**DO NEW STUDIES/DEVICES TIP THE BALANCE TO EARLIER LVAD IMPLANTATION AS DESTINATION THERAPY**?

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The rapidly advancing field of left ventricular assist device (LVAD) use engenders hope that pts with less advanced heart failure might benefit from LVAD implantation. Recent studies provide insight as to whether new management strategies or devices should change our thinking about how ill a pt needs to be to justify LVAD implantation. The PREVENT trial evaluated whether structured clinical practice (implant technique, anticoagulation strategy, and pump speed) could improve HeartMate II outcomes. Adopting all proposed management strategies decreased pump thrombosis (from 8.9% to 1.9%, p<0.01) at 6 months. The MOMENTUM 3 Trial showed that the HeartMate 3 pump reduced reoperations for pump malfunction compared to the HeartMate II (0.7% vs 7.7%, p=0.002) and no pt with HeartMate 3 had suspected or confirmed pump thrombosis. In a subsequent analysis looking specifically at hemocompatibility-related clinical adverse events (HRAEs), survival free of any HRAEs was higher in HeartMate 3 vs HeartMate II patients (hazard ratio 0.62, confidence interval 0.42-0.91). The net hemocompatibility score was also lower in HeartMate 3 pts. In the ENDURANCE trail of the HeartWare vs HeartMate II LVAD, the HeartWare LVAD was non-inferior to the HeartMate II regarding survival free from disabling stroke or device removal for malfunction/failure. Although HeartWare patients had a higher risk of stroke, particularly hemorrhagic stroke, this risk was decreased in patients in whom mean arterial blood pressure was 90 mm Hg or lower. Unfortunately, no studies have shown improvement in gastrointestinal bleeding, right heart failure, or infection, common reasons for readmission following LVAD implantation. The cost-effectiveness of LVADs also needs to be considered. An analysis of Medicare beneficiaries showed that implanting LVADs in less sick, non-inotrope-dependent patients had an unfavorable cost-effectiveness ratio, which could be improved if post LVAD readmission rates decreased. Thus, although the LVAD pumps have improved (fewer pump failures), to justify the use of LVADs in less sick patients, complication rates and readmissions to deal with complications must decrease.