ΠΑΡΟΥΣΙΑΣΗ ΑΣΘΕΝΩΝ ΟΙ ΟΠΟΙΟΙ ΥΠΕΒΛΗΘΗΣΑΝ ΣΕ TAVR

Δημήτριος Βενέτης

Ειδικευόμενος Β΄ Καρδιολογικής Κλινικής Π.Γ.Ν.Ιωαννίνων

ΣΥΓΚΡΟΥΣΗ ΣΥΜΦΕΡΟΝΤΩΝ

Καμμία

TAVR

- Η διακαθετηριακή αντικατάσταση αορτικής βαλβίδας (Trancatheter Aortic Valve Implantation-TAVI) αποτελεί πλέον μια αποδεκτή εναλλακτική μέθοδο αντιμετώπισης της σοβαρής συμπτωματικής στένωσης αορτικής βαλβίδας σε ασθενείς που κρίνονται *υψηλού κινδύνου για χειρουργική αντιμετώπιση.*

ΠΟΙΟΙ ΑΣΘΕΝΕΙΣ ΕΠΙΛΕΓΟΝΤΑΙ ΓΙΑ TAVR ?

Οι υποψήφιοι ασθενείς προς TAVR πρέπει να πληρούν τρεις βασικές προϋποθέσεις:

1. Σοβαρή συμπτωματική AS που χρήζει αντιμετώπισης

2. Υψηλού ή απαγορευτικά υψηλού χειρουργικού κινδύνου
   - Έως πρόσφατα Euroscore I ≥ 20%
     (Πλέον Euroscore II ≥ 4 % ή και STS Score ≥ 4 %)
   - Ή ασθενείς μη χειρουργήσιμοι (πορσελανοειδής αορτή, σοβαρή ΧΑΠ με FEV1<65%, LIMA, κτλ)

3. Απουσία αντενδείξεων προς TAVI (τεχνική δυνατότητα να γίνει η TAVI, κύρια αγγειακή προσπέλαση, αορτικός δακτύλιος)

ΑΝΤΕΝΔΕΙΞΕΙΣ ΓΙΑ TAVI

Absolute contraindications	Relative contraindications
Absence of a "Heart Team" and no cardiac surgery on the site.	Bicuspid or non-calcified valves.
Appropriateness of TAVI, as an alternative to SAVR, not confirmed by a "Heart Team".	Untreated coronary artery disease requiring revascularization.
Clinical:	Hemodynamic instability.
Estimated life expectancy <1 year. Improvement of quality of life by TAVI unlikely because of comorbidities.Severe primary associated disease of other valves with major contribution to the patient's symptoms that can be treated only by surgery.	LVEF <20%.
Anatomical:	For the transapical approach: severe pulmonary disease, LV apex not accessible.
Inadequate annulus size (<18 mm, >29 mm).	
Thrombus in the left ventricle.	
Active endocarditis.	
Elevated risk of coronary ostium obstruction (asymmetric valve calcification, short distance between annulus and coronary ostium, small aortic sinuses).	
Plaques with mobile thrombi in the ascending aorta, or arch.	
For transfemoral/subclavian approach: inadequate vascular access (vessel size, calcification, tortuosity).	

ΠΕΡΙΠΤΩΣΗ ΑΣΘΕΝΟΥΣ

Δημογραφικά χαρακτηριστικά

Ηλικία : 83 ετών

Φύλλο : άνδρας

Ατομικό αναμνηστικό

1) IHD - CABG (LIMA-LAD, SVG-LCx) - Ef =45%

2) ΧΑΠ υπό εισπνεόμενα σκευάσματα

3) ΧΝΝ σταδίου III

Παράγοντες κινδύνου

πρώην καπνιστής

αρτηριακή υπέρταση

σακχαρώδης διαβήτης

ΧΝΝ σταδίου III (e GFR = 35 ml/min)

Κλινική εικόνα

οξύ πνευμονικό οίδημα (NYHA IV)

στηθάγχη προσπαθείας (CCS 3/4)

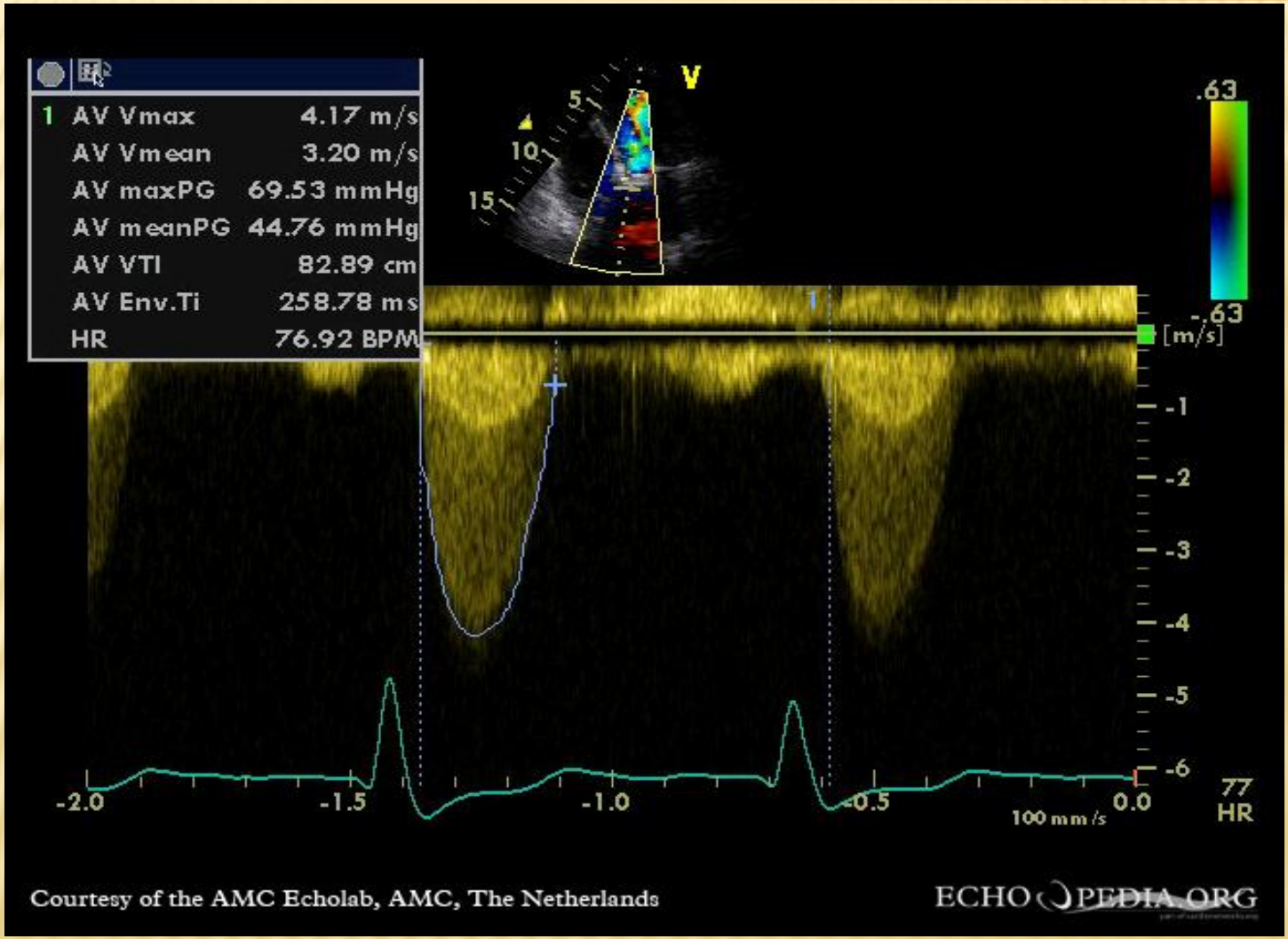
στεφανιογραφία με ικανοποιητική αιμάτωση σε όλα τα τοιχώματα

ΑΚΤΙΝΟΓΡΑΦΙΑ ΘΩΡΑΚΟΣ ΤΕΠ

ΔΙΑΧΕΙΡΙΣΗ ΑΣΘΕΝΟΥΣ

1) Εισαγωγή ΜΕΠΚ – αποκλεισμός ΟΣΣ
2) Χορήγηση οξυγόνου
3) Υποστήριξη αιμοδυναμικών παραμέτρων
4) Διουρητική αγωγή
5) Τιτλοποίηση αγωγής καρδιακής ανεπάρκειας την οποία ήδη ελάμβανε
6) Νεφρολογική εκτίμηση και προετοιμασία για στεφανιογραφικό έλεγχο

ΥΠΕΡΗΧΟΓΡΑΦΙΚΑ ΕΥΡΗΜΑΤΑ



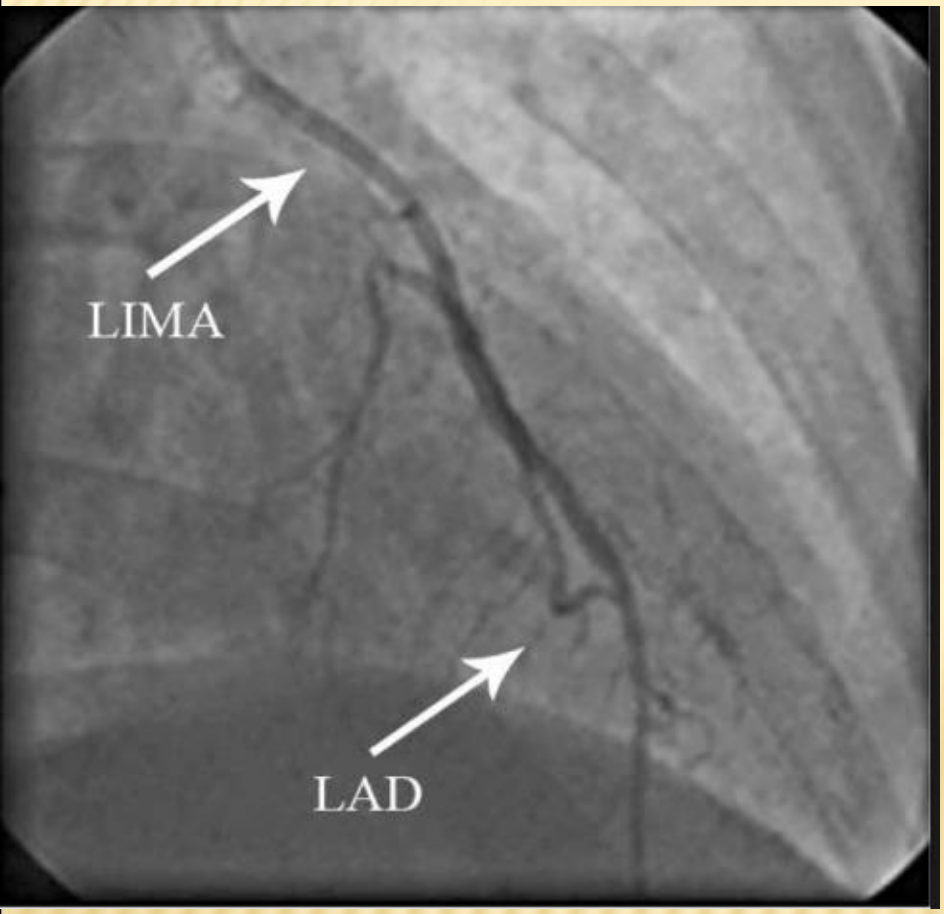
ΥΠΕΡΗΧΟΓΡΑΦΙΚΑ ΕΥΡΗΜΑΤΑ

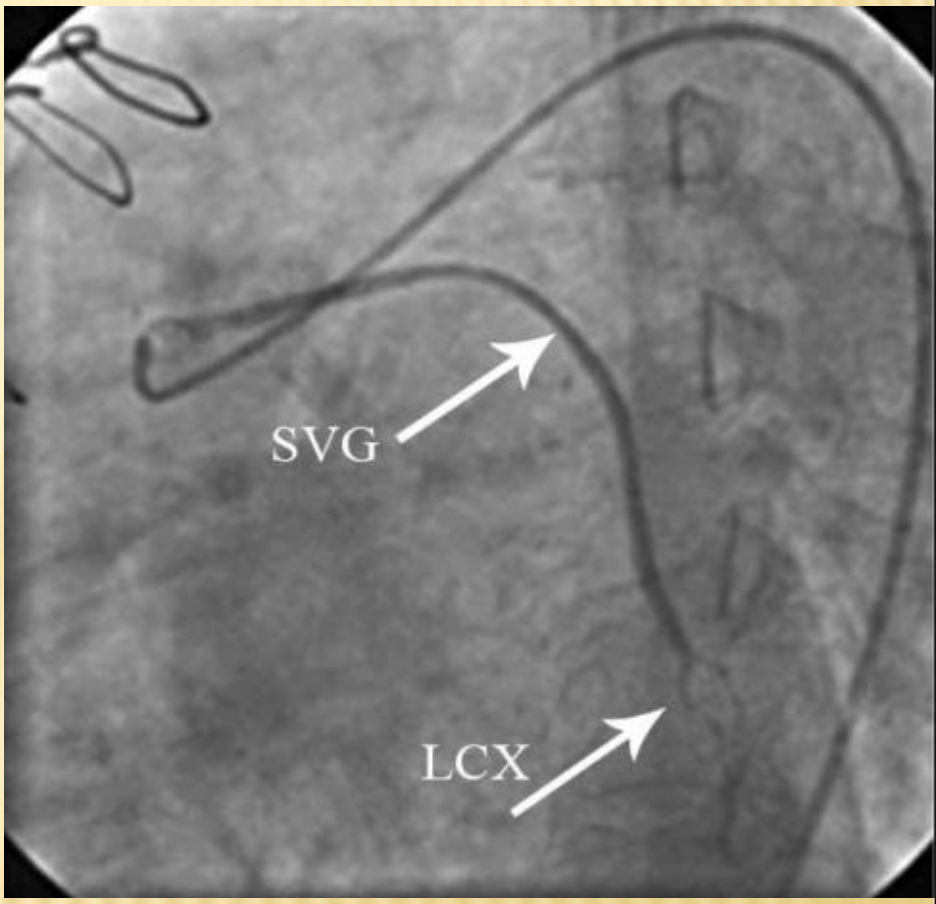
EF= 45 %

AVA = 0.9 cm² - AVAi =0.5 cm²/m²

PASP = 65 mmHg

ΣΤΕΦΑΝΙΟΓΡΑΦΙΚΟΣ ΕΛΕΓΧΟΣ : ΒΑΤΑ ΜΟΣΧΕΥΜΑΤΑ ΚΑΙ RCA

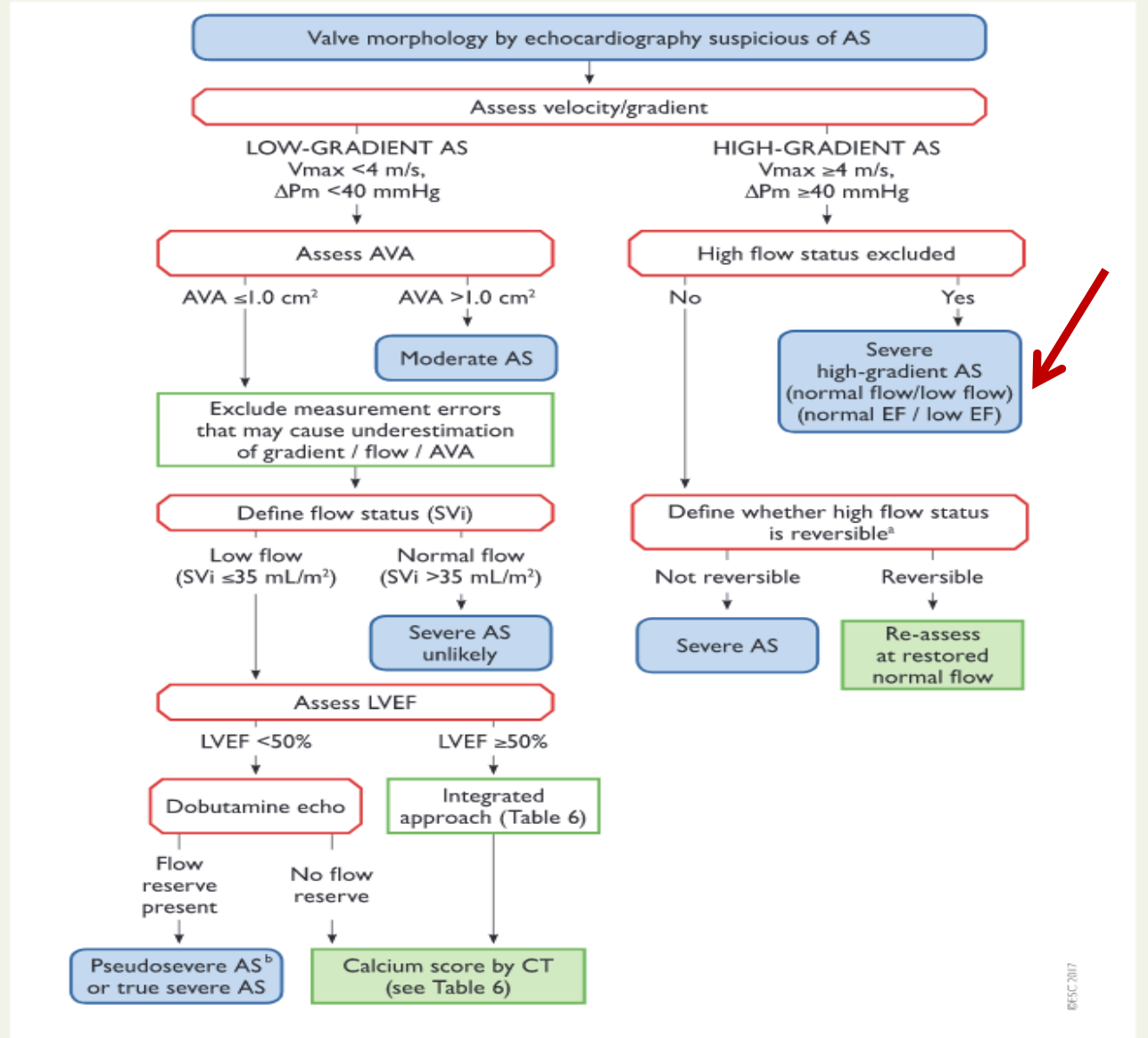




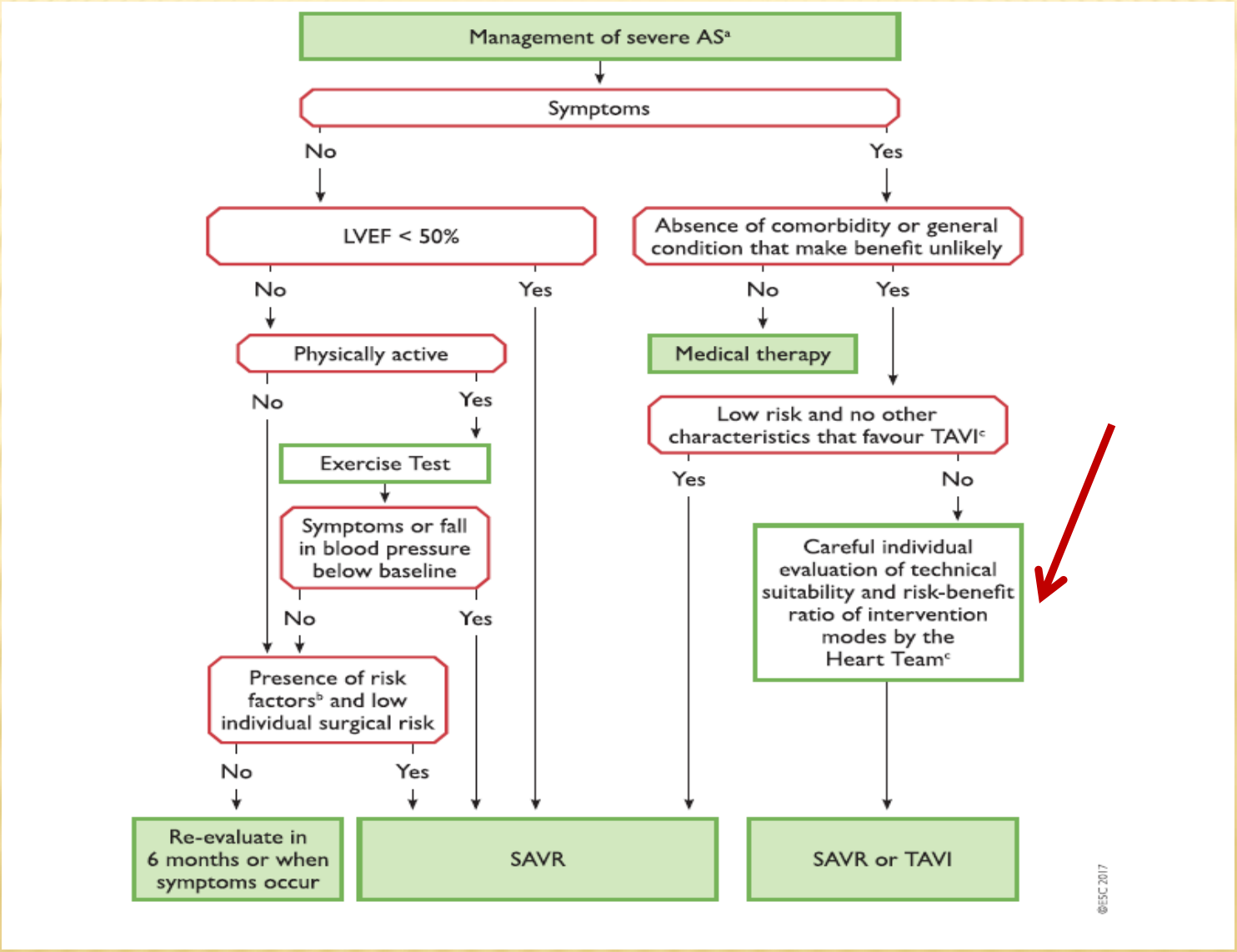
ΕΚΤΙΜΗΣΗ ΧΕΙΡΟΥΡΓΙΚΟΥ ΚΙΝΔΥΝΟΥ

Patient related factors			Cardiac related factors		
Age [1] (years)	83	0.68	NYHA	IV	.5597929
Gender	male	0	CCS class 4 angina [8]	no	0
Renal impairment [2] *See calculator below for creatinine clearance*	severe (CC <50)	.8592256	LV function	moderate (LVEF 31%-50%)	.3150652
Extracardiac arteriopathy [3]	no	0	Recent MI [9]	no	0
Poor mobility [4]	no	0	Pulmonary hypertension [10]	severe (PA systolic >55 mmHg)	.3491475
Previous cardiac surgery	yes	1.118599	**Operation related factors**		
Chronic lung disease [5]	yes	.1886564	Urgency [11]	elective	0
Active endocarditis [6]	no	0	Weight of the intervention [12]	single non CABG	.0062118
Critical preoperative state [7]	no	0	Surgery on thoracic aorta	no	0
Diabetes on insulin	no	0			
EuroSCORE II **EuroSCORE II**	22.38 %				
Note: This is the 2011 EuroSCORE II	Calculate	Clear			

ΥΠΕΡΗΧΟΓΡΑΦΙΚΑ ΚΡΙΤΗΡΙΑ ΥΠΟΨΙΑΣ ΣΟΒΑΡΗΣ AOS



ΔΙΑΧΕΙΡΗΣΗ ΑΣΘΕΝΩΝ ΜΕ ΣΟΒΑΡΗ ΑΟS



ΚΡΙΤΗΡΙΑ ΕΠΙΛΟΓΗΣ ΑΣΘΕΝΩΝ ΓΙΑ TAVR Ή SAVR

	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	→ +	
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		+
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		+
Size of aortic valve annulus out of range for TAVI		+
Aortic root morphology unfavourable for TAVI		+
Valve morphology (bicuspid, degree of calcification, calcification pattern) unfavourable for TAVI		+
Presence of thrombi in aorta or LV		+
Cardiac conditions in addition to aortic stenosis that require consideration for concomitant intervention		
Severe CAD requiring revascularization by CABG		+
Severe primary mitral valve disease, which could be treated surgically		+
Severe tricuspid valve disease		+
Aneurysm of the ascending aorta		+
Septal hypertrophy requiring myectomy		+

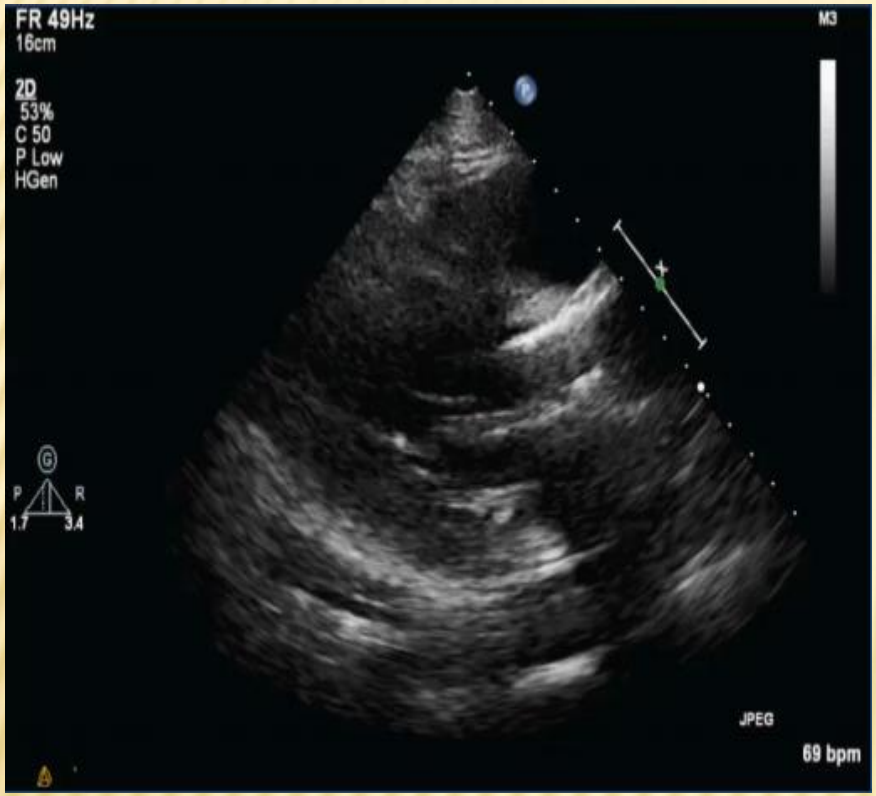
ΕΝΔΕΙΞΕΙΣ ΚΑΙ ΘΕΡΑΠΕΥΤΙΚΗ ΠΡΟΣΕΓΓΙΣΗ

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

A) Symptomatic aortic stenosis	Class[a]	Level[b]
Intervention is indicated in symptomatic patients with severe, high-gradient aortic stenosis (mean gradient ≥40 mmHg or peak velocity ≥4.0 m/s).[91–93]	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 pseudosevere 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[c] (see *Figure 2* and *Table 6*).	IIa	C
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
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 *Table 7*). 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%[d] and no other risk factors not included in these scores, such as frailty, porcelain aorta, sequelae of chest radiation).[93]	I	B
TAVI is recommended in patients who are not suitable for SAVR as assessed by the Heart Team.[91,94]	I	B
In patients who are at increased surgical risk (STS or EuroSCORE II ≥ 4% or logistic EuroSCORE I ≥ 10%[d] 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 *Table 7*), with TAVI being favoured in elderly patients suitable for transfemoral access.[91,94–102]	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
Balloon aortic valvotomy may be considered as a diagnostic means in patients with severe aortic stenosis or other potential causes for symptoms (i.e. lung disease) and in patients with severe myocardial dysfunction, pre-renal insufficiency or other organ dysfunction that may be 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 an abnormal exercise test showing symptoms on exercise clearly related to aortic stenosis.	I	C
SAVR should be considered in asymptomatic patients with severe aortic stenosis and an abnormal exercise test showing a decrease in blood pressure below baseline.	IIa	C
SAVR should be considered in asymptomatic patients with normal ejection fraction and none of the above-mentioned exercise test abnormalities if the surgical risk is low and one of the following findings is present: • Very severe aortic stenosis defined by a V_{max} >5.5 m/s • Severe valve calcification and a rate of V_{max} progression >0.3 m/s/year • Markedly elevated BNP levels (>threefold age- and sex-corrected normal range) confirmed by repeated measurements without other explanations • Severe pulmonary hypertension (systolic pulmonary artery pressure at rest >60 mmHg confirmed by invasive measurement) without other explanation.	IIa	C
D) Concomitant aortic valve surgery at the time of other cardiac/ascending aorta surgery		
SAVR is indicated in patients with severe aortic stenosis undergoing CABG or surgery of the ascending aorta or of another valve.	I	C

ΕΠΕΜΒΑΤΙΚΗ ΠΡΑΞΗ

ΥΠΕΡΗΧΟΓΡΑΦΙΚΟ ΑΠΟΤΕΛΕΣΜΑ



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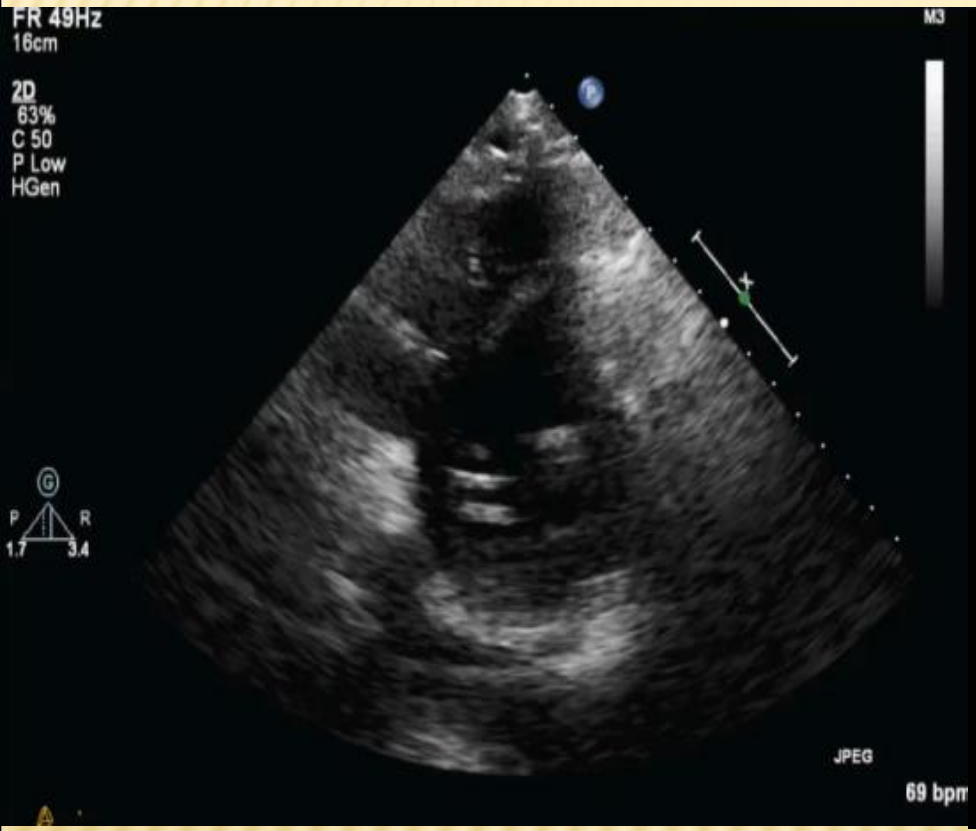
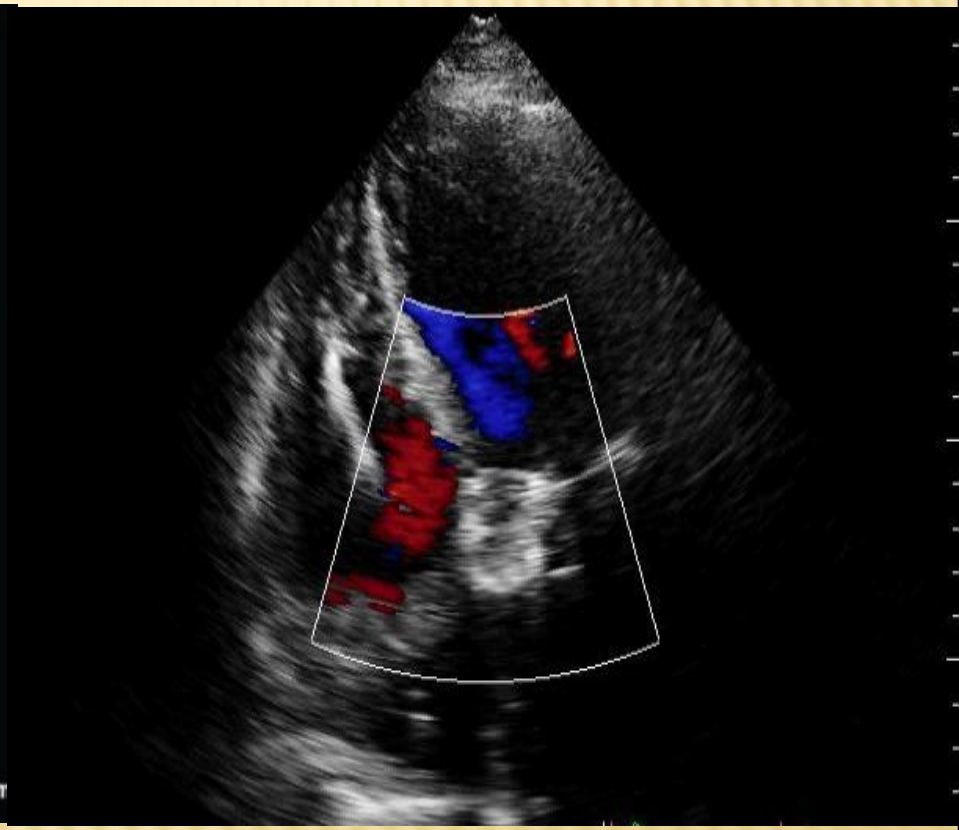




ΠΕΡΙΠΤΩΣΗ ΑΣΘΕΝΟΥΣ

Δημογραφικά χαρακτηριστικά

Ηλικία : 77 ετών

Φύλλο : θήλυ

Ατομικό αναμνηστικό

1) Βιοπροσθετική αορτική βαλβίδα 2005 (σοβαρή AoS)

2) Ca μαστού προ 10 ετίας χ/θεν και ακτ/θεν (ίαση)

3) Ήπια απόφραξη αεραγωγών σε σπιρομέτρηση

Παράγοντες κινδύνου

αρτηριακή υπέρταση

σακχαρώδης διαβήτης υπό δισκία

πρώην καπνίστρια

ακτινοβόληση θώρακος προ 10 ετίας

Κλινική εικόνα

NYHA III και NSVT σε Holter

Ενεργός απώλεια αίματος από το ορθό από εβδομάδος

ΠΟΡΕΙΑ ΝΟΣΟΥ

Ανέφερε αρκετά επεισόδια απώλειας ζωηρού κόκκινου αίματος από το ορθό τις τελευταίες ημέρες για τα οποία εισήχθη, λόγω και της χαμηλής τιμής αιμοσφαιρίνης, στη γαστρεντερολογική κλινική και ακολούθησε κολονοσκόπηση.

Ανέφερε επίσης επεισόδια δύσπνοιας σε μικρό έργο από μηνών χωρίς διερεύνηση.

Την ημέρα της εισαγωγής επεισόδια δύσπνοιας και ζάλης - καρδιολογική εκτίμηση με υπερηχοκαρδιογράφημα και holter ρυθμού.

Λόγω ιστορικού κακοήθειας μαστού, ζητήθηκε ογκολογική εκτίμηση η οποία ανέφερε ότι η ασθενής είναι πλέον ελεύθερη νόσου (παρακολούθηση της ασθενούς στο ογκολογικό τμήμα του νοσοκομείου μας).

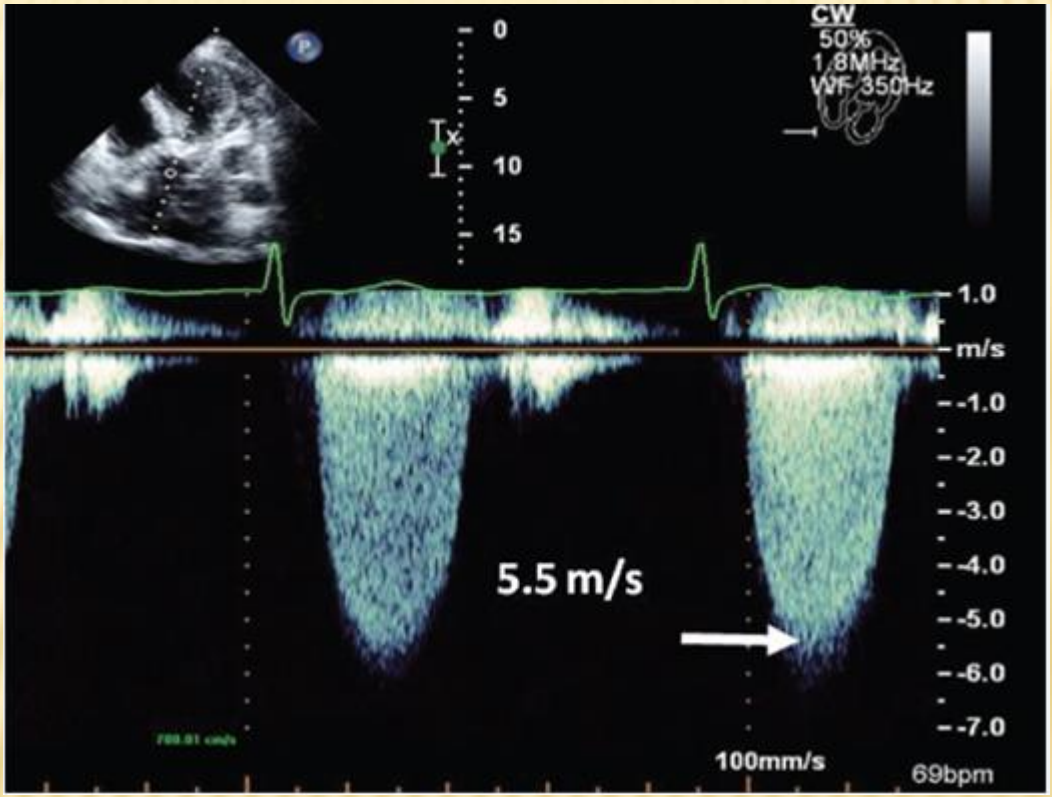
ΕΡΓΑΣΤΗΡΙΑΚΟΣ ΕΛΕΓΧΟΣ ΕΙΣΑΓΩΓΗΣ

HGB	6.7g/dl
WBC	13000/μl
PLT	425000/μl
UREA	97 mg/dl
CREAT	1.4mg/dl
K	4.9 mEq/l
Na	132 mEq/l

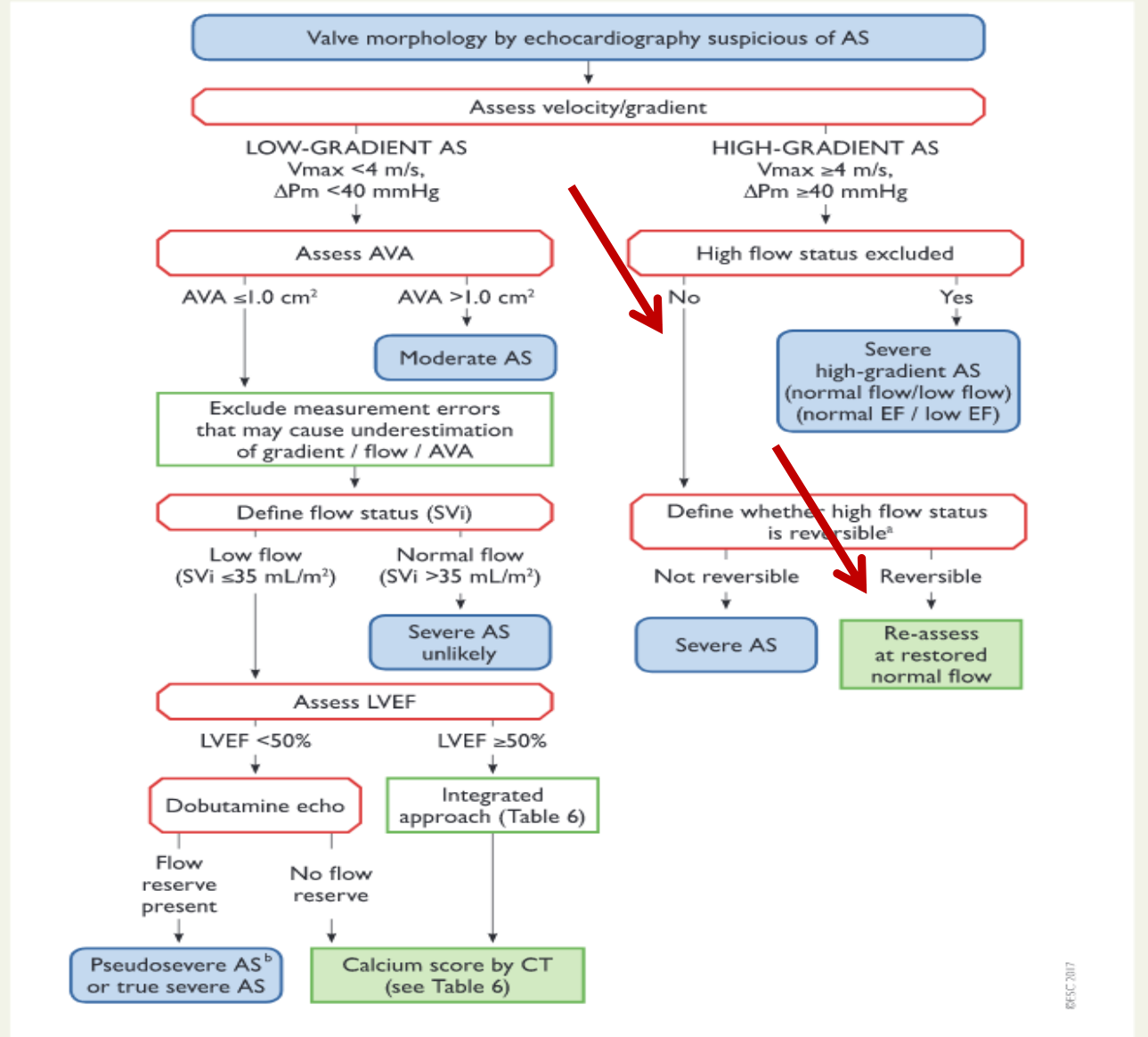
- Αναιμία
- Αγγειοδυσπλασίες παχέος εντέρου

ΚΟΛΟΝΟΣΚΟΠΗΣΗ

ΥΠΕΡΗΧΟΚΑΡΔΙΟΓΡΑΦΗΜΑ



ΥΠΕΡΗΧΟΓΡΑΦΙΚΑ ΚΡΙΤΗΡΙΑ ΥΠΟΨΙΑΣ ΣΟΒΑΡΗΣ AOS



ΠΕΡΑΙΤΕΡΩ ΑΝΤΙΜΕΤΩΠΙΣΗ

- Σύσταση κατ'αρχήν για :

  υποστήριξη των αιμοδυναμικών παραμέτρων

  αντιμετώπιση της αναιμίας - αγγειοδυσπλασιών

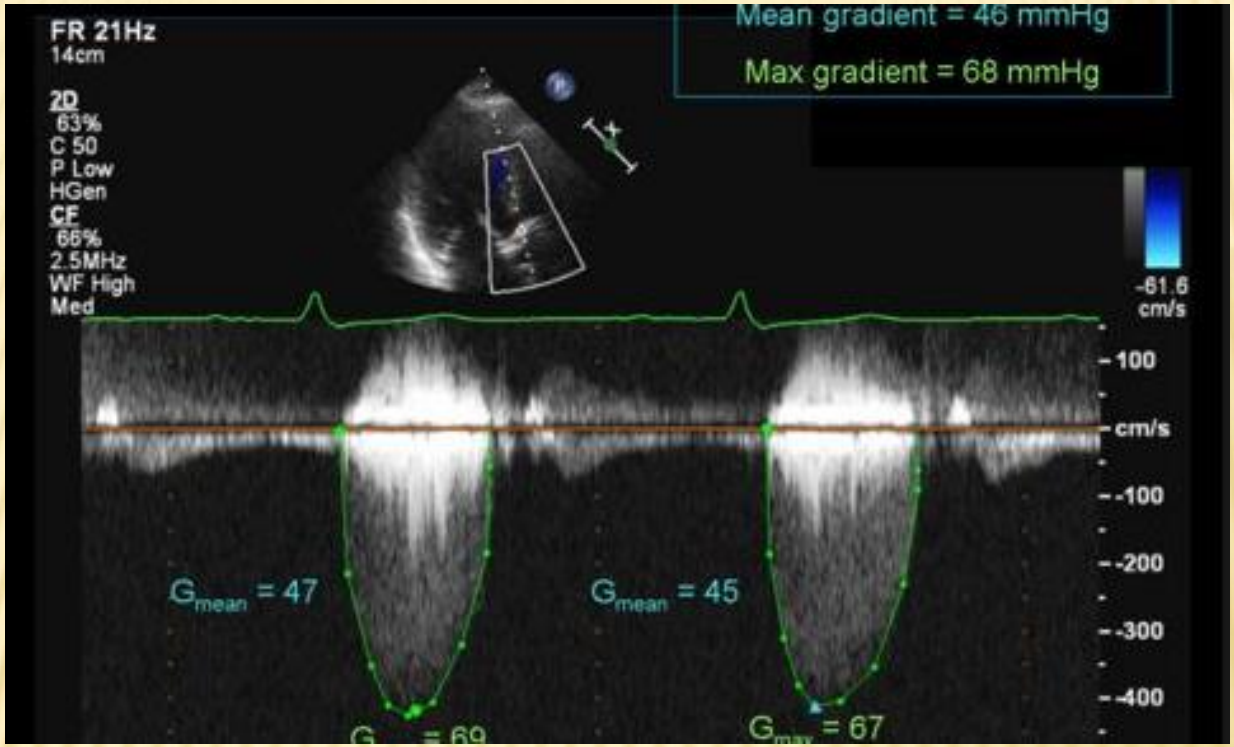
  τοποθέτηση holter ρυθμού

και κατόπιν επανεκτίμηση

Ακολούθησαν :

- Μεταγγίσεις αίματος
- Καυτηριασμός με Argon Plasma Coagulation (APC)
- Λίγες ημέρες αργότερα, αφού η ασθενής σταθεροποιήθηκε και με τιμή HGB = 11 g/dl, διενεργήθηκε νέα υπερηχοκαρδιογραφική μελέτη

ΥΠΕΡΗΧΟΓΡΑΦΙΚΑ ΕΥΡΗΜΑΤΑ



EF = 60 %

AVA = 0.8 cm² - AVAi = 0.5 cm²/m²

PASP = 45 mmHg

ΔΙΑΧΕΙΡΗΣΗ ΑΣΘΕΝΟΥΣ

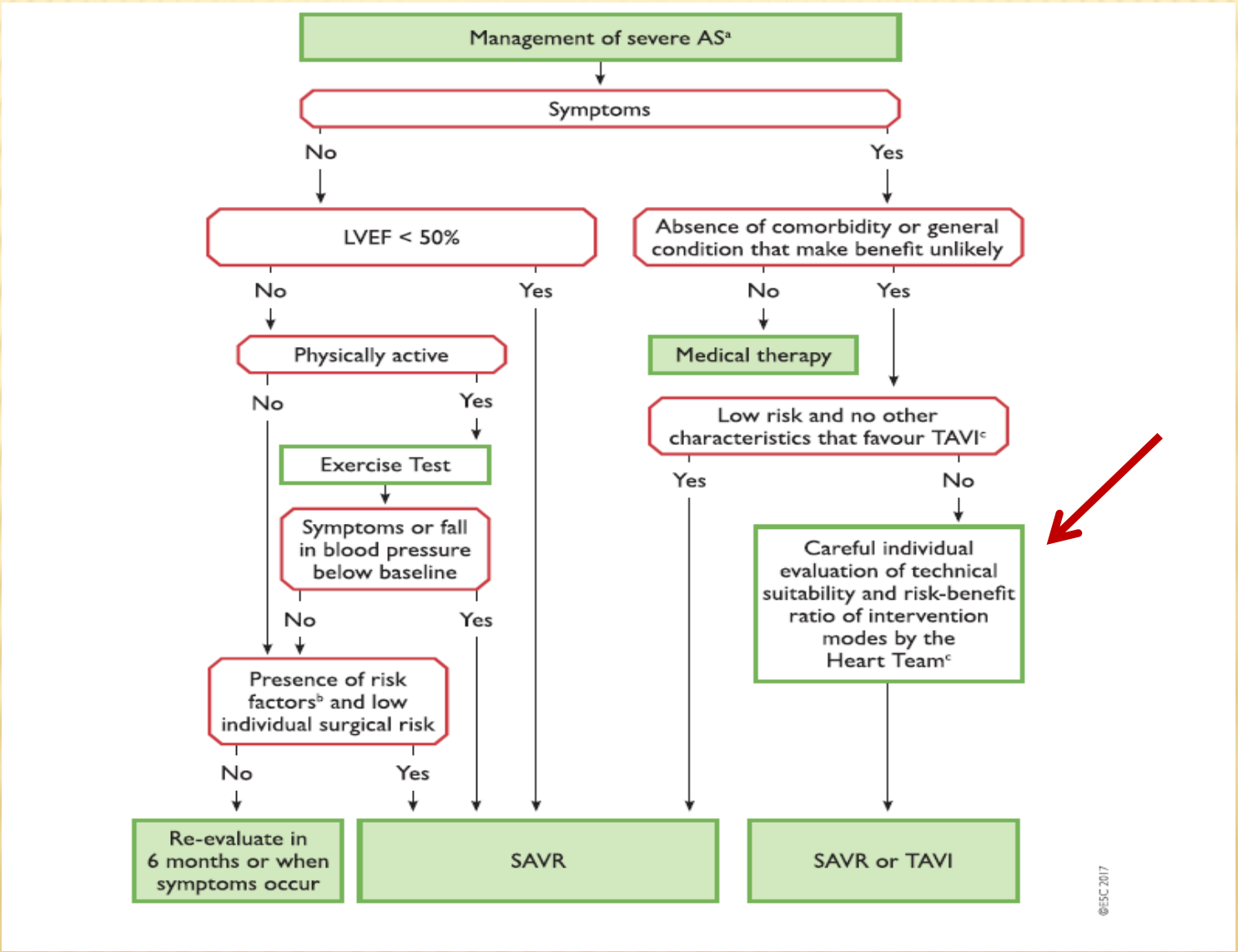
Στεφανιογραφικός έλεγχος ο οποίος ανέδειξε αθηρωματικά στεφανιαία αγγεία χωρίς μείζονες στενώσεις

ΕΚΤΙΜΗΣΗ ΧΕΙΡΟΥΡΓΙΚΟΥ ΚΙΝΔΥΝΟΥ

Important: The previous additive [1] and logistic [2] EuroSCORE models are out of date. A new model has been prepared from fresh data and is launched at the 2011 EACTS meeting in Lisbon. The model is called EuroSCORE II [3] - this online calculator has been updated to use this new model. If you need to calculate the older "additive" or "logistic" EuroSCORE please visit the old calculator by clicking here.

Patient related factors			Cardiac related factors		
Age [1] (years)	77	0.51	NYHA	III	.2958358
Gender	female	.2196434	CCS class 4 angina [8]	no	0
Renal impairment [2] *See calculator below for creatinine clearance*	moderate (CC >50 & <85)	.303553	LV function	good (LVEF > 50%)	0
Extracardiac arteriopathy [3]	no	0	Recent MI [9]	no	0
Poor mobility [4]	no	0	Pulmonary hypertension [10]	moderate (PA systolic 31-55 mmHg)	.1788899
Previous cardiac surgery	yes	1.118599	**Operation related factors**		
Chronic lung disease [5]	yes	.1886564	Urgency [11]	elective	0
Active endocarditis [6]	no	0	Weight of the intervention [12]	single non CABG	.0062118
Critical preoperative state [7]	no	0	Surgery on thoracic aorta	no	0
Diabetes on insulin	no	0			
EuroSCORE II	***Euro*SCORE II**	7.59 %			
	Note: This is the 2011 EuroSCORE II	Calculate Clear			

ΔΙΑΧΕΙΡΗΣΗ ΑΣΘΕΝΩΝ ΜΕ ΣΟΒΑΡΗ ΑΟS



ΘΕΡΑΠΕΥΤΙΚΗ ΠΡΟΣΕΓΓΙΣΗ

- Με βάση κατευθυντήριες οδηγίες → υψηλού χειρουργικού κινδύνου
- Με βάση ελληνικό νόμο → προς χειρουργείο

- Το ΚΕΣΥ απαιτεί για την προέγκριση TAVI

  EUROSCORE I > 20% και όχι 10%

  EUROSCORE II – STS Score > 10% και όχι 4%

Υπ.Απόφαση : Α3γ/οικ.86222/2015

ΦΕΚ 2542/Β/25-11-2015

ΑΠΟΦΑΣΗ ΓΙΑ ΔΙΕΝΕΡΓΕΙΑ ΑΝΟΙΚΤΟΥ ΧΕΙΡΟΥΡΓΕΙΟΥ ΟΜΩΣ !!!

Η αξονική αορτογραφία ανέδειξε πορσελανοειδή αορτή.

ΚΡΙΤΗΡΙΑ ΕΠΙΛΟΓΗΣ ΑΣΘΕΝΩΝ ΓΙΑ TAVR Ή SAVR

	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	+	
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		+
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		+
Size of aortic valve annulus out of range for TAVI		+
Aortic root morphology unfavourable for TAVI		+
Valve morphology (bicuspid, degree of calcification, calcification pattern) unfavourable for TAVI		+
Presence of thrombi in aorta or LV		+
Cardiac conditions in addition to aortic stenosis that require consideration for concomitant intervention		
Severe CAD requiring revascularization by CABG		+
Severe primary mitral valve disease, which could be treated surgically		+
Severe tricuspid valve disease		+
Aneurysm of the ascending aorta		+
Septal hypertrophy requiring myectomy		+

ΕΝΔΕΙΞΕΙΣ ΚΑΙ ΘΕΡΑΠΕΥΤΙΚΗ ΠΡΟΣΕΓΓΙΣΗ

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

	Class[a]	Level[b]
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).[91–93]	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 pseudosevere 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[c] (see *Figure 2* and *Table 6*).	IIa	C
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
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 *Table 7*). 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%[d] and no other risk factors not included in these scores, such as frailty, porcelain aorta, sequelae of chest radiation).[93]	I	B
TAVI is recommended in patients who are not suitable for SAVR as assessed by the Heart Team.[91,94]	I	B
In patients who are at increased surgical risk (STS or EuroSCORE II ≥ 4% or logistic EuroSCORE I ≥ 10%[d] 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 *Table 7*), with TAVI being favoured in elderly patients suitable for transfemoral access.[91,94–102]	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
Balloon aortic valvotomy may be considered as a diagnostic means in patients with severe aortic stenosis or other potential causes for symptoms (i.e. lung disease) and in patients with severe myocardial dysfunction, pre-renal insufficiency or other organ dysfunction that may be 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 an abnormal exercise test showing symptoms on exercise clearly related to aortic stenosis.	I	C
SAVR should be considered in asymptomatic patients with severe aortic stenosis and an abnormal exercise test showing a decrease in blood pressure below baseline.	IIa	C
SAVR should be considered in asymptomatic patients with normal ejection fraction and none of the above-mentioned exercise test abnormalities if the surgical risk is low and one of the following findings is present: • Very severe aortic stenosis defined by a V_{max} >5.5 m/s • Severe valve calcification and a rate of V_{max} progression >0.3 m/s/year • Markedly elevated BNP levels (>threefold age- and sex-corrected normal range) confirmed by repeated measurements without other explanations • Severe pulmonary hypertension (systolic pulmonary artery pressure at rest >60 mmHg confirmed by invasive measurement) without other explanation.	IIa	C
D) Concomitant aortic valve surgery at the time of other cardiac/ascending aorta surgery		
SAVR is indicated in patients with severe aortic stenosis undergoing CABG or surgery of the ascending aorta or of another valve.	I	C

ΕΠΕΜΒΑΤΙΚΗ ΠΡΑΞΗ

Ευχαριστώ για την προσοχή σας