What's New in MCS

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Reviews:

Quantifying the effect of cardiorenal syndrome on mortality after left ventricular assist device implant.
Kirklin JK, Naftel DC, Kormos RL, Pagani FD, Myers SL, Stevenson LW, Givertz MM, Young JB. J Heart Lung Transplant. 2013 Dec;32(12):1205-13

This study investigates the INTERMACs database to determine the post-implant mortality based on the severity of renal dysfunction which was categorized based upon GFR (<30, 30-59, >60). Worsening renal function correlated with an approximately 20% reduction in survival at 2 years going from low to severe renal dysfunction. Importantly, the major effect on survival occurred during the first 3 months. The highest mortality was seen in severe renal dysfunction associated with cardiogenic shock.

This study is important because it highlights the importance of considering LVAD therapy before cardio-renal syndrome advances. Given the clear correlation of advanced renal dysfunction with early mortality, it is suggested that initial temporary device support awaiting organ recovery prior to durable pump implantation should be considered.

Preoperative atrial fibrillation increases risk of thromboembolic events after left ventricular assist device implantation.
Stulak JM, Deo S, Schirger J, Aaronson KD, Park SJ, Joyce LD, Daly RC, Pagani FD. Ann Thorac Surg. 2013 Dec;96(6):2161-7

This study investigates 389 patients who received LVAD therapy at two large volume centers to determine the impact of pre-operative atrial fibrillation (AF) on post-implant thromboembolic events (TE). Patients with pre-operative AF were found to have a lower freedom from TE events compared to those without AF. There was no appreciable impact of AF on overall survival. AF was found to be an independent predictor of TE after LVAD placement.

This study is important because it is the first of its kind and highlights the importance of AF in the development of TE after LVAD therapy. Given the heightened awareness of TE, especially pump thrombosis, over the past several months, this is an important contribution to our overall understanding of factors contributing to this complex problem. The role of atrial appendage exclusion, another important consideration in AF patients, in the VAD population is also discussed.

CITATIONS:

Journal of Heart & Lung Transplantation:

1. Saraswat MK, Ullrich SL, Beaty CA, et al. After-hour ventricular assist device coverage: what level of expertise is required? J Heart Lung Transplant. 2013 Dec;32(12):1272-4.

2. Flint KM, Matlock DD, Sundareswaran KS, et al. Pre-operative health status and outcomes after continuous-flow left ventricular assist device implantation. J Heart Lung Transplant. 2013 Dec;32(12):1249-54
3. Morgan JA, Tsiouris A, Nemeh HW, et al. Impact of concomitant cardiac procedures performed during implantation of long-term left ventricular assist devices. J Heart Lung Transplant. 2013 Dec;32(12):1255-61*
4. Askar M, Hsich E, Reville P, et al. HLA and MICA allosensitization patterns among patients supported by ventricular assist devices. J Heart Lung Transplant. 2013 Dec;32(12):1241-8

Annals of Thoracic Surgery:

1. Lazar JF, Swartz MF, Schiralli MP, et al. Survival after left ventricular assist device with and without temporary right ventricular support. Ann Thorac Surg. 2013 Dec;96(6):2155-9.**
2. Cohn WE, Mallidi HR, Frazier OH. Safe, Effective Off-Pump Sternal Sparing Approach for HeartMate II Exchange. Ann Thorac Surg. 2013 Dec;96(6):2259-61