



Was man besser hätte lassen sollen

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Weshalb Fehler wichtig sind

- Lernen aus
 - eigenen Fehlern
 - fremden Fehlern
- Gelesenem
- Gehörtem

Was ist ein Fehler

- Ein Fehler ist die Abweichung eines Zustands oder Vorgangs, der bezüglich der zu erfüllenden Aufgaben festgelegt ist
- kann man auch etwas falsch machen, wenn man alles richtig macht?

Der Klassiker 1

- 93-jähriger Patient, alleinstehend, selbständig, zu Hause lebend, macht noch Gartenarbeit
- In letzter Zeit progrediente Dyspnoe NYHA II-III, kann im Garten nicht mehr arbeiten
- PA: arterielle Hypertonie, St.n. CHE, St.n. HTP links

Der Klassiker 1

- Untersuchung: kardio-pulmonal kompensiert 4/6 Systolicum
- Kre-Clearance 72 ml/min
- Ruhe-EKG: nSR, LL, diffuse T-Abflachung
- TTE: erhaltene LVEF (64%), leichte konzentrische LV-Hypertrophie, schwere Aortenklappenstenose (dp mean 51mmHg, KÖF 0.6cm²)
- Koronarangiographie: leichte Koronarsklerose

Der Klassiker 1

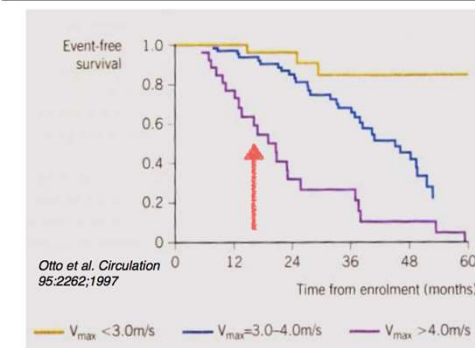
- Und nun ?
- Lebenserwartung Mann-Schweiz gemäss BAS

Entwicklung der Lebenserwartung bei Geburt

	1981	1991	2001	2011	2016
Bei der Geburt					
Männer	72.4	74.1	77.4	80.3	81.5
Frauen	79.2	81.2	83.1	84.7	85.3
Im Alter von 30 Jahren					
Männer	44.5	46.1	48.7	51.1	52.2
Frauen	50.4	52.2	53.8	55.3	55.8
Im Alter von 50 Jahren					
Männer	26.0	27.7	29.9	32.3	32.9
Frauen	31.3	33.1	34.5	35.9	36.3
Im Alter von 65 Jahren					
Männer	14.3	15.6	17.3	19.2	19.8
Frauen	18.2	19.8	21.1	22.2	22.6
Im Alter von 80 Jahren					
Männer	6.2	6.8	7.6	8.4	8.8
Frauen	7.6	8.7	9.4	10.1	10.4

2016: statistische jährliche Finalbilanz

Symptomatische schwere Aortenstenose



Symptomatische Aortenstenose: Zwingende operative Behandlung

Der Klassiker 1

- Und nun ?
- euroSCORE II

★ HOME **euroSCORE** SCORING CALCULATOR REFERENCES
euroSCORE interactive calculator

Important: The previous additive¹ and logistic² EuroSCORE models are out of date.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 II³ - 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)	93	0	NYHA	III	2958358		
Gender	male	0	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	no	0		
Previous cardiac surgery	no	0	Operation related factors				
Chronic lung disease ⁵	no	0	Urgency ¹¹	elective	0		
Active endocarditis ⁶	no	0	Weight of the intervention ¹²	single non CABG	0.092118		
Critical preoperative state ⁷	no	0	Surgery on thoracic aorta	no	0		
Diabetes on insulin	no	0					
EuroSCORE II	0						
Calculate Clear							

Notes about euroSCORE II

[1] Age - in completed years. Some of the weighting for age is now incorporated into the renal impairment risk factor, so it is important that all risk factors are entered to give reliable risk estimations - see note [2]. Of over 20,000 patients in the EuroSCORE database, only 21 patients were aged over 90 - therefore the risk model may not be accurate in these patients. Please exercise clinical discretion in interpreting the score. The oldest patient in the EuroSCORE database was 95 - EuroSCORE II is not validated in patients over this age.

[2] Renal impairment - there are now 3 categories based on creatinine clearance calculated using Cockcroft-Gault formula. Unlike serum creatinine in the old EuroSCORE model, some of the weighting for age is directly incorporated into this factor, as age is a component of creatinine clearance. The 3 categories are:

- on dialysis (regardless of serum creatinine level)
- moderately impaired renal function (50-85 ml/min)
- severely impaired renal function (<50 ml/min) off dialysis

Creatinine clearance (ml/min) = (140-age (years)) x weight (kg) x (0.85 if female) / [72 x serum creatinine (mg/dl)]

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Diabetes on insulin	no	0					
EuroSCORE II	2.30 %						
Calculate Clear							

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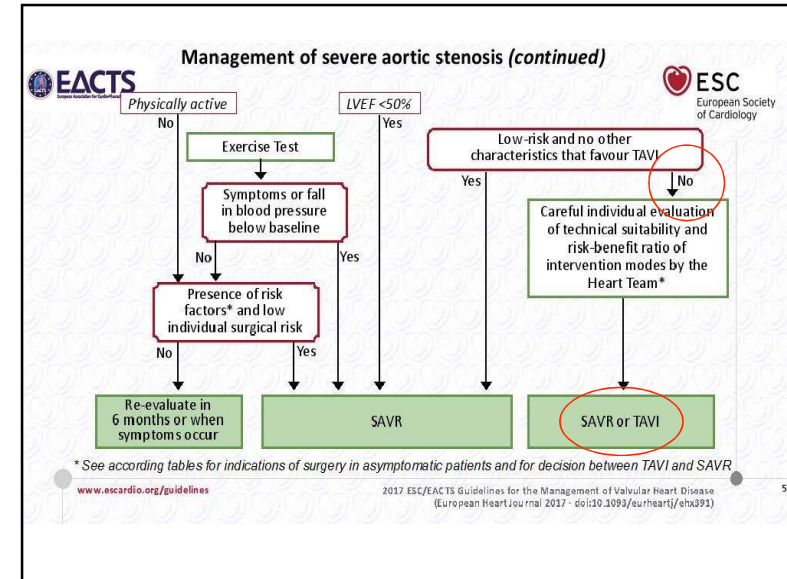
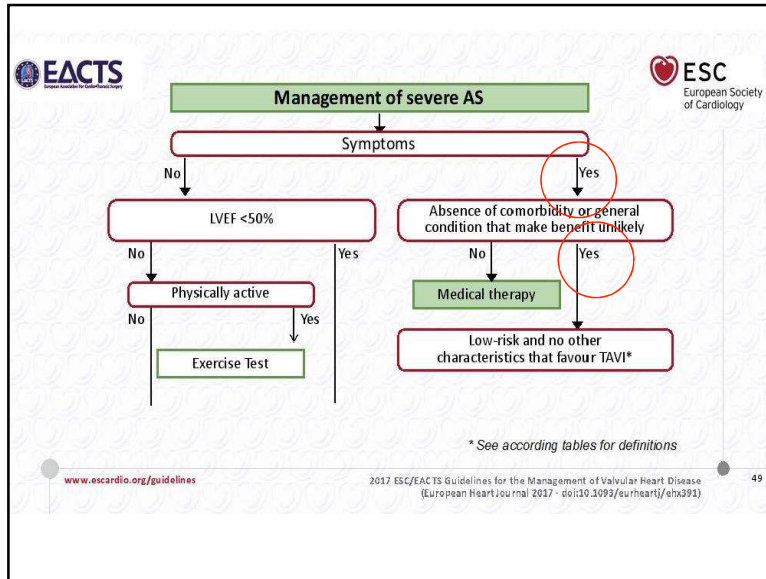
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EACTS European Association for Cardio-Thoracic Surgery

ESC European Society of Cardiology

Essential questions in the evaluation of patients for valvular intervention

Questions	
• How severe is VHD?	✓
• What is the aetiology of VHD?	✓
• Does the patient have symptoms?	✓
• Are symptoms related to valvular disease?	✓
• Are any signs present in asymptomatic patients that indicate a worse outcome if the intervention is delayed?	✓
• What are the patient's life expectancy and expected quality of life?	✓

www.escardio.org/guidelines 2017 ESC/EACTS Guidelines for the Management of Valvular Heart Disease (European Heart Journal 2017 - doi:10.1093/eurheartj/ehx391) 22

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Essential questions in the evaluation of patients for valvular intervention (continued)

Questions (continued)	
• Do the expected benefits of intervention (versus spontaneous outcome) outweigh its risks?	✓
• What is the optimal treatment modality? Surgical valve replacement (mechanical or biological), surgical valve repair, or catheter intervention?	✓
• Are local resources (local experience and outcome data for a given intervention) optimal for the planned intervention?	✓
• What are the patient's wishes?	✓

www.escardio.org/guidelines 2017 ESC/EACTS Guidelines for the Management of Valvular Heart Disease (European Heart Journal 2017 - doi:10.1093/eurheartj/ehx391) 23

EACTS **Indications for intervention in aortic stenosis and recommendations for the choice of intervention mode (continued)** **ESC** European Society of Cardiology

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

www.escardio.org/guidelines 2017 ESC/EACTS Guidelines for the Management of Valvular Heart Disease (European Heart Journal 2017 - doi:10.1093/eurheartj/ehx391) 53

EACTS **Indications for intervention in aortic stenosis and recommendations for the choice of intervention mode (continued)** **ESC** European Society of Cardiology

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

www.escardio.org/guidelines 2017 ESC/EACTS Guidelines for the Management of Valvular Heart Disease (European Heart Journal 2017 - doi:10.1093/eurheartj/ehx391) 52

EACTS **Aspects to be considered by the Heart Team for the decision between SAVR and TAVI in patients at increased surgical risk** **ESC** European Society of Cardiology

	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	+	

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EACTS **Aspects to be considered by the Heart Team for the decision between SAVR and TAVI in patients at increased surgical risk (continued)** **ESC** European Society of Cardiology

	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		+

www.escardio.org/guidelines 2017 ESC/EACTS Guidelines for the Management of Valvular Heart Disease (European Heart Journal 2017 - doi:10.1093/eurheartj/ehx391) 59

Der Klassiker 1

- CT- Angio: gute Voraussetzungen für TAVI
- Heart-Team Diskussion
- Empfehlung: TAVI bei symptomatischer schwerster Aortenklappenstenose

Der Klassiker 1

- Verlauf:
- Implantation Sapien 3 TAVI



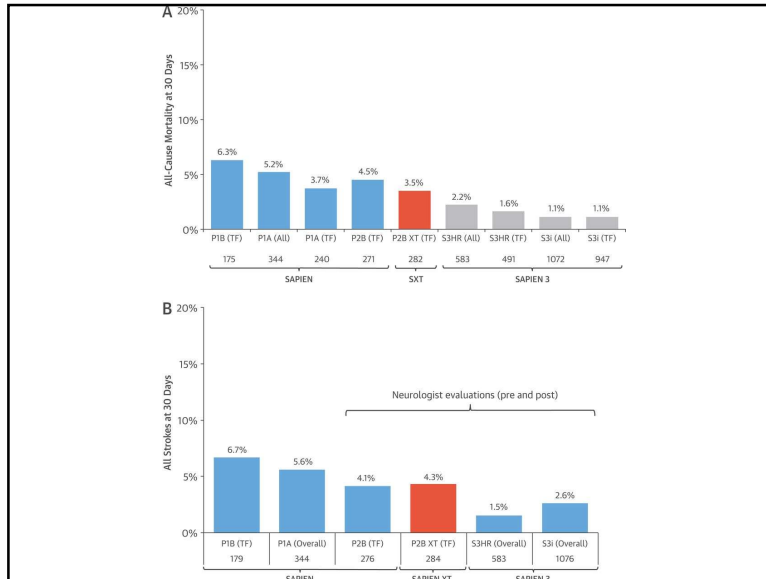
Der Klassiker



- Tag 2: schwerer Stroke
- Tag 3 Exitus letalis

Der Klassiker ?

- Mortalitätsrisiko TAVI aktuell (30d in hospital):
- 2-3%
- Stroke-Risiko TAVI aktuell (30d in hospital):
- 1-2%



... war ja klar, wer operierte denn einen 93-jährigen!!!

Der Klassiker 2

- 91-jähriger Patient, Angina pectoris beim Schneeschaukeln morgens um 06:00h
- arterielle Hypertonie unter Losartan 50mg
- PA: Gonarthrose links, chronische Lumbago, St.n. TUR-P
- Ruhe-EKG: nSR, LL, unspezifische T-Abflachungen
- Troponin I: 124 pg/ml, CK: 76 U/l, Krea-Clearance: 35 ml/min

Der Klassiker 2

- TTE: mittelschwer reduzierte LVEF (35%) bei antero-latero-apicaler Hypokinesie
- Diagnose: NSTEMI

Der Klassiker 2

- Hochrisikopatient (Alter, Niere, LVEF, NSTEMI)
- Entschluss: konservatives Management
- Beginn mit ASS 100mg 1-0-0, Brilique 90mg 1-0-1
- Atorvastatin 40mg 0-0-1 zur Plaque-Stabilisierung
- Beginn Bisoprolol 1.25mg 1-0-0

Der Klassiker 2

- immer noch Angina pectoris bereits bei Körperwäsche im Bett
- Beginn mit Nitroderm TTS 10mg
- immer noch Angina pectoris
- Wechsel Losartan auf Amlodipin 5mg 1-0-0

Der Klassiker 2

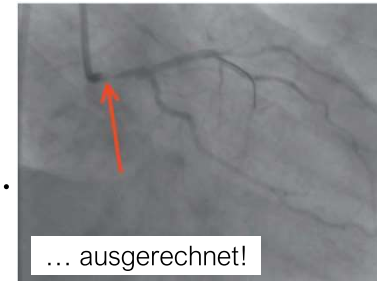
- immer noch Angina pectoris bereits bei Körperwäsche im Bett
- Beginn mit Corvatone retard 8mg 1-1-1
- immer noch Angina pectoris, MoHCl Trpf. i.R.
- Blutdruck 105/75 mmHg im Bett

Der Klassiker 2

- immer noch Angina pectoris im Bett bereits bei Körperwäsche
- was nun?
- Invasive Abklärung vs. palliative Morphin-Gabe (und Verzicht auf Körperpflege...)
- Patient geistig fit, bisher selbständig, in Ruhe beschwerdefrei



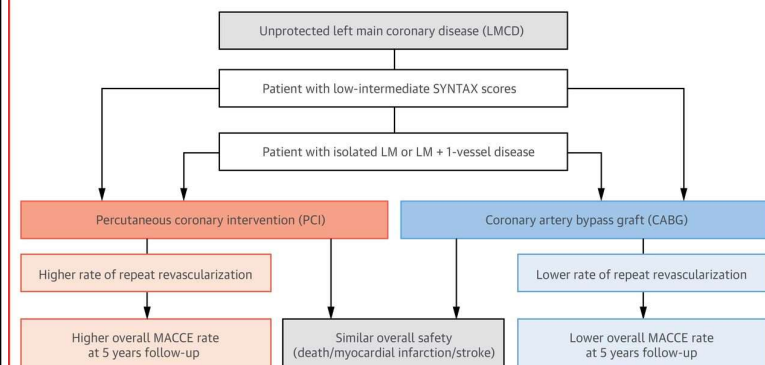
...schauen wir mal nach...



Top oder Flop...

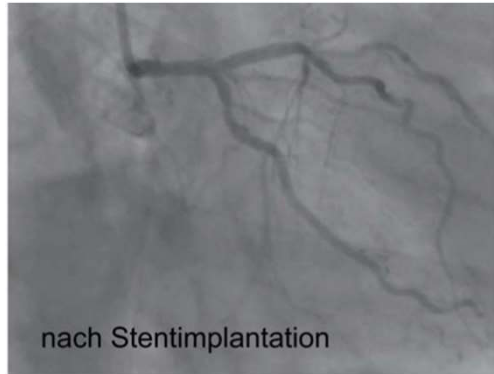
- Mortalität Hauptstamm-Stenting (30d in hopsital): 1-2%
- Stroke-Risiko Hauptstamm-Stenting (30d in hospital): 1-2%

CENTRAL ILLUSTRATION: Selection of the Best Revascularization Strategy for Unprotected LM Coronary Disease



Cavalcante, R. et al. J Am Coll Cardiol. 2016;68(10):999-1009.

Der Klassiker 2



Der Klassiker 2

- Patient beschwerdefrei
- Medikation reduziert auf ASS 100mg 1-0-0, Brilique 90mg 1-0-1, Atorvastatin 20mg 0-0-1, Losartan 50mg 1-0-0
- LVEF nach 3 Monaten 60%
- Patient nach 1 Jahr:



...schön, dass man auch
alten Leuten noch etwas
anbieten kann!

Fazit:

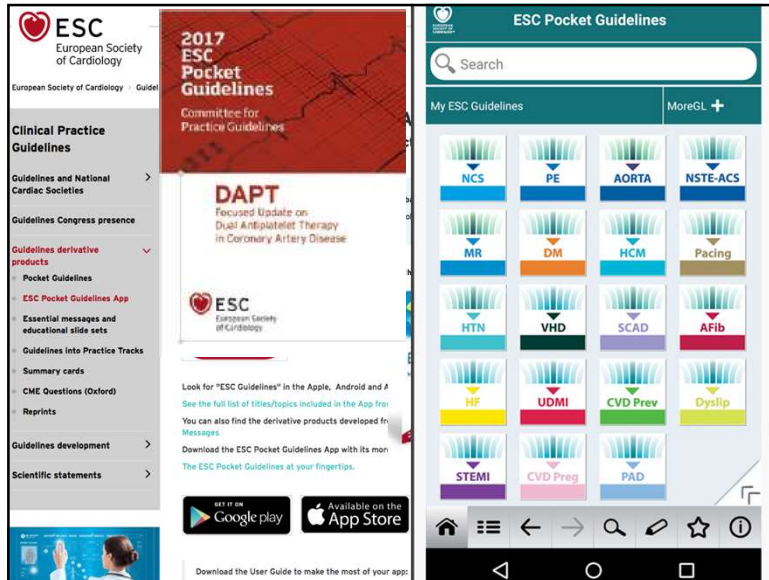
- Ähnliche Ausgangslage
- Berechnet (soweit möglich) ähnliches Risiko
- unterschiedlicher Ausgang

Fazit:

- man darf sich nicht von Einzelfällen leiten lassen
- Berechnungen (soweit möglich) durchführen
- Patienten offen informieren
- unterschiedlichen Ausgang klar ansprechen
- gemeinsamen Entschluss fassen

Fazit:

- Guidelines helfen uns mit Behandlungs-Algorithmen
- Guidelines aktualisieren sich sehr rasch in der Kardiologie
- Entscheide fallen im Team mit Patient und Spezialisten
- offene Kommunikation



Besten Dank für Ihre
Aufmerksamkeit

