensus that a patient with capacity can refuse medical therapy at any time. In our manuscript, we have attempted to address the question of how this can best be applied to a patient with a VAD facing existential distress and whether there were other ethical issues involved. The central point of our argument is not that the LVAD creates a new physiology and therefore discontinuation is wrong. Rather, we argue that it is that it is time to rethink the limits of autonomy as related to LVAD withdrawal.

We believe that the issue is more complex than just a patient refusing care. This refusal places a duty on the caregiver to disconnect the device, unlike other conditions in which a patient no longer wants treatment. Further, this is an action that the patient or family can take themselves, without invoking the actions of the medical profession. Finally, the physiology is altered, so that discontinuation is not returning them to a condition that was present before the operation. Unlike renal failure, where cessation of dialysis returns them to the same state as before dialysis was started, discontinuation of LVAD support places them in a position that is worse than before therapy. One of the key arguments in the refusal or withdrawal of care is that we are letting nature take its course. In this case, the natural physiology has been altered in a way that the acute aortic insufficiency will be the mode of death, not heart failure.

Fischkoff and colleagues include patients with LVAD among the terminally ill, but these patients do not meet legal criteria for terminal illness (life expectancy of less than 6 months, in most states). The data on LVAD clearly show that heart failure on LVAD therapy is not a terminal disease or a lethal condition. In the absence of a complication, survival on LVAD support is measured in years, not months. Until a complication happens, a patient with a LVAD is no different than any other patient who is at greater than

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average risk for a major negative event. They are stable and have a good prognosis. If a complication arises, then their desire to continue on LVAD support can be assessed just as it is in any other patient with a similar outlook.

Finally, we appreciate the opportunity to re-emphasize the need for appropriate palliative care for all patients with chronic illness. We think that we may not have been clear enough about the end-of-life care of these patients if they decide to disconnect their own device. Although we do not agree that a physician or other health care provider should perform this action, it is entirely reasonable to have the involvement of palliative care and/or hospice services to help prevent the anxiety and

discomfort that may arise during discontinuation. We believe that these actions are an important service that can be offered to these patients at such a difficult point in time.

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