Heart In A Box: Beating Heart Technology Could Revolutionize Heart Transplantation

'Beating heart' technology could revolutionize field of heart transplantation.

The heart transplantation team at Ronald Reagan UCLA Medical is currently leading a national, multicenter phase 2 clinical study of an experimental organ-preservation system that allows donor hearts to continue functioning in a near-physiologic state outside the body during transport.

The Organ Care System (OCS), developed by medical device company TransMedics, works this way: After a heart is removed from a donor's body, it is placed in a high-tech OCS box and is immediately revived to a beating state, perfused with oxygen and nutrient-rich blood, and maintained at an appropriate temperature. The device also features monitors that display how the heart is functioning during transport.

The current standard of transporting donor hearts in iceboxes in a non-functioning state, which has been used for decades, requires the restarting of the heart once it has been placed inside the recipient.

"The concept of transplanting a donor heart in a beating state is revolutionary," said Dr. Abbas Ardehali, surgical director of the heart and lung transplantation program at Ronald Reagan UCLA Medical Center and principal investigator of the OCS trial. "This promising technology may improve the function of the donor heart, because it remains in a near-physiologic state. It can also help us better assess the suitability of a potential donor, since we can test the heart in the device."

Ardehali said the technology could also lead to better tissue matching between donor hearts and recipients because the box would grant the transplant team more time to test the heart for potential rejection factors.

Learn more at www.transplants.ucla.edu [1]

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