Aortic Valve Stenosis: A Review of the Literature

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Abstract

Aortic valve stenosis is considered one of the common and serious valve disease. This short review intends to explore the Aortic Stenosis (AS) regarding chief symptoms, diagnostic tests, current treatment, and patient's education. The searching was carried out in electronic data bases: Google scholar and PubMed. The chief symptoms of AS may consist of dyspnea and further symptoms of, angina, heart failure and syncope. The past studies have revealed that medical treatment does not considerably influence disease development in AS. Aortic valve replacement (AVR) is the first current treatment for symptomatic, hemodynamically severe AS. Nurses and physicians have a vital function in educating patients.

Keywords: *Aortic Valve Stenosis, Aortic Stenosis (AS), Valve Disease.*

Introduction

Aortic valve stenosis or aortic stenosis (AS) is considered one of the common and serious valve disease. The heart uses the aortic valve to pump blood to whole body. With time, calcium accumulation may narrow the valve opening and limit blood flow to the heart [(1)]. According to statistics, approximately 20 % of older American has AS. It is common in persons above age 65 years, and if untreated, it may result in heart failure and even death [(1)]. It is more probable to affect males than females as about 80% of adults with symptomatic AS are male [(2)]. When the beginning of symptoms, patients with severe AS have a survival rate as low as 50% at 2 years and 20 % at 5 years with no replacement of aortic valve [(2).]

The AS is a slow, progressive illness that start with aortic sclerosis and develop to severe calcific AS. Other less common causes of acquired AS areatherosclerosis, rheumatoid end-stage renal disease, amyloidosis and arthritis. Some features of calcific AS be similar to that of coronary artery diseases (CADs). Both diseases are common in males, older persons, and patients with hypercholesterolemia. The main risk factors related to an increased aortic valve disease are like to that related to atherosclerosis (male gender, increasing age, smoking, hypertension, diabetes mellitus, elevated lipoprotein A, elevated LDL cholesterol, increased creatinine level and serum calcium [(3)].

This review aimed to explore the AS regarding chief symptoms, diagnostic tests, current treatment, and patient's education.

Method

Search Methods: The electronic searching was conducted in a different database: Google Scholar and PubMed. Key search terms used: Aortic valve stenosis, aortic stenosis (AS), and Valve Disease.

The studies that focused on the topic of Aortic valve stenosis, were published in English between 2000 and 2020 were included in the review. While, studies

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published before 2000 were excluded.

Search outcome: Exploring of literature yield about 30 studies for review, after reading the studies about 22 study were excluded and 8 studies met the inclusion criteria.

Discussion

The chief symptoms of AS may consist of dyspnea and further symptoms of, angina, heart failure and syncope. Starting of symptom identifies clinically important stenosis and the necessity for serious intervention. However, some patients with severe aortic stenosis, particularly elder patients cannot develop typical symptoms primarily and as a substitute only experience a decline in exercise tolerance. Others may possibly have a more serious presentation, sometimes with symptoms triggered by coexisting medical conditions or treatments [(4)].

Regarding the diagnostic tests of AS, the Echocardiography is specified to patients with a single second heart sound, a history of a bicuspid aortic valve, loud unexplained systolic murmur, or symptoms that may be caused by AS [(5)]. While, the suggested primary test for patients with assumed AS is Transthoracic echocardiography, this test allows reliable identification of the number of valve leaflets and assessment of valve motion, leaflet calcification and left ventricle (LV) function [(6)]. Serial Doppler echocardiography should be achieved in asymptomatic patients; each three to five years in those with mild AS, each one to two years in those with moderate AS and each six to 12 months in those with severe AS [(6)].

The clinical decision in patients with AS is depend on: the presence or lack of symptoms, severity of aortic valve obstruction and LV response to pressure overload [(6)]. Typical symptoms of AS support by echocardiographic results along with severe stenosis need rapid cardiology consultation [(7)]. The past studies have revealed that medical treatment does not considerably influence disease development in AS [(8,9)]. However, Aortic valve replacement (AVR) is the first current treatment for symptomatic, hemodynamically severe AS; it leads to major progress in survival, typically along with symptom improvement [(10)].

Nurses and physicians have a vital function in educating patients. Patients with mild AS must be educated not be restricted from physical activity. Asymptomatic patients with moderate to severe AS must avoid strong physical activities, while other forms of physical activities are acceptable [(11)]. Since the coexisting of Coronary Artery Disease (CAD) is common among patients with AS, the ACC/AHA guidelines recommend assessment and alteration of cardiac risk factors in these patients [(11),] and this consist of cessation of smoking, start of aspirin prophylaxis in adult patients with a 10-year risk of cardiovascular disease 6 percent or greater, and participation in regular physical exercise [(12)]. Finally, the most importantly, patients should be educated about symptoms and the importance of quickly reporting them to their physician.

Conclusion

The AS is considered one of the common valve diseases. The chief symptoms of AS may consist of dyspnea and further symptoms of, angina, heart failure and syncope. The suggested primary test for patients with assumed AS is Transthoracic echocardiography. The AVR is the first current treatment for symptomatic, hemodynamically severe AS. Patients should be educated about symptoms and the importance of quickly reporting them to their physician.

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