Severe Aortic Stenosis Diagnosis and Treatment: A General Cardiologist's Guide

Understanding the gender-specific differences in the pathophysiology and diagnosis of aortic stenosis (AS) is crucial for improving female patient outcomes. The presentation and progression of AS can vary significantly between men and women, necessitating tailored diagnostic and treatment approaches. This guide outlines diagnostic considerations for referring and diagnosing female patients for either surgical aortic valve replacement (SAVR) or transcather aortic valve implantation (TAVI).

Table 1. Epidemiological, pathophysiological, and diagnostic peculiarities in female patients affected by AS[1]

Valvular pathophysiology	↑ Valvular fibrosis ↓ Aortic valve calcification	**Clinical presentation**	↑ Dizziness ↑ Fatigue ↑ Shortness of breath
Ventricular pathophysiology	↑ Concentric hypertrophy ↑ Wall thickness and left ventricular ejection fraction ↓ Left ventricular cavities ↓ Extent of ventricular fibrosis	**Echocardiography**	↑ Left ventricular concentric remodelling ↑ Paradoxical low-flow, low-gradient AS
Anatomical features	↑ Concomitant valve disease ↓ Aortic annuli/roots	**Multidetector computed tomography**	↓ Coronary take-off ↓ Aortic valve calcium threshold for severe AS ↓ Ileo-femoral vessels and body surface area

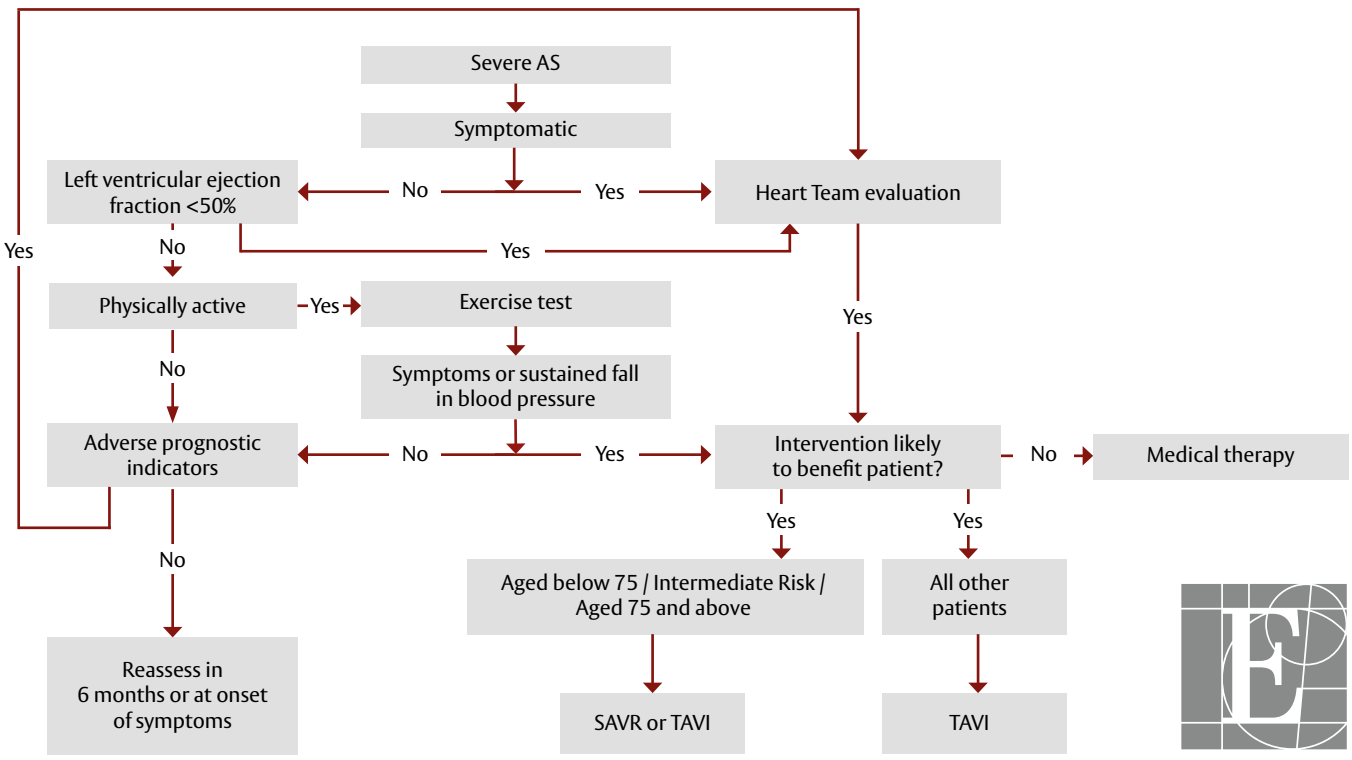

Figure 1. Management of patients with severe AS[2]

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Pre-procedural screening

Transthoracic echocardiography

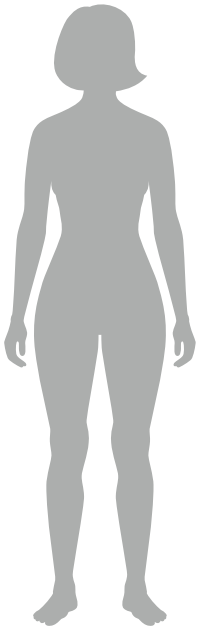
Multidetector computed tomography (Electrocardiogram gated-acquisition, 3D-reconstruction)

Device selection

Small anatomic root

Low coronary ostia

Small sheath-to-femoral artery ratio



Peri-procedural considerations

Risk of vascular complications

Risk of left ventricular perforation

Risk of acute coronary occlusion/ Aortic annular rupture

Lifetime management strategy

Post-procedural management

Short hospital stay

Figure 2. Key components for optimal patient outcomes: early and accurate diagnosis, timely referrals, interdisciplinary collaboration, and patient-centered care[1]

Summary

Early and accurate diagnosis: Utilise sex-specific thresholds and consider symptomatic differences in women to ensure accurate diagnosis.

Timely referrals: Avoid delays in referring patients to heart specialists when severe AS is suspected, particularly in high-risk groups.

Interdisciplinary collaboration: Engage with Heart Teams early in the diagnosis process to facilitate comprehensive care planning.

Patient-centred care: Discuss all available treatment options, including SAVR and TAVI, with a focus on patient preferences and risk profiles.

References

1. Masiero G, Paradies V, Franzone A, *et al*. Sex-specific considerations in degenerative aortic stenosis for female-tailored transfemoral aortic valve implantation management. *J Am Heart Assoc*. 2022; **11:** e025944.
2. Vahanian A, Beyersdorf F, Praz F, *et al*. 2021 ESC/ EACTS guidelines for the management of valvular heart disease. *Eur Heart J*. 2022; **43:** 561-632.

Scan the QR code to learn more about bridging the gender gap in AS.

Timely referral is crucial – guide your female patients with severe AS to a Heart Team evaluation.

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