# IL PAZIENTE FRAGILE IN CARDIOLOGIA

## EPIDEMIOLOGIA DELLA MALATTIA VALVOLARE NEI PAZIENTI ANZIANI ED INDICAZIONI AL TRATTAMENTO

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# EPIDEMIOLOGIA DELLA STENOSI AORTICA NEL PAZIENTE ANZIANO

LA STENOSI AORTICA DEGENERATIVA RAPPRESENTA LA MALATTIA VALVOLARE CARDIACA PIU' FREQUENTE IN EUROPA E NORD AMERICA NEI PAZIENTI CON PIU' DI 65 anni

- LA PREVALENZA della STENOSI AORTICA in soggetti di età >75 anni è di ca 3%, PIU' DI UNA PERSONA SU 8 di età' > di 75 anni HA UNA STENOSI VALVOLARE AORTICA di ENTITA' da MODERATA A SEVERA, la sua prevalenza è di ca l' 8% nei soggetti di età > 80 anni.

- LA STENOSI VALVOLARE AORTICA E' PROGRESSIVA E " LIFE-THREATENING", dall'inizio dei SINTOMI LA PROGNOSI E' INFAUSTA, LA SOPRAVVIVENZA è 50% a 2 anni e 20% a 5 anni

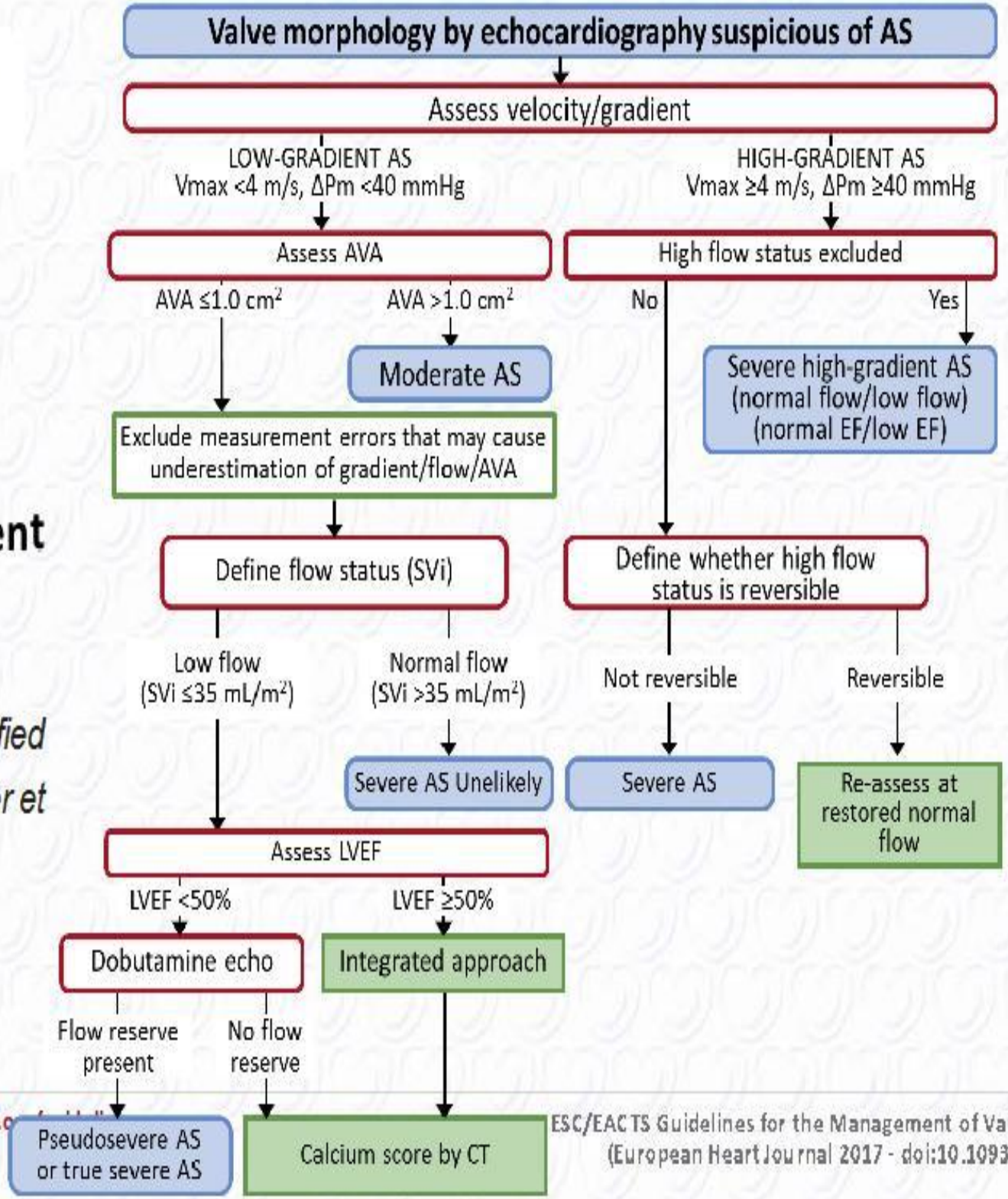
# EPIDEMIOLOGIA DELLA STENOSI AORTICA NEL PAZIENTE ANZIANO

L’IMPATTO EPIDEMIOLOGICO LA RENDE AL CENTRO DI NUMEROSI STUDI VOLTI ad OTTIMIZZARE L’INDICAZIONE AL TRATTAMENTO ED AL MIGLIORAMENTO delle TECNICHE DIAGNOSTICHE E TERAPEUTICHE

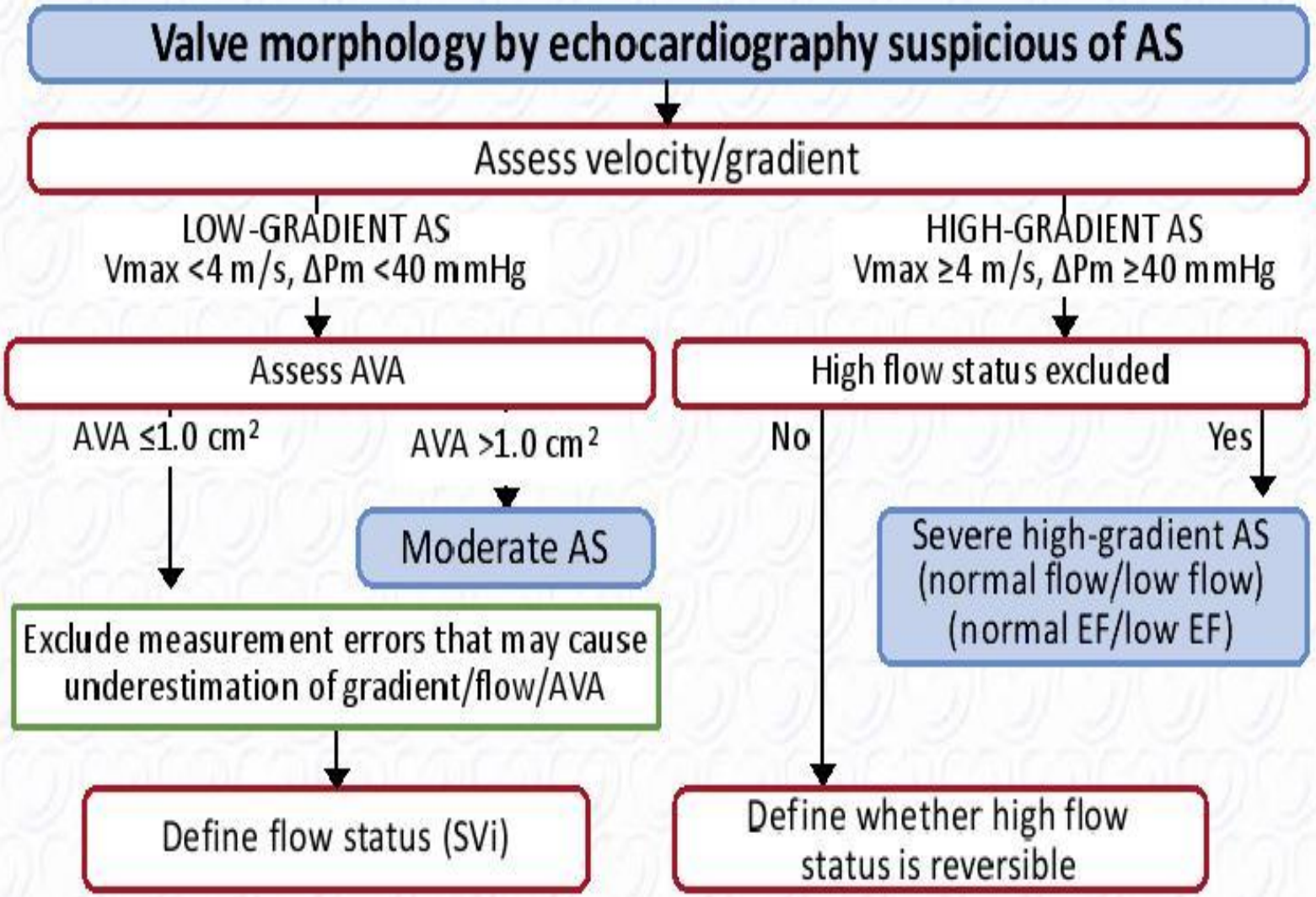
L’UNICO TRATTAMENTO EFFICACE nei PAZIENTI SINTOMATICI( ANGINA, SINCOPE, SCOMPENSO) E’ LA SOSTITUZIONE VALVOLARE .

- L’INTERVENTO è da EFFETTUARSI IL PRIMA POSSIBILE, DOPO LA COMPARSA dei SINTOMI vi è un aumento esponenziale del rischio di morte improvvisa dall’ 1% al 3-4 %, il 7% dei pazienti in attesa di intervento di sostituzione valvolare va incontro a MORTE IMPROVVISA.
- DOPO SOSTITUZIONE VALVOLARE la MORTALITA’ è ca 1-2%, anche nei pazienti di età > di 80 anni, il recupero funzionale è ottimo, la sopravvivenza a 5 anni può arrivare al 60-65%.

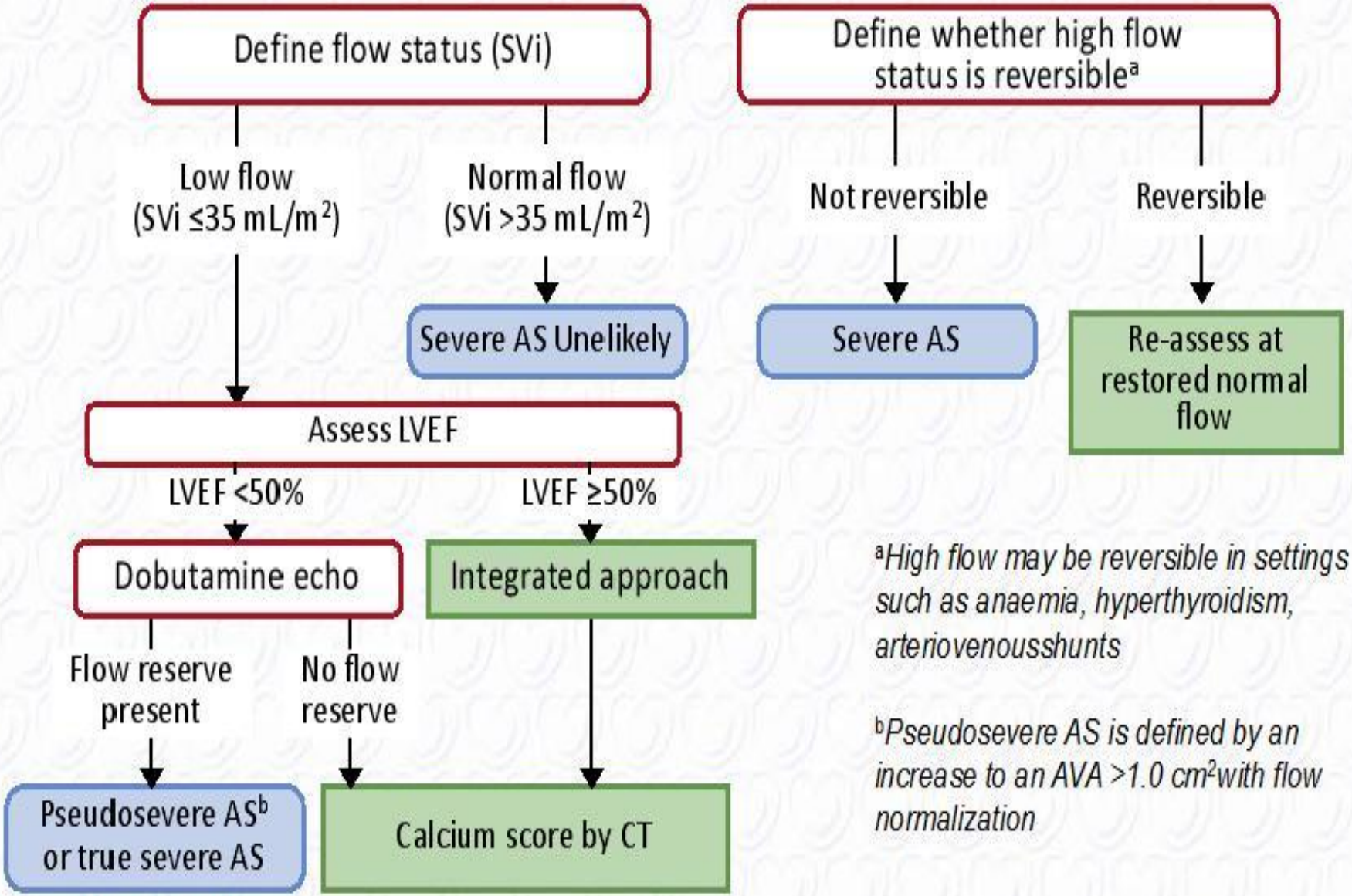
**Stepwise integrated approach for the assessment of aortic stenosis severity** *(Modified from Baumgartner et al.)*



# Stepwise integrated approach for the assessment of aortic stenosis severity *(Modified from Baumgartner et al.)*



# Stepwise integrated approach for the assessment of aortic stenosis severity (continued) - *(Modified from Baumgartner et al.)*



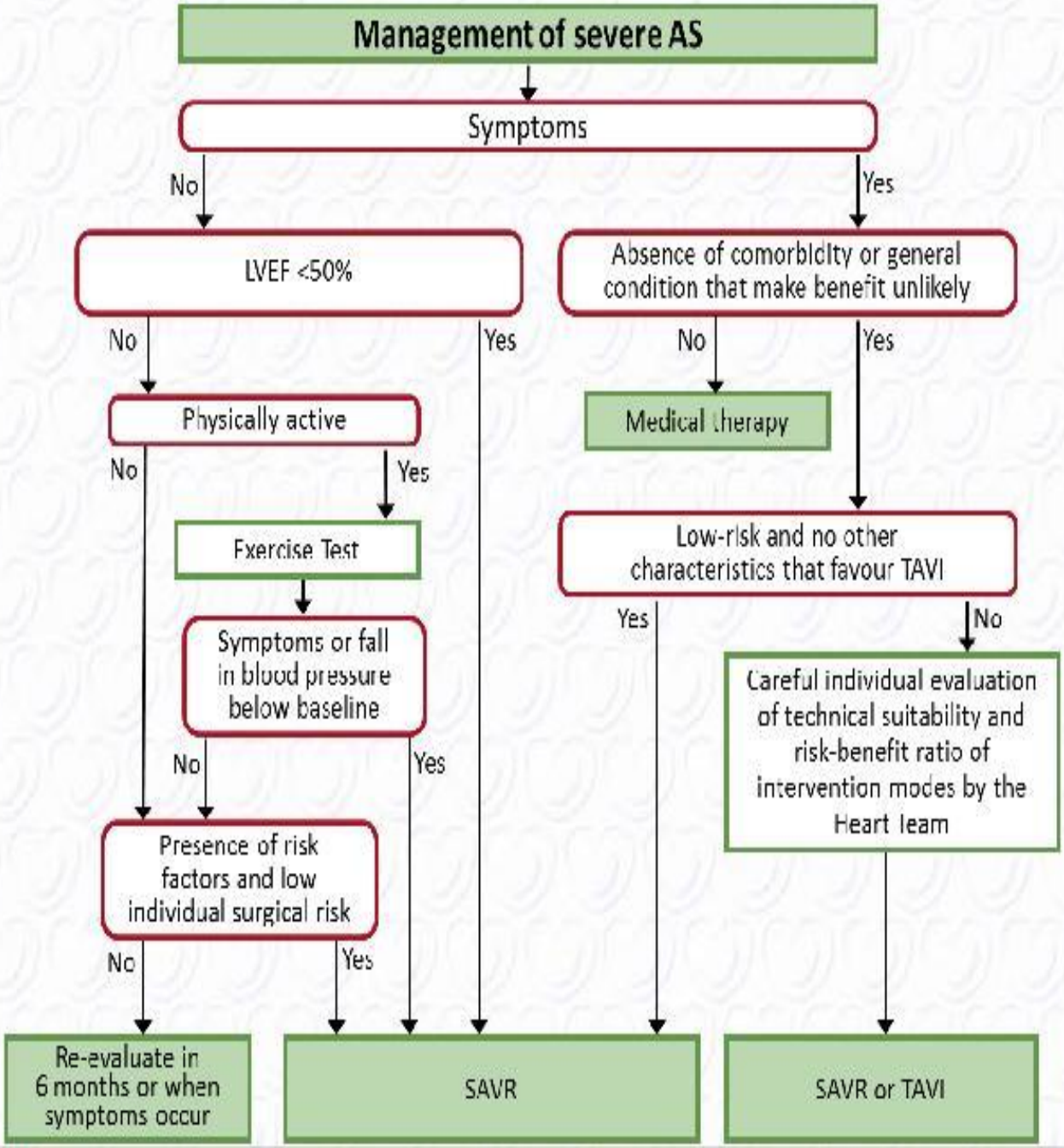

[a] *High flow may be reversible in settings such as anaemia, hyperthyroidism, arteriovenousshunts*

[b] *Pseudosevere AS is defined by an increase to an AVA >1.0 cm² with flow normalization*

# Criteria that increase the likelihood of severe AS in pts. with AVA <1.0 $cm^2$, mean gradient < 40 mmHg and preserved EF

*(Baumgartner et al)*

| Criteria | |
|---|---|
| Clinical criteria | • Typical symptoms without other explanation.<br>• Elderly patient (>70 years). |
| Qualitative imaging data | • LV hypertrophy (additional history of hypertension to be considered).<br>• Reduced LV longitudinal function without other explanation. |
| Quantitative imaging data | • Mean gradient 30–40 mmHg. |
| | • AVA ≤0.8 $cm^2$. |


Management of severe AS
Symptoms
No
Yes
LVEF <50%
Absence of comorbidity or general condition that make benefit unlikely
No
Yes
No
Yes
Physically active
Medical therapy
No
Yes
Exercise Test
Low-risk and no other characteristics that favour TAVI
Yes
No
Symptoms or fall in blood pressure below baseline
Careful individual evaluation of technical suitability and risk-benefit ratio of intervention modes by the Heart Team
No
Yes
Presence of risk factors and low individual surgical risk
No
Yes
Re-evaluate in 6 months or when symptoms occur
SAVR
SAVR or TAVI

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

# Transcatheter Aortic-Valve Replacement with a Balloon-Expandable Valve in Low-Risk Patients

M.J. Mack, M.B. Leon, V.H. Thourani, R. Makkar, S.K. Kodali, M. Russo, S.R. Kapadia, S.C. Malaisrie, D.J. Cohen, P. Pibarot, J. Leipsic, R.T. Hahn, P. Blanke, M.R. Williams, J.M. McCabe, D.L. Brown, V. Babaliaros, S. Goldman, W.Y. Szeto, P. Genereux, A. Pershad, S.J. Pocock, M.C. Alu, J.G. Webb, and C.R. Smith, for the PARTNER 3 Investigators*

# Indications for intervention in aortic stenosis and recommendations for the choice of intervention mode

| Recommendations | Class | Level |
|---|---|---|
| **a) Symptomatic aortic stenosis** | | |
| Intervention is indicated in symptomatic patients with severe, high-gradient aortic stenosis (mean gradient ≥40 mmHg or peak velocity ≥4.0 m/s). | I | B |
| Intervention is indicated in symptomatic patients with severe low-flow, low-gradient (<40 mmHg) aortic stenosis with reduced ejection fraction, and evidence of flow (contractile) reserve excluding pseudo-severe aortic stenosis. | I | C |
| Intervention should be considered in symptomatic patients with low flow, low-gradient (<40 mmHg) aortic stenosis with normal ejection fraction after careful confirmation of severe aortic stenosis. | IIa | C |

# Indications for intervention in aortic stenosis and recommendations for the choice of intervention mode *(continued)*

| Recommendations | Class | Level |
|---|---|---|
| Intervention should be considered in symptomatic patients with low-flow, low-gradient aortic stenosis and reduced ejection fraction without flow (contractile) reserve, particularly when CT calcium scoring confirms severe aortic stenosis. | IIa | C |
| Intervention should not be performed in patients with severe comorbidities when the intervention is unlikely to improve quality of life or survival. | III | C |
| **b) Choice of intervention in symptomatic aortic stenosis** | | |
| Aortic valve interventions should only be performed in centres with both departments of cardiology and cardiac surgery on-site, and with structured collaboration between the two, including a Heart Team (heart valve centres). | I | C |

# Indications for intervention in aortic stenosis and recommendations for the choice of intervention mode *(continued)*

| Recommendations | Class | Level |
|---|---|---|
| The choice for intervention must be based on careful individual evaluation of technical suitability and weighing of risks and benefits of each modality (aspects to be considered are listed in the according table). In addition, the local expertise and outcomes data for the given intervention must be taken into account. | I | C |
| SAVR is recommended in patients at low surgical risk (STS or EuroSCORE II <4% or logistic EuroSCORE I <10% and no other risk factors not included in these scores, such as frailty, porcelain aorta, sequelae of chest radiation). | I | B |
| TAVI is recommended in patients who are not suitable for SAVR as assessed by the Heart Team. | I | B |

# Indications for intervention in aortic stenosis and recommendations for the choice of intervention mode *(continued)*

| Recommendations | Class | Level |
|---|---|---|
| In patients who are at increased surgical risk (STS or EuroSCORE II ≥4% or logistic EuroSCORE I ≥10% or other risk factors not included in these scores such as frailty, porcelain aorta, sequelae of chest radiation), the decision between SAVR and TAVI should be made by the Heart Team according to the individual patient characteristics (see according table), with TAVI being favoured in elderly patients suitable for transfemoral access. | I | B |
| Balloon aortic valvotomy may be considered as a bridge to SAVR or TAVI in haemodynamically unstable patients or in patients with symptomatic severe aortic stenosis who require urgent major non-cardiac surgery. | IIb | C |

# Aspects to be considered by the Heart Team for the decision between SAVR and TAVI in patients at increased surgical risk

| | Favours TAVI | Favours SAVR |
|---|---|---|
| **Clinical characteristics** | | |
| STS/EuroSCORE II <4% (logistic EuroSCORE I<10%) | | + |
| STS/EuroSCORE II ≥4% (logistic EuroSCORE I ≥10%) | + | |
| Presence of severe comorbidity (not adequately reflected by scores) | + | |
| Age <75 years | | + |
| Age ≥75 years | + | |
| Previous cardiac surgery | + | |



2017 ESC/EACTS Guidelines for the Management of Valvular Heart Disease
(European Heart Journal 2017 - doi:10.1093/eurheartj/ehx391)

# Aspects to be considered by the Heart Team for the decision between SAVR and TAVI in patients at increased surgical risk *(continued)*

| | Favours TAVI | Favours SAVR |
|---|---|---|
| **Clinical characteristics *(continued)*** | | |
| Frailty | + | |
| Restricted mobility and conditions that may affect the rehabilitation process after the procedure | + | |
| Suspicion of endocarditis | | + |
| **Anatomical and technical aspects** | | |
| Favourable access for transfemoral TAVI | + | |
| Unfavourable access (any) for TAVI | | + |



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# Aspects to be considered by the Heart Team for the decision between SAVR and TAVI in patients at increased surgical risk *(continued)*

| | Favours TAVI | Favours SAVR |
|---|---|---|
| **Anatomical and technical aspects *(continued)*** | | |
| Sequelae of chest radiation | + | |
| Porcelain aorta | + | |
| Presence of intact coronary bypass grafts at risk when sternotomy is performed | + | |
| Expected patient–prosthesis mismatch | + | |
| Severe chest deformation or scoliosis | + | |
| Short distance between coronary ostia and aortic valve annulus | | + |



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# Indications for intervention in aortic stenosis and recommendations for the choice of intervention mode *(continued)*

| Recommendations | Class | Level |
|---|---|---|
| Balloon aortic valvotomy may be considered as a diagnostic means in patients with severe aortic stenosis and other potential cause for symptoms (i.e. lung disease) and in patients with severe myocardial dysfunction, pre-renal insufficiency or other organ dysfunction that maybe reversible with balloon aortic valvotomy when performed in centres that can escalate to TAVI. | IIb | C |
| **c) Asymptomatic patients with severe aortic stenosis (refers only to patients eligible for surgical valve replacement)** | | |
| SAVR is indicated in asymptomatic patients with severe aortic stenosis and systolic LV dysfunction (LVEF <50%) not due to another cause. | I | C |
| SAVR is indicated in asymptomatic patients with severe aortic stenosis and abnormal exercise test showing symptoms on exercise clearly related to aortic stenosis. | I | C |

# TAKE HOME MESSAGE

- INDIVIDUARE PAZIENTI ANZIANI CON SINTOMI SOSPETTI PER STENOSI AORTICA, O ANCHE, SOFFIO SISTOLICO SOSPETTO ED INVIARLI AD ESECUZIONE DI ECOCARDIOGRAMMA

- INVIARE IL PAZIENTE ANZIANO CON STENOSI AORTICA SEVERA AD UNA VALUTAZIONE DA PARTE DELL'HEART TEAM. LA SOSTITUZIONE VALVOLARE E' L'UNICO TRATTAMENTO EFFICACE.