When Is Enough Enough? The Dilemma of Valve Replacement in a Recidivist Intravenous Drug User

Sarah C. Hull, MD, MBE, and Farid Jadabaie, MD

Yale School of Medicine, Section of Cardiovascular Medicine, Yale-New Haven Hospital, New Haven; and Yale School of Medicine, Section of Cardiovascular Medicine, West Haven VA Medical Center, West Haven, Connecticut

As we continue to make advances in medicine that promise to treat more people more effectively, we face rising pressures of cost containment and the imperative to allocate resources judiciously. Accordingly, physicians are increasingly confronted with the challenge of where to draw the line at providing care. At first glance this idea may seem akin to Hippocratic blasphemy; as physicians we are never supposed to stop caring for our patients. Nonetheless, it may not always be medically or ethically appropriate to provide ever-escalating care to patients whose illnesses continue to ravage them despite our best efforts, especially when self-destructive behavior lies at the root of their disease.

Mr X was a longstanding intravenous heroin user who initially presented with bacterial endocarditis requiring mitral valve replacement. Six months later, he re-presented with severe sepsis and prosthetic fungal endocarditis leading to severe mitral stenosis. Another valve replacement was deemed necessary to achieve cure given the level of valve destruction and persistent positive blood cultures despite appropriate antifungal therapy. However, three consultations with three different cardiothoracic surgeons yielded three nearly identical assessments: Mr X’s recidivism was a contraindication to repeat valve replacement. In case there had been any doubt as to whether he was still using, a nurse found used needles hidden in his clothes.

Despite his worsening mental status in the setting of multiple embolic strokes, Mr X expressed that he did not want to die. The ethics committee was consulted and found no medical contraindication to surgery, and in the absence of guidelines they deferred to a senior cardiothoracic surgeon. Although he reinforced the precedent that recurrent prosthetic endocarditis associated with continued active intravenous drug use sufficiently justified his colleagues’ declining to offer a reoperation, he agreed to perform one. After a predictably complicated postoperative course, Mr X was discharged to a physical rehabilitation facility. It was not clear whether there was an effort to enroll him in substance rehabilitation as well.

Shortly thereafter, his family brought him to the emergency department after finding him confused and disheveled at home. He had reportedly signed out of rehab against medical advice and stopped taking his antifungal medications. Further work-up revealed multiple new strokes and other embolic complications of methicillin-resistant *Staphylococcus aureus* endocarditis involving his new prosthetic mitral valve. Despite aggressive antibiotic therapy, he experienced worsening confusion and severe sepsis with multiorgan failure. His family ultimately decided to implement a do-not-resuscitate order, and he expired the following day.

Was this the right course of action? Most physicians would agree with the general principle that it is our duty and obligation to provide the best care to our patients regardless of circumstances. It is not our place to judge patients or treat them differently for past moral failings or legal trouble; this is the job of our justice system or other societal institutions. By this reasoning, we would be obligated to offer Mr X another valve replacement because he would have died without it, and we are in no position to punish patients for self-destructive or socially undesirable behavior by withholding treatment.

However, many physicians would also argue that we have a duty to be good stewards of medical care and not to squander resources where they are unlikely to provide much benefit. Health care is not an unlimited resource and somebody ultimately has to pay for it. Procedures that are not indicated or likely futile lead not only to worse patient outcomes but also to rising health care costs for everybody, which eventually results in limiting access to care—a situation with which we continue to struggle in this country.

In the practice of modern Western medicine, we tend to value autonomy above all other ethical considerations. There is a clear legal precedent and a culturally defended moral imperative to respect a patient’s decision to refuse treatment; to do otherwise would constitute medical battery. Conversely, physicians struggle much more when patients or their loved ones insist on treatment that physicians believe to be inappropriate or futile.

Distinguishing among variants of futility often determines how clinicians proceed with offering treatment. Physicians may unilaterally withhold treatment in cases of physiologic futility, such as initiating cardiopulmonary resuscitation in an intensive care unit patient failing multiple vasopressive agents and maximal ventilator support who progresses to cardiac arrest. In cases of medical futility, such as whether to perform coronary artery bypass graft surgery on a patient with multivessel coronary artery disease and metastatic cancer with an
estimated prognosis of only months, physicians and patients generally collaborate in formulating a treatment plan while taking into account both the physician’s trained expertise and the patient’s personal preferences. Such collaboration is often difficult in cases of psychosocial futility, which was invoked in the case of Mr X, because these dialogues are often fraught with blame and mutual mistrust. Although such patients may indeed be responsible for their health or lack thereof, physicians should not provide them with suboptimal treatment simply because their behavior may provoke antipathy. As Dr Kirkpatrick elegantly reminds us, “frustration with patients” should not be “sublimated into musings about the waste in medical care” [1].

Another great difficulty with psychosocial futility is the inability to prove it a priori. Many patients turn their lives around in the face of grave medical illness, and as professional healers we generally give patients the benefit of the doubt. After all, how else can one rationalize aggressive treatment of cardiovascular disease in a lifelong smoker with repeated admissions for angina? We would never deny him or her treatment even though many would argue it is futile if he or she continues to smoke several packs of cigarettes a day. Coronary revascularization for unstable angina, like valve replacement for infective endocarditis, is invasive but definitive treatment for an acute life-threatening process. How is this case different from that of Mr X, except for the fact that tobacco is legal and heroin is not?

Conversely, we require patients with failing organs to undergo extensive medical and psychosocial evaluation before placing them on a transplant list. Although specific points regarding transplant allocation remain contentious, most physicians would agree that a patient with multiple psychosocial challenges that would likely preclude regular medical follow-up and medication adherence should not undergo a transplant as this would be an inappropriate and wasteful allocation of a scarce medical resource. Some would argue that this practice amounts to “playing God,” but we accept it nonetheless because we realize that giving an organ to one patient means simultaneously albeit passively denying it to another who may die without it. Performing a presumptively futile valve replacement on one patient may not have the same direct and immediate effects on another as performing a heart transplant might, but there may be indirect consequences to all patients in the future with continuing shifts in health care allocation. Although a prosthetic valve is not as limited and finite a resource as a donor organ, as argued earlier we cannot continue to practice medicine as if our resources were unlimited because this is simply unsustainable.

We need to consider the imperative to treat all patients justly and fairly regardless of their societal transgressions, while at the same time knowing when to say “enough is enough.” As such, physicians should establish guiding principles for treating recurrent intravenous drug use–associated endocarditis. The most recent American College of Cardiology and American Heart Association guidelines make no specific recommendation, stating only “[s]urgery is not indicated if complications (severe embolic cerebral damage) or comorbid conditions make the prospect of recovery remote” [2]. Therefore, we propose potential policy suggestions here as starting points for a broader discussion. Perhaps after the first valve replacement, the patient should be encouraged to sign a contract (similar to narcotic agreements used by pain specialists rather than a legally binding document) agreeing to undergo drug rehabilitation and make a good faith effort to abstain from substance abuse in the future. We agree with Dr Sade and his colleagues, who have argued that we as physicians need to uphold our obligations and make sure that substance rehabilitation arrangements are in place before hospital discharge to maximize a patient’s chance of success, with much more coordination on a multidisciplinary level with psychiatry and social work [3]. Perhaps if a patient fails like Mr X, he gets a second chance because we know drug addiction is a disease that is difficult to overcome, but then it is made clear this is the last chance. Such a “three strikes” rule would serve to establish a futility threshold in an effort to balance our obligations to individual patients versus society, and perhaps more importantly to avoid causing potential harm to patients by performing very high risk procedures (such as a third sternotomy) that are unlikely to provide significant benefits. If clearer guidelines were to be widely adopted, we might provide a better standard of care to these challenging patients.

We would like to thank Barry Zaret, MD, for his insightful comments and suggestions.

References