

WHAT'S NEW IN MCS

November 2014



Bryan A. Whitson, MD, PhD

Assistant Professor of Surgery

Director, End-Stage Cardiopulmonary Failure Program

Co-Director, COPPER Laboratory

Department of Surgery Division of Cardiac Surgery

N-816 Doan Hall, 410 W. 10th Ave., Columbus, OH 43210

614-366-7414 Office / 614-293-2020 Fax

bryan.whitson@osumc.edu

surgery.osu.edu/copper

Reviews

[Evolution and impact of drive-line infection in a large cohort of continuous-flow ventricular assist device recipients](#)

Koval, Christine E.; Thuita, Lucy; Moazami, Nader; Blackstone, Eugene
J Heart Lung Transplant. 2014 Nov;33(11):1164-72. doi: 10.1016/j.healun.2014.05.011. Epub 2014 Jun 5

Dr. Koval and colleagues perform a retrospective review of 194 HeartMate II LVAD's implanted from 2004 to 2011. They investigate contributing factors, pathogen, and implications on survival.

In their analysis, the hazard from drive line infections (DLI) was 2% per month that increased to 11% a months 7.5 months post implant. Approximately 1/3 of patients developed a deep DLI and the incidence of pseudomonas as the pathogen was as high as 55%. While there were minimal antibiotic complications, of the patients who developed a second "superinfecting" organism ~75% of the infections initially were gram positive infections with 100% of the "superinfecting" organisms being gram negative bacteria. The predominant organisms were those that produced biofilms (staph and pseudomonas).

The impact of the infections had a detrimental effect on outcomes. The patients with DLI had an increase number of hospitalizations. At 12 months, in patients with DLI, 31% had died and only 28% had been transplanted. With a limited data set to draw definite conclusions, 20 of 45 patients reported drive line trauma. This trauma is considered to be a highly correlative factor for DLI.

[A novel method of blood pressure measurement in patients with continuous-flow left ventricular assist devices](#)

Woldendorp, Kei; Gupta, Sunil; Lai, Jacqueline; et al.

J Heart Lung Transplant. 2014 Nov;33(11):1183-6. doi: 10.1016/j.healun.2014.08.011. Epub 2014 Aug 26.

Dr. Woldendorp and colleagues perform a prospective correlation of current and novel methods of measuring blood pressure in patients with continuous flow LVADs (cfLVADS). The clinical problem is a very important one in that outpatient and home blood pressure measurements are difficult at best to obtain and often inaccurate. The presence of (even relative) hypertension in cfLVAD patients is a significant contributing risk factor to stroke.

The authors evaluate 38 patients in 2 cohorts (14 and 24 patients) looking at arterial lines, automated cuff pressures, Doppler sphygmomanometry, and pulse oximetry with sphygmomanometry (PULSE cohort). In the PULSE cohort, an oximeter is placed on a digit and the sphygmomanometer inflates and the return of oximeter signal is recorded as the cuff is deflated.

In their cohorts, there was a high degree of correlation amongst the invasive approach, automated, Doppler measurement, and pulse oximetry for evaluating blood pressure. The PULSE approach had a high degree of repeatability and reliability (i.e., both accurate and reproducible). While this approach needs to be validated in a larger cohort, the ease of use and the reproducibility with rather low fidelity equipment makes it highly appealing.

Journal of Heart and Lung Transplantation

[Evolution and impact of drive-line infection in a large cohort of continuous-flow ventricular assist device recipients](#)

Koval, Christine E.; Thuita, Lucy; Moazami, Nader; Blackstone, Eugene
p. 1164 – 1172

[Virtual implantation evaluation of the total artificial heart and compatibility: Beyond standard fit criteria](#)

Moore, Ryan A.; Madueme, Peace C.; Lorts, Angela; et al.
p. 1180 – 1183

[A novel method of blood pressure measurement in patients with continuous-flow left ventricular assist devices](#)

Woldendorp, Kei; Gupta, Sunil; Lai, Jacqueline; et al.
p. 1183 – 1186

Can procalcitonin differentiate infection from systemic inflammatory reaction in patients on extracorporeal membrane oxygenation?

Tanaka, Daizo; Pitcher, Harrison T.; Cavarocchi, Nicholas C.; et al.
p. 1186 – 1188

*

Thrombus detected in computed tomography angiography images of HeartMate II outflow graft: A cautionary tale

Mehr, Ali J.; Kwan, Michael D.; Kunavarapu, Chandra
p. 1193 – 1194

Endovascular repair of a HeartMate II left ventricular assist device

Dhesi, Pavittarpaul; Sadiq, Immad; Gluck, Jason
p. 1198 – 1199

*

Minimally invasive continuous-flow left ventricular assist device implantation: Avoiding a median sternotomy

Potapov, Evgenij V.; Krabatsch, Thomas
p. 1199 – 1200

*

Early power elevations and adverse events with the HeartMate II left ventricular assist device: An unsettled issue

Wever-Pinzon, Omar; Jorde, Ulrich P.
p. 1200 – 1201

*

Annals of Thoracic Surgery

Heart Transplantation After Longest-Term Support With Ventricular Assist Devices

Hetzer, Roland; Miera, Oliver; Photiadis, Joachim; et al.
p. 1814 – 1815

Using Near-Infrared Spectroscopy to Monitor Lower Extremities in Patients on Venoarterial Extracorporeal Membrane Oxygenation

Steffen, Robert J.; Sale, Shiva; Anandamurthy, Balaram; et al.
p. 1853 – 1854

**

[Ventricular Assist Device Implantation Late After Double Switch Operation for L-Transposition of the Great Arteries](#)

Komagamine, Masahide; Nishinaka, Tomohiro; Ichihara, Yuki; et al.
p. e109 – e111

JACC Heart Failure

No November Issue

Circulation

No Mechanical Circulatory Support articles in November

European Heart Journal

No Mechanical Circulatory Support articles in November

Journal of Cardiac Surgery

[Long-Term Right Ventricular Support with a Centrifugal Ventricular Assist Device Placed in the Right Atrium](#)

Marasco, Silvana F.; Stornebrink, Rebecca K.; Murphy, Deirdre A.; et al.
p. 839 – 842

[Park's Stitch for a Bicuspid Aortic Valve in a Patient on LVAD Support](#)

Maoz-Metzl, Daniel; Morsy, Mohamed; Khalife, Wissam I.; Lick, Scott D.
p. 843 – 845

Disclosure statement: the author has no disclosures.