The Heart Health Centre
EDUCATION • PREVENTION INTERVENTION SUPPORT & MANAGEMENT

March 2012

CAYMAN PULSE

A publication of The Heart Health Centre for health care professionals

Aortic Stenosis: Pathophysiology, Symptoms, and New Therapeutic Options

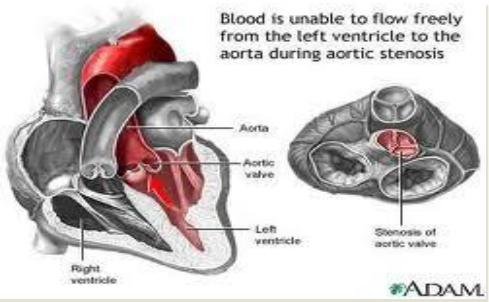
Dr. Adnan Chhatriwalla. MD. FACC

Aortic stenosis (AS) typically arises from one of three causes: 1. a congenitally abnormal (bicuspid or unicuspid) valve with superimposed calcification, 2. rheumatic heart disease, or 3. degenerative calcification of a normal trileaflet valve, typically in elderly patients. AS is a slowly progressive process and leads to adaptive changes in the left ventricle to maintain normal cardiac output. However, as the degree of stenosis becomes more severe, patients may become symptomatic.

There are three classic symptoms of severe AS: angina, syncope and dyspnea (as a result of heart failure). Classically, symptoms of severe AS occur before the onset of left ventricular dysfunction. However, once symptoms occur, the average survival is only 2-3 years, with a high incidence of sudden death, and therefore, prompt therapy is recommended.

On physical examination, the hallmark of AS is a systolic ejection (crescendo-decrescendo) murmur at the right upper sternal border which may radiate to the carotid arteries. As the severity of AS worsens, the murmur may occur later in systole and obscure the second heart sound. A decrease in the intensity and a temporal delay of the carotid pulse may be present (pulsus parvus et tardus). The A2 component of the second heart sound (heard over the right upper sternal border) may also decrease in intensity. Because these physical findings lack sensitivity and specificity, echocardiography remains the gold standard for evaluation of the severity of AS. Echo findings suggestive of severe AS include an aortic valve area < 1.0 cm^2, aortic jet velocity > 4.0 m/s, and a mean valvular gradient > 40 mmHg.

For many years, the standard therapy for symptomatic AS has been surgical aortic valve replacement (AVR). AVR has been shown to both prolong life and improve the quality of life in patients with symptomatic AS. In experienced surgical centers, AVR can be performed safely and successfully even in very elderly patients. However, in recent years, there has been tremendous progress in transcatheter aortic valve replacement (TAVR), with two different TAVR devices approved in Europe and under investigation in the United States. TAVR affords the opportunity to treat a wider spectrum of patients, including those previously felt to be "inoperable" due to age, frailty or co-morbidities. In high-risk patients, TAVR has proven to be as effective as surgical AVR in reducing mortality and in some studies superior to surgical AVR in improving quality of life. Saint Luke's Mid America Heart Institute in Kansas City is one of 20 U.S. centers enrolling patients in the PARTNER studies, which are now evaluating TAVR in lower-risk patients.



Our Physicians

Dr. Mikhail Kosiborod, MD, FACC
Dr. Carlos Rivas-Gotz, MD, FACC
Dr. A. Iain McGhie, MD, FACC
Dr. Ibrahim 'Abe' Saeed, MD, FACC
Dr. Adnan Chhatriwalla, MD, FACC

Our Services

Consultation Services
Diagnostic Testing and Imaging
- Electrocardiogram
- Treadmill Stress Test
- Echocardiogram
- Stress Echocardiogram
- Nuclear Stress Testing (Pharmacological and Exercise)

This Month

March 1st-3rd Dr. Kosiborod
(Stress Echocardiography Available)

March 13th-14th Dr. Rivas-Gotz
(Nuclear Stress Testing & Stress Echocardiography Available)

March 19th-20th Dr. Kosiborod
(Stress Echocardiography Available)

Physical Address:
The Heart Health Centre
West Shore Center
508 West Bay Road
Tel: (345) 943-5800
Fax: (345) 943-5801

Mailing Address:
The Heart Health Centre
P.O. Box 32148
Grand Cayman KY1-1208
CAYMAN ISLANDS

Connect With Us:
www.hearthealthcayman.com
info@hearthealthcayman.com
www.facebook.com/TheHeartHealthCentre
www.twitter.com/HeartHealthGCM