

Significance of Degenerative Aortic Valve Disease and its Impact on Aortic Stenosis

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ABOUT THE STUDY

Decreased cardiac output is a common symptom of the condition aortic stenosis, which if ignored can lead to heart failure and eventually death. The elderly, who frequently have several comorbidities, are the main population affected. We now treat these problems differently thanks to the development of transcatheter aortic valve treatments. The effectiveness of these treatments over the long term is still unknown. The role of both surgical and transcatheter aortic valve replacement has recently been the subject of an increasing number of research. Both approaches to treating aortic stenosis highlighted particular indications as well as potential dangers such structural valve deterioration and valve thrombosis that affect clinical results.

In view of the fact that technical advancements now allow patients with aortic stenosis to choose between surgical and transcatheter therapy, we suggest certain guidelines to aid doctors in their decision-making. In the end, we evaluate how finite element analysis affects the choice of patients for aortic valve replacement. Both THVT and AVR-S are effective weapons against aortic stenosis. The finest evidence base, ideally with a long-term follow-up, should be used to decide between the two treatment strategies. The heart team should do this, keeping the patient at the centre of the conversation. Aortic stenosis, which develops from degenerative aortic valve disease, is a condition that is becoming more common and causes restriction of the left ventricular outflow tract.

Heart failure, which can cause death from cardiovascular causes, reduced cardiac output, impaired exercise capacity, and other effects are brought on by the reduced blood flow through the

valve. Aortic stenosis prevalence varies by age group in the general population. Although the prevalence is only 0.2% in the 50 to 59-year-old adult population, there are more instances (9.8%) in this age group. On the other hand, a study of adults over 75 years old has revealed that the condition has a 2.8% overall prevalence.

Aortic stenosis patients do not have a higher mortality rate. But two years following the development of clinical symptoms, the mortality rate in symptomatic patients is higher than 50%. Aortic valve replacement must be done quickly in order to avoid this negative consequence. In the United States, more than 65,000 patients had surgical aortic valve replacement more than ten years ago, prior to the development of transvalvular therapy, which was documented in the seminal Randomised Clinical Trial (RCT) on the use of Transcatheter Aortic Valve Replacement (TAVR) in inoperable/high-risk patients who cannot undergo Aortic Valve Replacement Surgery (AVR-S). Most of them suffered from significant aortic stenosis.

Despite receiving the finest possible and most effective medical care, practise recommendations of American and European organisations advise considering surgical or percutaneous aortic valve replacement for patients with symptomatic severe aortic stenosis. The long-term advantages of TAVR therapy are yet unknown, hence these guidelines do not specify whether percutaneous or open surgery is recommended for aortic valve stenosis. According to a number of randomised controlled trials, TAVR is not significantly different from routine aortic valve replacement in terms of the death and readmission rates of high-risk surgical patients. SAVR proponents point to improved long-term survival and much lower overall mortality.

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Received: 28-Oct-2022, Manuscript No. JCEC-22-20746; **Editor assigned:** 01-Nov-2022, Pre QC No. JCEC-22-20746 (PQ); **Reviewed:** 17-Nov-2022, QC No. JCEC-22-20746; **Revised:** 24-Nov-2022, Manuscript No. JCEC-22-20746 (R); **Published:** 01-Dec-2022, DOI: 10.35248/2155-9880.22.13.758.

Citation: Berman D (2022) Significance of Degenerative Aortic Valve Disease and its Impact on Aortic Stenosis. *J Clin Exp Cardiol*.13.758.

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