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VENTRICULAR SUPPORT DEVICE THAT REDUCES LEFT VENTRICLE WORKLOAD

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Value Proposition: *Endovascular ventricular device that improves blood flow at lower rotational speed.*

Technology Description

Researchers at Washington University in St. Louis have developed a toroidal endovascular ventricular support device (TEVAD) that is designed to reduce the workload of the left ventricle while improving coronary and systemic perfusion. Currently available endovascular ventricular support devices require a large sheath introducer, necessitating femoral or axillary cutdown and direct cannulation or the use of a graft conduit for placement. These methods only provide partial support, and increase the risk of wound and vascular complications, including thrombosis, occlusion, and limb ischemia.

The TEVAD device has a smaller profile that allows for the reduction of both the outer diameter and the length of the rigid impeller, allowing for safe insertion via the peripheral vasculature system. This minimizes vascular trauma and risks associated with device insertion and positioning in the peripheral vessels and aortic arch, which improves device efficiency, maximizing flow at lower rotational speeds, minimizing blood cavitation, and thereby reducing the risk of hemolysis and thrombosis.

Applications

- Ventricular support

Key Advantages

- Minimal cavitation
- Lover morbidity and mortality
- Smaller introducer size

Patents

Patent application filed

Related Web Links – Mohamed Zayed Profile; Zayed Lab