

Acoustic biomarker for quality of life in LVAD recipients

Value Proposition

Left Ventricular Assist Device (LVAD) users are advanced heart failure patients, primarily in the geriatric population. A study looking at quality of life post LVAD concluded that 7.3% continued to have poor quality of life a year later. This group seeks to improve smooth blood flow through the LVAD pump in order to decrease hospital visits and side effects and increase a patient's quality of life.

Technology

This patent seeks to improve quality of life in patients with an LVAD. This group was able to correlate optimized blood flow through an LVAD with a specific biomarker present in patients who reported a higher quality of life than others. Using this biomarker, they seek to identify patients who will have better outcomes and adjust the LVAD settings to optimize blood flow and decrease risk of side effects such as thrombosis. This biomarker will be measured by an algorithm that could be applied to digital stethoscopes or developed directly with the LVAD.

Advantages

- Identifies patients with optimized LVAD settings
- Helps adjust patient settings and identify the ideal setting
- Minimizes the possibility of thrombus and detrimental side effects of undiagnosed thrombus

Publications

- [Acoustic Signatures of Left Ventricular Assist Device Thrombosis \(The American Society of Mechanical Engineers, 2019\)](#)

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Links

- [From the lab of Dr. Ravi Karra](#)
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