

# TandemHeart®: providing life-saving support for high-risk cardiovascular patients

Utilizing the TandemHeart PTVA (Percutaneous Transseptal Ventricular Assist) System, cardiologists and cardiovascular surgeons at Hoag Hospital are helping heart patients survive heart attacks, high-risk procedures and other cardiac interventions without undergoing major surgery.

## Critical circulatory assistance

TandemHeart allows Hoag specialists to provide mechanical circulatory support of up to five liters per minute for patients through percutaneous access. Guided through the femoral vein to the heart and connected by cannulae to a pump outside the body, TandemHeart pulls oxygenated blood from the

left atrium and returns it to the systemic arterial circulation, reducing the work load of the left ventricle and increasing systemic perfusion. This increase in blood flow helps to save vital organs and gives damaged hearts a chance to heal when patients experience acute heart conditions.

The device assumes approximately 85% of the heart's pumping function, improving blood flow until the patient is strong enough to undergo surgery or angioplasty. The device is also being used in supporting circulation during high-risk coronary interventions in Hoag's cardiac catheterization lab.

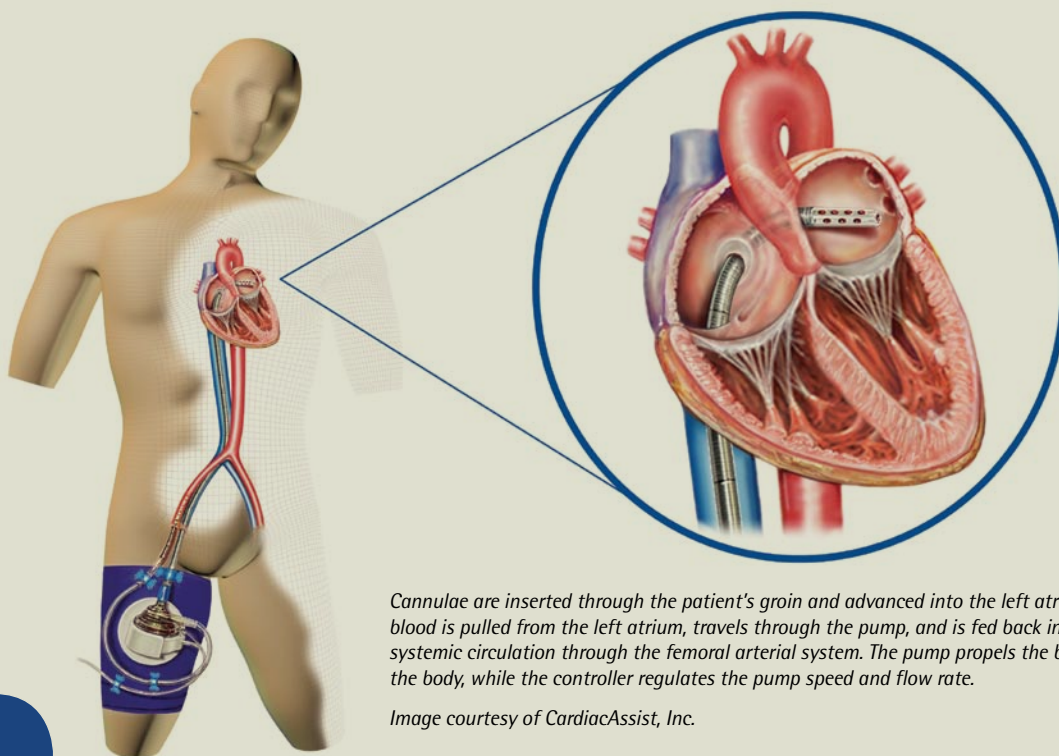
"Prior to this device, we were wary to perform angioplasty on patients with acute heart failure and left

main artery blockage because of the high risk for serious complications," comments Hoag's Medical Director of Cardiology Richard Haskell, MD. "Using TandemHeart, we are able to sustain these patients through artery-opening procedures and successfully treat the blockage."

Hoag Hospital is the only non-academic affiliated medical center in Southern California offering this breakthrough technology, providing a critical resource for heart patients in Orange County.

## Indications

- ▶ High risk angioplasty
- ▶ Bridge to transplant for patients with congestive heart failure
- ▶ Support critically ill patients before or after cardiovascular surgery



*Cannulae are inserted through the patient's groin and advanced into the left atrium. Oxygenated blood is pulled from the left atrium, travels through the pump, and is fed back into the patient's systemic circulation through the femoral arterial system. The pump propels the blood throughout the body, while the controller regulates the pump speed and flow rate.*

*Image courtesy of CardiacAssist, Inc.*

## Case study

**76-year-old female transported to ER via paramedics in severe respiratory distress. Denied CP. Patient urgently intubated.**

**CV Presentation:** *12 Lead LVH, RBBB, Septal Q waves, S waves V5-V6. Troponin 0.83. BNP: >1300. S1, S2 are distant without murmur. ECHO: EF 35%, dilated left atria & ventricle, moderate MV insufficiency.*

**Patient history:** *COPD, current smoker, GERD, asthma, HTN, psoriasis, arthritis. Meds: Home O<sub>2</sub>, lasix, lisinopril, prednisone, albuterol, advair. Coronary angiogram revealed 90% ostial left main stenosis, 60-70% diffuse RCA dx. Deemed poor surgical candidate. High risk for death during angioplasty. High risk for major heart attack if artery was not treated.*

**Treatment:** *Utilizing TandemHeart PTVA System to provide circulatory support to the patient's heart during the procedure, the cardiologists (Richard Haskell, MD and Desmond Levin, MD) performed angioplasty to treat the blockage in the patient's artery. The patient was released several days later and is doing very well. Without the circulatory support of TandemHeart there would have been no "good" option for this patient.*

## To Refer a Patient

*To refer a patient or for more information on TandemHeart, please call Hoag Heart and Vascular Institute at 949/764-5741.*