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Commentary: Heart recovery: License to be offensive—on myocardial recovery following durable left ventricular assist device support

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CENTRAL MESSAGE

Myocardial recovery is more common than most think, but you have to look and work for it.

If you walked down the street and asked some random cardiologists or cardiac surgeons what are the odds of removing, without a transplant, a durable left ventricular assist device (LVAD) from a heart failure patient, he or she would probably laugh in your face. Years of looking at Interagency Registry for Mechanically Assisted Circulatory Support competing outcome curves have conditioned providers to accept that there is about a 1% chance of getting rid of the electric cord.[1] Indeed, if you take all-comers who get an LVAD, regardless of indication and postoperative management, only a small number actually have hearts that substantially improve. That said, many have experienced the awkward moment, when starting an LVAD explant/heart transplant, that an anesthesiologist points to the echocardiograph readout and says, "Wow, that heart looks really good." Obviously, there are reasons to proceed, but it does inspire one to think about the odds that the heart could have been used for someone else.

Much of the recovery revolution is based on ongoing education of our colleagues regarding the possibility for recovery. Some of the recent nomenclature changes are moving in this direction by deemphasizing bridging or destination therapy, and instead highlighting the more holistic need to treat patients with advanced heart failure—regardless of their path. Incumbent upon this is identifying potential patient populations and working intensively to promote reverse remodeling with the pump and adjunct medications.

The Prospective Multicenter Study of Myocardial Recovery using Left Ventricular Assist Devices (RESTAGE-HF) Trial is a case in point. In highly selected patients (young, nonischemic, and shorter duration of heart failure) with aggressive unloading and rapid uptitration of high doses of guideline-directed medication therapy, more than 40% of patients were explanted with a postremoval, transplant-free survival of nearly 80%.[2] There was nothing fancy about this trial: no stem cells, no micro RNA injections, just really intensive follow-up. Indeed, when looking at Interagency Registry for Mechanically Assisted Circulatory Support data,[3] patients who had an a priori designation of bridge to recovery and favorable clinical characteristics had a nearly 40% chance of having their pumps removed—again highlighting the prescriptive approach necessary to promote recovery.

Many providers insert pumps and care for patients with an LVAD using a zone defense. That is, medical decisions are made to try to prevent (ie, blood pressure control to prevent neurologic events) or respond to (ie, externalize an infected drive line) adverse events. Recovery requires providers to go on the offensive—diligent unloading, rapid and aggressive uptitration of guideline-directed medical therapy, and frequent turndown echocardiographs, amongst other factors. It also means enrolling patients into clinical trials to study novel ways of imaging, target optimal unloading, and implement adjunct biologic therapies. With recovery, the maxim still remains: If you don't look for it, you won't try for it, and hence you will rarely see it. Articles like that shared by our colleagues in Toronto[4] continue to

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raise awareness and are important to educate all of us about transforming care for patients with advanced heart failure.

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