Non-cardiac surgery: Safe for patients with heart device

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Non-cardiac surgery can be performed safely in patients with a heart device typically implanted into patients waiting for a transplant, according to a study at Henry Ford Hospital in Detroit.

The left ventricular assist device (LVAD) is a mechanical pump implanted in the chest to help a weakened heart pump blood.

The devices are increasingly used in the United States, where heart failure affects five million people, but there are less than 3,000 donor organs available annually worldwide. Last year, nearly 2500 patients were implanted with the device in the United States, which is used chiefly for those waiting for a heart transplant due to the chronic donor shortage. In other cases, it is used for long-term support in patients who are not candidates for a heart transplant.

"As these devices become a more common therapy for the treatment of end-stage heart failure, there are an increasing number of patients on device support who require various non-cardiac surgical procedures," says lead author Jeffrey A. Morgan, M.D., associate director of Mechanical Circulatory Support in the Edith and Benson Ford Heart and Vascular Institute at Henry Ford.

"However, there is insufficient data and a lack of recommendations regarding the necessity and safety of stopping anticoagulation medication for surgery. The focus of this study was to review our four-year experience with the management of non-cardiac surgery patients on

LVAD."

During the study period that the authors reviewed, from March 2006 through May 2010, 64 patients with chronic heart failure underwent implantation of an LVAD at Henry Ford.

Clinical records of the patients were reviewed to identify patients who underwent non-cardiac surgical procedures while on LVAD support, with a focus on pre- and post-operative management of their blood-thinning medication. Researchers were also looking for any complications relating to bleeding, blood clots, or device malfunction.

Twenty non-cardiac surgeries were performed on 15 patients while on LVAD support. At the time of surgery, the patients had been on LVAD support for seven to ten months. Eighty-five percent of patients who were waiting for heart transplants, and sixty percent of terminally ill patients, were kept on preoperative aspirin and Coumadin for the surgical procedures.

The surgeries included procedures for cataracts, bowel resection, gall bladder removal, peripheral (leg) artery bypasses, hernias, and dental work.

In five of the eight surgeries for which patients stopped using Coumadin before surgery, Heparin was substituted.

General anesthesia was well tolerated by all patients. There were no deaths, nor complications due to blood clots or device malfunctions. Bleeding occurred in 35 percent of procedures. The average length of hospital stay after surgery was four to ten days.

"Our research team concluded that, as these clinical scenarios are becoming more common, development of institutional guidelines and

possibly international protocols for the management of LVAD patients having non-cardiac surgery may be prudent," says Dr. Morgan.

Robert J. Brewer, M.D., surgical director of Mechanical Circulatory Support at Henry Ford and co-author of the study, noted that it may possible to reduce the incidence of bleeding after surgery by lowering the preoperative use of blood thinning medications, although more analysis is required to determine if this can be performed safely without increasing the incidence of blood clots.

Dr. Morgan will present the study on April 15 at the annual meeting of the International Society of Heart and Lung Transplantation in San Diego.

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