## **Supplement 3**

## Microorganisms

Causative organisms were diverse, although they were predominantly those associated with device infections. One study noted a temporal effect on the type of organism associated with infection; *S aureus* infections were seen early and *Pseudomonas* infections late. Another reported that treatment of driveline infections for a gram-positive pathogen was followed by development of a gram-negative infection or vice versa in one-sixth of cases. <sup>2</sup>

A study of multi-drug-resistant organisms showed that MRSA was the most resistant organism in patients with implanted LVADs (28). Another found *Pseudomonas aeruginosa* to be a predominant organism and noted difficulty eradicating this organism with medical therapy <sup>3</sup>. *P aeruginosa* was also reported as the most common cause of driveline infection, followed by MRSA and methicillin-susceptible *S aureus* in another study. <sup>4</sup> Gram-positive cocci were isolated more commonly from blood cultures and driveline exit sites than were gram-negative cocci in 1 investigation. <sup>5</sup>

## References

- 1. Choudhary N, Chen L, Sherazi S, *et al*: Incidence, microbiologic profile and outcomes of device related infections in advanced heart failure patients treated with left ventricular assist device. *Journal of Cardiac Failure* 1): S20, 2013 doi: http://dx.doi.org/10.1016/j.cardfail.2013.06.069.
- 2. Koval CE, Thuita L, Moazami N, Blackstone E: Evolution and impact of drive-line infection in a large cohort of continuous-flow ventricular assist device recipients. *J Heart Lung Transplant*, 2014 doi: 10.1016/j.healun.2014.05.011.
- 3. Kretlow JD, Brown RH, Wolfswinkel EM, et al: Salvage of infected left ventricular assist device with antibiotic beads. *Plastic and reconstructive surgery* 133 (1): 28e-38e, 2014.
- 4. Abou el ela A, Balsara KR, Lee A, et al: Driveline Infections in Left Ventricular Assist Devices: Review of Management Strategies and Their Outcomes. *Journal of Heart and Lung Transplantation* 34 (4 Supplement): S214, 2015 doi: 10.1016/j.healun.2015.01.589.
- 5. Hieda M, Sata M, Seguchi O, *et al*: Importance of early appropriate intervention including antibiotics and wound care for device-related infection in patients with left ventricular assist device. *Transplant Proc* 46 (3): 907-10, 2014 doi: 10.1016/j.transproceed.2013.11.106.