

PRODUCT

Ex vivo heart perfusion (EVHP) system with bi-ventricular assist devices.

INDICATIONS

Ex vivo preservation and evaluation of donor hearts prior to transplantation.

VALUE PROPOSITION

• Enables assessment of a heart in working mode without compromising the total nutrition delivered to the heart.

INTELLECTUAL PROPERTY

Pending patent application.

DEVELOPMENTAL STAGE

- System has been tested on ex vivo hearts
- Ongoing testing in Japan (AIST)

CONTACT INFORMATION

Bill Kolosi Director, Medical Device Business Development & Licensing kolosiw@ccf.org 216 630-3875

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Ex Vivo Heart Perfusion with Ventricular Assist Devices

Toshihiro Okamoto, MD, PhD, and Daisuke Sakota, PhD

PROBLEM

In the United States, donor heart utilization rates remain low (~30%). Extending preservation time can result in an increased number of transplants. Quantitative evaluation of the donor heart function prior to transplantation can also lead to an increase in organ utilization rate. Such evaluation can be performed by perfusing the heart in what's referred to as "working mode". Conventionally, resting mode (R-mode) is for preservation and working mode (W-mode) is for evaluation. Currently, TransMedic's OCS[™] Heart system is the only FDA-approved ex vivo heart perfusion (EVHP) product, and only has R-mode, so heart function cannot be evaluated.

SOLUTION

The EVHP system developed at Cleveland Clinic provides a W-mode using ventricular assist devices (VADs) to minimize the workload of the heart while maintaining a desired flow of perfusate to the coronary arteries. Being able to perform a quantitative evaluation prior to transplantation will enable more objective decisions about the quality of the organ and increase the success rate of hearts transplanted.

