The New Aortic Valve Guidelines Update

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No Relationships to Disclose
In decisions regarding type of aortic valve intervention (SAVR vs TAVR) in symptomatic patients with AS, which of the following is NOT a Class I recommendation in the 2017 ACC/AHA Guidelines Update?

- Evaluation by a Heart Team
- TAVR for patients with prohibitive surgical risk and life expectancy >12 months
- TAVR or SAVR for patients at high surgical risk
- TAVR or SAVR for patients at intermediate surgical risk
- Surgical AVR for patients at low surgical risk
CLINICAL PRACTICE GUIDELINE: FOCUSED UPDATE

2017 AHA/ACC Focused Update of the 2014 AHA/ACC Guideline for the Management of Patients With Valvular Heart Disease

A Report of the American College of Cardiology/American Heart Association

Task Force on Clinical Practice Guidelines

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2017 ESC/EACTS Guidelines for the management of valvular heart disease

The Task Force for the Management of Valvular Heart Disease of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS)

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www.esc.org
www.acc.org
www.americanheart.org
www.northwesternmedicine.org
Indications for AVR

• Symptomatic patients with severe AS 

...if it is likely that the symptoms are cardiac in origin
Management challenges:

- Asymptomatic severe AS
- Low-flow, low gradient severe AS
- Indications for TAVR
Aortic Stenosis

Management challenges:

• Asymptomatic severe AS
• Low-flow, low gradient severe AS
• Indications for TAVR
Indications for valve replacement

**Exercise test results:**
- Symptoms (class I)
- Hypotension (class IIa)

How are **symptoms** determined?
- Everyone has symptoms on stress test
- Are the symptoms cardiac in origin?
- What level of exercise?

How is **hypotension** defined?
- Less than 20 mmHg increase (?)
Aortic Stenosis

Indications for valve replacement

Exercise test results:

- Symptoms [class I]
- Hypotension [class IIa]

Should *asymptomatic* patients with severe AS undergo AVR? …when they are *really* asymptomatic?
Asymptomatic Aortic Stenosis

Indications for valve replacement:

- Very severe AS: $V_{\text{max}} \geq 5 \text{ m/s}$

class IIa
Asymptomatic Aortic Stenosis

Indications for valve replacement:

- Very severe AS: $V_{\text{max}} \geq 5\, \text{m/s}$
- Rapid progression and low surgical risk

- class IIa
- class IIb
Asymptomatic Aortic Stenosis

Indications for valve replacement:

- Very severe AS: Vmax ≥ 5 m/s  
  - class IIa

- Rapid progression and low surgical risk  
  - class IIb

- Very severe AS: Vmax > 5.5 m/s  
  - class IIa
Asymptomatic Aortic Stenosis

Indications for valve replacement:

- **class IIa**
  - Very severe AS: 
    - $V_{\text{max}} \geq 5 \text{ m/s}$

- **class IIb**
  - Rapid progression and low surgical risk

- **class IIa**
  - Very severe AS: 
    - $V_{\text{max}} > 5.5 \text{ m/s}$
  - Severe valve calcification and rapid progression
Asymptomatic Aortic Stenosis

Indications for valve replacement:

- Very severe AS: $V_{\text{max}} \geq 5$ m/s
  - class IIa
- Rapid progression and low surgical risk
  - class IIb
- Very severe AS: $V_{\text{max}} > 5.5$ m/s
  - Severe valve calcification and rapid progression
  - Markedly elevated BNP >3x age/sex normal limit
  - class IIa
## Asymptomatic Aortic Stenosis

### Indications for valve replacement:

<table>
<thead>
<tr>
<th>Class</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IIa</strong></td>
<td>Very severe AS: (V_{\text{max}} \geq 5, \text{m/s})</td>
</tr>
<tr>
<td><strong>IIb</strong></td>
<td>Rapid progression and low surgical risk</td>
</tr>
<tr>
<td><strong>IIa</strong></td>
<td>Very severe AS: (V_{\text{max}} &gt; 5.5, \text{m/s})</td>
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<tr>
<td></td>
<td>Severe valve calcification and rapid progression</td>
</tr>
<tr>
<td></td>
<td>Markedly elevated BNP (&gt;3\times \text{age/sex normal limit})</td>
</tr>
<tr>
<td></td>
<td>Pulmonary hypertension (&gt;60, \text{mmHg at rest})</td>
</tr>
</tbody>
</table>
Asymptomatic Aortic Stenosis

Indications for valve replacement:

The ACC/AHA and ESC/EACTS guidelines have lowered the threshold for surgery in asymptomatic patients with AS

- Severity of AS
- Severity of calcification
- Left ventricular function
- Exercise response
Asymptomatic Aortic Stenosis

Indications for valve replacement:

The ACC/AHA and ESC/EACTS guidelines have lowered the threshold for surgery in asymptomatic patients with AS

- Severity of AS
- Severity of calcification
- Left ventricular function
- Exercise response
- BNP?
Management challenges:

- Asymptomatic severe AS
- Low-flow, low gradient severe AS
- Indications for TAVR
Low Flow, Low Gradient Aortic Stenosis

Indications for valve replacement:

**Reduced EF:**
- Dobutamine study showing:
  - $V_{\text{max}} > 4 \text{ m/s}$ or
  - Mean $\Delta > 40 \text{ mmHg}$ or
  - $AVA \leq 1 \text{ sq cm}$

**Reduced EF:**
- With contractile reserve

class Ia

class I
Low Flow, Low Gradient Aortic Stenosis

Indications for valve replacement:

**Reduced EF:**
- Dobutamine study showing:
  - $V_{\text{max}} > 4 \text{ m/s}$ or
  - Mean $\Delta > 40 \text{ mmHg}$ or
  - $AVA \leq 1 \text{ sq cm}$

**Normal EF:**
- Only if clinical, anatomic and hemodynamic data support severe AS

**Reduced EF:**
- With contractile reserve

- Class Ila
- Class Ila
- Class I
Low Flow, Low Gradient Aortic Stenosis

Indications for valve replacement:

**Reduced EF:**
- Dobutamine study showing:
  - Vmax > 4 m/s or
  - Mean Δ > 40 mmHg or
  - AVA ≤ 1 sq cm

**Normal EF:**
- Only if clinical, anatomic and hemodynamic data support severe AS

---

**Reduced EF:**
- With contractile reserve

**Normal EF:**
- Only after careful confirmation of severe AS
Aortic Stenosis

Management challenges:

• Asymptomatic severe AS
• Low-flow, low gradient severe AS
• Indications for TAVR
Indications for TAVR vs surgical AVR:

- Evaluation by a Heart Team (class I)
Indications for TAVR vs surgical AVR:

- Evaluation by a Heart Team  
- Surgical AVR for patients at low surgical risk
Indications for TAVR vs surgical AVR:

- Evaluation by a Heart Team
  - class I

- Surgical AVR for patients at low surgical risk
  - class I

- TAVR for patients with prohibitive surgical risk and life expectancy >12 months
  - class I
Indications for TAVR vs surgical AVR:

- Evaluation by a Heart Team (class I)
- Surgical AVR for patients at low surgical risk (class I)
- TAVR for patients with prohibitive surgical risk and life expectancy >12 months (class I)
- TAVR or SAVR for patients at high surgical risk (class I)

New 2017
Indications for TAVR vs surgical AVR:

- Evaluation by a Heart Team  
  - class I
- Surgical AVR for patients at low surgical risk  
  - class I
- TAVR for patients with prohibitive surgical risk and life expectancy >12 months  
  - class I
- TAVR or SAVR for patients at high surgical risk  
  - class I
- TAVR or SAVR for patients at intermediate surgical risk  
  - ACC/AHA class IIa
  - ESC/EACTS class I
TAVR 2017

• TAVR has been truly transformative
• Surgical AVR remains the standard with proven durability and safety for most patients
• TAVR provides treatment options for patients who previously had no options other than a predictably very poor short term outcome
• TAVR is an alternative to SAVR in patients at high and intermediate surgical risk
• The threshold for TAVR is declining in clinical trials, registries and clinical practice
• Multidisciplinary heart team is essential
• All patients want this
• Determining when to withhold TAVR is difficult