Lake Charles Memorial Health System

Using Echo Surveillance to Identify Aortic Stenosis

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Background

Timely treatment of severe symptomatic aortic stenosis (AS) patients is essential to prevent decompensation and mortality (1). Despite expanded approval for Aortic Valve Replacement (AVR) throughout the years, studies have demonstrated that undertreatment of severe symptomatic AS is still occurring. Potential factors include patient and/or provider beliefs, lack of knowledge or available resources, and incorrect symptom or AS severity assignment (2,3). Additionally, echocardiograms performed inpatient, in the ER, through mobile services or at outside facilities are additional factors that can impact treatment and delay care. At Lake Charles Memorial Hospital (LCMH), the McKesson echo system was utilized when the Transcatheter Aortic Valve Replacement (TAVR) program began in 2018 to identify severe AS patients based on echo criteria. In 2023, LCMH joined the Target: Aortic Stenosis™ initiative as a pilot site.

Objective

The LCMH TAVR program sought to identify severe AS patients throughout the health system by using echo surveillance to:

- Provide timely treatment for AS patients
- Assist with procedure planning and triage
- Evaluate referral patterns
- Assess opportunities for education and outreach
- Identify barriers and disparities to improve care

In 2024, LCMH sought to automate the echo surveillance process by:

- Leveraging the EMR
- Implementing an alert to notify the ordering provider when severe AS echo criteria is met

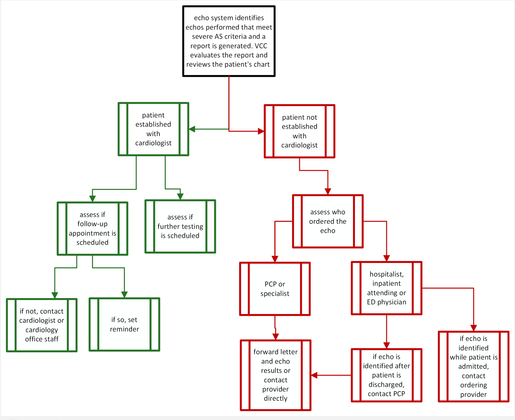

Figure 1

Methods

The TAVR physicians reviewed current guidelines and decided on echo parameters to evaluate patients with D1, D2 and D3 AS. A sonographer received training and built the report within the echo system using the data analytics program (IBM Cognos) within the McKesson echo system. The report is generated automatically monthly to the VCC, who reviews the report and follows the above process map (*Figure 1*). When starting initially, the prior six months of echocardiograms were queried.

Results

Between 2018-2023, 3.5% of echocardiograms performed at LCMH met severe AS criteria based on current guidelines (4). 82% of those patients received AVR, the remainder decided against treatment, relocated or expired *(Figure 2)*. All AVR patients were evaluated by the heart team prior to treatment. The average referral to treatment time for TAVR was 20 days and 14 days for SAVR. Sonography education was been provided and echo reports were regularly reviewed to improve accuracy and reduce variability. Outreach and education was provided to providers throughout the health system and the community. 34% of AVR referrals resulted from contacting providers through the echo surveillance program.

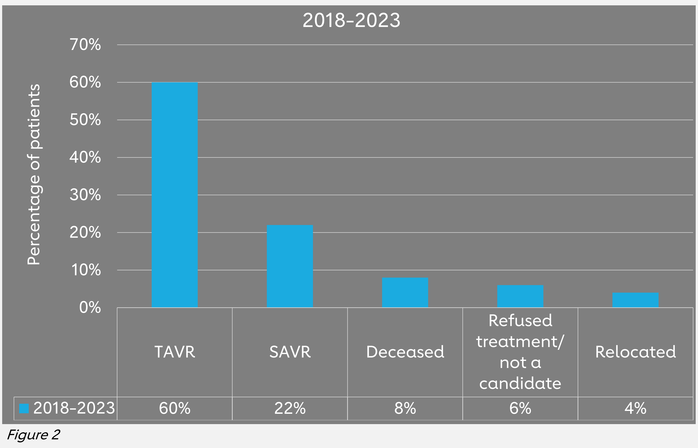

Figure 2

Conclusions

Utilizing echo surveillance is an effective method to identify patients with severe AS to improve timely treatment. Additional effects can include identifying educational and outreach opportunities, assessing barriers in care to expand treatment throughout the community, streamlining processes, and growing a structural heart program. It is essential to have buy-in and support throughout the facility in order to have success with echo surveillance.

References

1. Généreux, P, Sharma, R, et al. The Mortality Burden of Untreated Aortic Stenosis. JACC. 2023;82 (22):2101–2109.
2. Li S, Patel N, et al. Trends in Utilization of Aortic Valve Replacement for Severe Aortic Stenosis. *J Am Coll Cardiol.* 2022, 79 (9) 864–877.
3. Tang L, Gössl M, Ahmed A, et al. Contemporary Reasons and Clinical Outcomes for Patients With Severe, Symptomatic Aortic Stenosis Not Undergoing Aortic Valve Replacement. *Circ Cardiovasc Interv.* 2018 Dec;11(12):e007220.
4. Otto CM, Nishimura RA, et al. 2020 ACC/AHA Guideline for the Management of Patients With Valvular Heart Disease. *J Am Coll Cardiol* 2021;77:e25–e197.