

## HEART FAILURE

### Continuous-flow rotary pump LVADs—a good option?

Left ventricular assist devices (LVADs) are often used in patients requiring heart transplantation, either as a nonpermanent management option until a donor heart becomes available, or as a permanent alternative to transplantation. Historically, LVADs have been designed to cyclically fill and empty; however, these pulsatile devices required a large pump, and recipients are likely to need reoperation for device exchange as a result of infection or malfunction. A prospective, multicenter study of the continuous-flow rotary pump HeartMate II® LVAD (Thoratec Corporation, Pleasanton, CA)—which has a smaller pump than the older, pulsatile devices—began enrolment in 2005. Francis Pagani and colleagues have now reported on the first 281 patients who completed the study end points or attended a follow-up assessment 18 months after implantation. Their findings indicate that this new technology

provides effective hemodynamic support over this time period.

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Of the 281 patients included in this analysis, 157 had received a heart transplant, 58 were still on HeartMate II® LVAD support, and 7 had recovered cardiac function and had their LVAD removed. In total, 56 of the patients died and 7 of the deaths were classified as device-related; 4 were caused by malfunction of internal components and 3 by malfunction of external components. No failures in the mechanical pumping mechanism were reported for this patient population. At the time of the assessment,

9 devices had been replaced with another HeartMate II® LVAD and 3 devices had been exchanged for another type of LVAD. For those who had continued on the HeartMate II® LVAD support, overall survival was 82% at 6 months, 73% at 1 year and 72% at 18 months. Substantial improvements in patient function and quality of life were observed after 6 months of LVAD support.

Pagani believes that “the most significant finding [of this study] is the durability and reliability of the device” and, based on comparisons with results from other studies, the authors conclude that the continuous-flow rotary pumps are better than their pulsatile counterparts.

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