

# 2021 Essential Messages from ESC Guidelines

Clinical Practice  
Guidelines Committee

## Valvular Heart Disease

Guidelines for the management of  
valvular heart disease



**ESC**

European Society  
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# Essential Messages

## 2021 Essential Messages from the ESC/EACTS Guidelines for the management of valvular heart disease\*

Developed by 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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Associations: *Association for Acute CardioVascular Care (ACVC), European Association of Cardiovascular Imaging (EACVI), European Association of Percutaneous Cardiovascular Interventions (EAPCI), European Heart Rhythm Association (EHRA), Heart Failure Association (HFA).*

Councils: *Council on Valvular Heart Disease.*

Working Groups: *Cardiovascular Surgery, Thrombosis.*

Patient Forum

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# ESSENTIAL MESSAGES FROM THE 2021 ESC/EACTS GUIDELINES FOR THE MANAGEMENT OF VALVULAR HEART DISEASE

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# Key messages

## General comments

1. Precise evaluation of the patient's history and symptomatic status, as well as proper physical examination, are crucial for the diagnosis and management of VHD.
2. Echocardiography is the key technique to diagnose VHD and assess its severity and prognosis. Other non-invasive investigations such as CMR, CCT, fluoroscopy, and biomarkers provide important additional information in selected patients. Stress testing should be widely used in asymptomatic patients. Invasive investigation, beyond preoperative coronary angiography, is restricted to situations where non-invasive evaluation is inconclusive.
3. Decision making in elderly patients requires the integration of multiple parameters, including estimation of life expectancy and anticipated quality of life, evaluation of comorbidities, and general condition (including frailty).
4. Decision making in asymptomatic patients weighs the risk of intervention against the expected natural history of VHD. Stress testing should be liberally performed.
5. Informed patient's expectations and values are an important part of the decision-making process.
6. Interventions (surgery or transcatheter) are indicated in symptomatic patients (spontaneous or exercise induced) in the absence of futility. In selected asymptomatic patients, presence of predictors of rapid symptom progression justifies early intervention when procedural risk is low.
7. Heart Valve Centres with multidisciplinary Heart Teams, Heart Valve Clinics, comprehensive equipment, and sufficient volumes of procedures are required to deliver high-quality care and provide adequate training.
8. Careful follow-up of symptomatic status, LV/RV size, and function is mandatory in asymptomatic patients with severe VHD if an intervention is not yet indicated.
9. In patients with AF, NOACs are contraindicated in patients with clinically significant mitral stenosis or mechanical valves. For stroke prevention in patients who are eligible for OAC, NOACs are recommended in preference to VKAs in patients with aortic stenosis, aortic and mitral regurgitation, or aortic bioprostheses > 3 months after implantation.

## Aortic regurgitation

10. The evaluation of aortic regurgitation requires careful assessment of potentially associated aortic dilatation to guide the timing and type of surgery. ACE-I/ARNI, beta-blockers, and MRA may be considered in patients with HFmrEF.

### **Aortic stenosis**

11. Diagnosis of severe aortic stenosis requires integrative evaluation of pressure gradients (the most robust measurements), AVA, extent of valve calcification, flow conditions, and LV function.
12. Selection of the most appropriate mode of intervention by the Heart Team should take into account clinical characteristics (age and estimated life expectancy, general condition), anatomical characteristics, the relative risks of SAVR and TAVI, the feasibility of transfemoral TAVI, local experience and outcome data, as well as informed patient preference.

### **Mitral regurgitation**

13. Regarding imaging, routine quantification of EROA is an important part of the integrative evaluation for quantification and risk stratification in patients with PMR. 3D transoesophageal echocardiography is more accurate than 2D echocardiography for defining the underlying mechanism of PMR. CMR is useful when echocardiographic evaluation of severe PMR grade is inconclusive.
14. Surgical mitral valve repair is the preferred method of treatment in PMR if a durable repair can be achieved. TEER is a safe but less efficacious alternative that may be considered in patients with contraindications for surgery or high operative risk.
15. In patients with severe SMR, GDMT (including CRT if indicated) should be the first step. If the patient remains symptomatic: mitral surgery is recommended concomitantly in patients with an indication for CABG or other cardiac surgery. Isolated valve surgery may be considered in selected patients. TEER should be considered in patients not eligible for surgery and fulfilling criteria indicating an increased chance of responding to the treatment. Circulatory support devices, cardiac transplantation, or palliative care should be considered as an alternative in patients with end-stage LV and/or RV failure.

### **Mitral stenosis**

16. PMC is currently the standard of care in patients with severe rheumatic mitral stenosis and favourable valve anatomy.
17. Decision making as to the type of intervention used in patients with unfavourable anatomy is still a matter of debate and must take into account the multifactorial nature of predicting the results of PMC.

### **Tricuspid regurgitation**

18. Relevant tricuspid regurgitation requires early intervention to avoid secondary damage of the RV.
19. Tricuspid regurgitation should be liberally treated at the time of left-sided valve surgery. Isolated surgery of severe secondary tricuspid regurgitation (with or without previous left-sided valve surgery) requires comprehensive assessment of the underlying disease, pulmonary haemodynamics, and RV function.

### **Prosthetic valves**

20. The choice between a mechanical prosthesis and a bioprosthesis should be patient-centred and multifactorial based on patient characteristics, the indication for lifelong anticoagulation, the potential and risks of a re-intervention, and the informed patient preference.
21. Clinical assessment of prosthetic valves should be performed yearly and as soon as possible if new cardiac symptoms occur.

# Main gaps in evidence and areas for future research

## General comments

1. Prognostic value of CMR-derived indices in patients with aortic regurgitation, aortic stenosis, and mitral regurgitation.
2. Tools for risk stratification for the decision for intervention (including the avoidance of futile interventions) and the choice of the type of intervention (TAVI vs. SAVR for aortic stenosis, repair vs. replacement for mitral and aortic regurgitation).
3. In asymptomatic patients with aortic regurgitation, aortic stenosis, and mitral regurgitation, identification and evaluation of earlier markers of LV dysfunction (biomarkers, imaging, multimodality) as well as longitudinal and translational studies on progression.
4. Gender issues regarding pathophysiology, indications, and timing of treatment.
5. Minimum volumes of procedures that are required to achieve optimal results of intervention.
6. Safety and efficacy of NOACs in patients with surgical or transcatheter bioprostheses in the first 3 months after implantation.
7. Patient education for shared decision making and timely evaluation.
8. Systematic epidemiological data addressing the burden of rheumatic heart disease.
9. Advocacy of VHD.

## Aortic regurgitation

10. Potential differences in the risk of aortic complications depending on subtypes of aortic aneurysms (site and morphology), as well as in patients with bicuspid aortic valves.
11. Further evaluation of surgical aortic valve repair.

# Gaps in evidence

## **Aortic stenosis**

12. Pathophysiology of progression and novel therapeutic targets for medical treatment.
13. Further research to evaluate the role of intervention:
  - i. Long-term durability of transcatheter heart valves in comparison with surgical bioprostheses.
  - ii. Role of intervention (SAVR or TAVI) in asymptomatic patients.
  - iii. Role of TAVI in younger low-risk patients, patients with aortic stenosis affecting bicuspid valves, and patients with moderate aortic stenosis and LV impairment.
  - iv. Results of re-intervention (valve or coronary) after TAVI or SAVR.
  - v. The role of revascularization in patients with severe aortic stenosis and asymptomatic concomitant CAD.

## **Mitral regurgitation**

14. Association between PMR and sudden cardiac death and ventricular arrhythmias.
15. Role of genetic testing to mitral valve prolapse.
16. Further evaluation of the role of intervention:
  - i. Long-term results of transcatheter intervention.
  - ii. Indications of transcatheter intervention in patients with severe PMR at lower surgical risk.
  - iii. c. Potential impact of mitral valve intervention (surgery and catheter intervention) on survival in patients with SMR.
  - iv. d. Selection of criteria to identify responders to TEER for SMR (severity criteria, concept of 'disproportionate mitral regurgitation').
  - v. The role of newer transcatheter treatment options (annuloplasty, combined repair techniques, valve replacement).

## **Mitral stenosis**

17. Scores predicting the results and complications of PMC, particularly that of severe mitral regurgitation.
18. Role of transcatheter mitral valve implantation in high-risk patients, particularly in patients with severe degenerative mitral stenosis and MAC.



# Gaps in evidence

## **Tricuspid regurgitation**

19. Quantification of tricuspid regurgitation severity and evaluation of RV function.
20. Further research to evaluate the role of intervention:
  - i. Criteria for optimal timing of surgery in primary tricuspid regurgitation.
  - ii. Evidence on the clinical impact, timing, and treatment modality of isolated severe secondary tricuspid regurgitation.
  - iii. Criteria for concomitant tricuspid valve surgery at the time of left-sided surgery in patients without severe tricuspid regurgitation.
  - iv. Results and indications of transcatheter tricuspid valve treatment.

## **Tricuspid regurgitation**

21. Further evaluation of the impact on outcomes and modalities of transcatheter intervention to better define the indications for intervention.

## **Pregnancy**

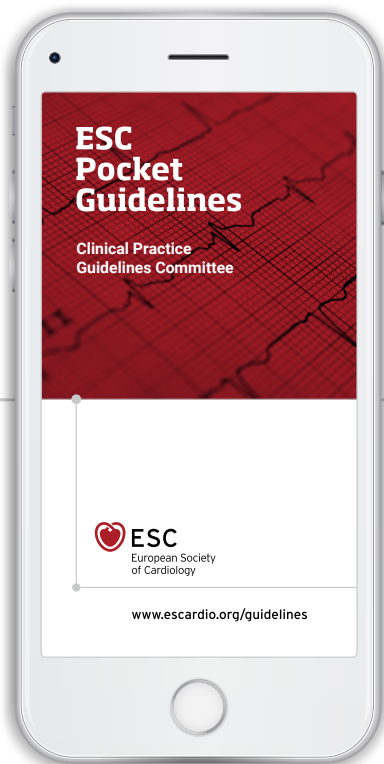
22. Optimal management of pregnant women with MHVs regarding antithrombotic regimens.

## **Non-cardiac surgery**

23. Evaluation of the role of 'urgent TAVI' in the management of patients with severe aortic stenosis undergoing NCS.

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