



GÖĞÜS KALP DAMAR ANESTEZİ
VE YOĞUN BAKIM DERNEĞİ

27. *Ulusal*
Kongresi

24 - 25 Eylül 2021 Wyndham Grand İzmir Özdilek



TAVİ uygulama kararı ve uygulama sürecinde anesteziğin yeri

Hale Erdost

Doç. Dr. Hale Aksu Erdost-
GKDA2021





GÖĞÜS KALP DAMAR ANESTEZİ
VE YOĞUN BAKIM DERNEĞİ

27. *Ulusal*
Kongresi



TAVİ UYGULAMA KARARI VE UYGULAMA SÜRECİNDE ANESTEZİSTİN YERİ

Doç. Dr. Hale AKSU ERDOST
DEÜ Anestezi ve Reanimasyon AD.

Ciddi Aort Stenozunun Efektif Tedavi Yöntemi;

Cerrahi kapak replasmanı (SAVR)

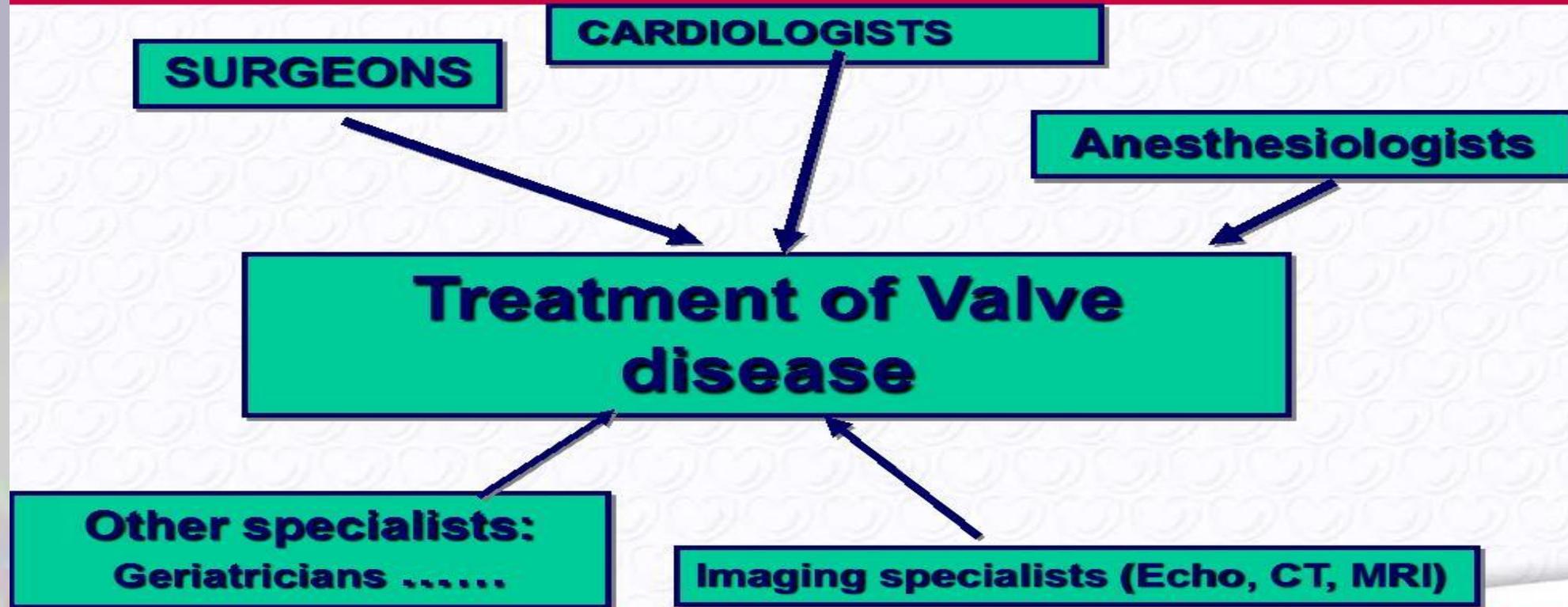
Transkateter aortik kapak replasmanı (TAVI)

Perkütan balon aort valvotomisi

İlk Adım

- Hastayı multidisipliner bir kalp kapağı ekibi (yapısal kapak müdahalelerinde uzman bir **kardiyolog** ve bir **kardiyotorasik cerrah** dahil) tarafından değerlendirilmesi

The « Heart Team »



- Kalp kapađı ekibi daha sonra hastanın SAVR veya TAVİ ile beklenen yařam beklentisini ve hastanın yařam kalitesinin SAVR veya TAVİ ile iyileřip iyileřmeyeceđi
- Hasta AS dıřında potansiyel olarak yařamı sınırlayıcı bir hastalık (örn. kanser) biliyorsa bu durumun bakımıyla ilgilenen klinisyenler ile konsültasyon önemli

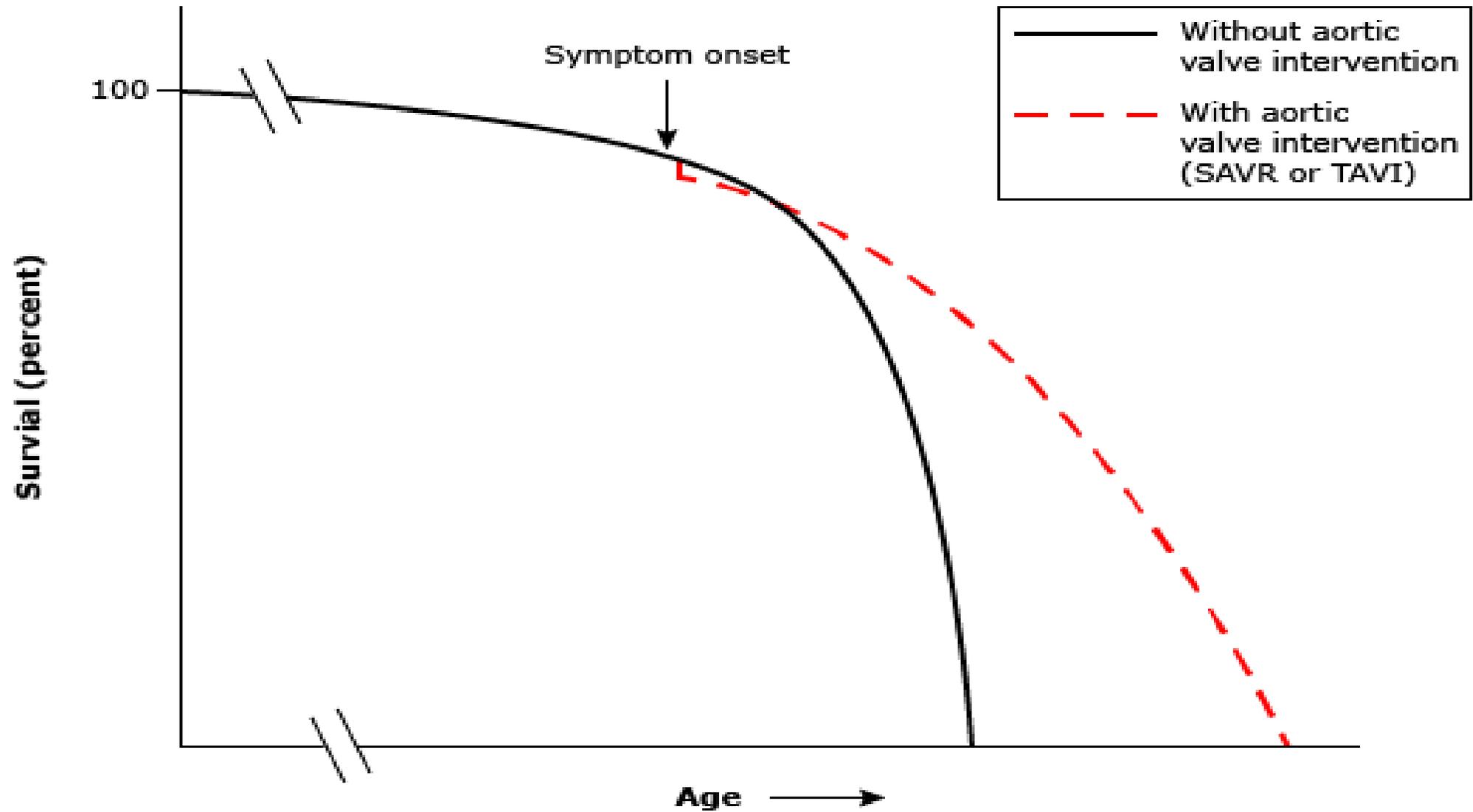
- SAVR ile beklenen yaşam süresi 1 yıldan fazlaysa ve hastanın yaşam kalitesi SAVR veya TAVİ ile muhtemelen düzeliyorsa, bir sonraki adım Kalp Kapağı Ekibi tarafından SAVR ile mortalite ve morbidite riskinin değerlendirilmesidir **Öngörülen Ölüm Riski**

Stages of valvular aortic stenosis

Stage	Definition	Valve anatomy	Valve hemodynamics	Hemodynamic consequences	Symptoms
A	At risk of AS	<ul style="list-style-type: none"> ■ Bicuspid aortic valve (or other congenital valve anomaly) ■ Aortic valve sclerosis 	<ul style="list-style-type: none"> ■ Aortic $V_{max} < 2$ m/s 	<ul style="list-style-type: none"> ■ None 	<ul style="list-style-type: none"> ■ None
B	Progressive AS	<ul style="list-style-type: none"> ■ Mild to moderate leaflet calcification of a bicuspid or trileaflet valve with some reduction in systolic motion or ■ Rheumatic valve changes with commissural fusion 	<ul style="list-style-type: none"> ■ Mild AS: Aortic V_{max} 2.0 to 2.9 m/s or mean $\Delta P < 20$ mmHg ■ Moderate AS: Aortic V_{max} 3.0 to 3.9 m/s or mean ΔP 20 to 39 mmHg 	<ul style="list-style-type: none"> ■ Early LV diastolic dysfunction may be present ■ Normal LVEF 	<ul style="list-style-type: none"> ■ None
C: Asymptomatic severe AS					
C1	Asymptomatic severe AS	<ul style="list-style-type: none"> ■ Severe leaflet calcification or congenital stenosis with severely reduced leaflet opening 	<ul style="list-style-type: none"> ■ Aortic $V_{max} \geq 4$ m/s or mean $\Delta P \geq 40$ mmHg ■ AVA typically ≤ 1.0 cm² (or AVAi ≤ 0.6 cm²/m²) ■ Very severe AS is an aortic $V_{max} \geq 5$ m/s or mean $\Delta P \geq 60$ mmHg 	<ul style="list-style-type: none"> ■ LV diastolic dysfunction ■ Mild LV hypertrophy ■ Normal LVEF 	<ul style="list-style-type: none"> ■ None: Exercise testing is reasonable to confirm symptom status
C2	Asymptomatic severe AS with LV dysfunction	<ul style="list-style-type: none"> ■ Severe leaflet calcification or congenital stenosis with severely reduced leaflet opening 	<ul style="list-style-type: none"> ■ Aortic $V_{max} \geq 4$ m/s or mean $\Delta P \geq 40$ mmHg ■ AVA typically ≤ 1.0 cm² (or AVAi ≤ 0.6 cm²/m²) 	<ul style="list-style-type: none"> ■ LVEF $< 50\%$ 	<ul style="list-style-type: none"> ■ None

D: Symptomatic severe AS					
D1	Symptomatic severe high-gradient AS	<ul style="list-style-type: none"> Severe leaflet calcification or congenital stenosis with severely reduced leaflet opening 	<ul style="list-style-type: none"> Aortic $V_{max} \geq 4$ m/s or mean $\Delta P \geq 40$ mmHg AVA typically ≤ 1.0 cm^2 (or AVAi ≤ 0.6 cm^2/m^2) but may be larger with mixed AS/AR 	<ul style="list-style-type: none"> LV diastolic dysfunction LV hypertrophy Pulmonary hypertension may be present 	<ul style="list-style-type: none"> Exertional dyspnea or decreased exercise tolerance Exertional angina Exertional syncope or presyncope
D2	Symptomatic severe low-flow/low-gradient AS with reduced LVEF	<ul style="list-style-type: none"> Severe leaflet calcification with severely reduced leaflet motion 	<ul style="list-style-type: none"> AVA ≤ 1.0 cm^2 with resting aortic $V_{max} < 4$ m/s or mean $\Delta P < 40$ mmHg Dobutamine stress echocardiography shows AVA ≤ 1.0 cm^2 with $V_{max} \geq 4$ m/s at any flow rate 	<ul style="list-style-type: none"> LV diastolic dysfunction LV hypertrophy LVEF $< 50\%$ 	<ul style="list-style-type: none"> HF Angina Syncope or presyncope
D3	Symptomatic severe low-gradient AS with normal LVEF or paradoxical low-flow severe AS	<ul style="list-style-type: none"> Severe leaflet calcification with severely reduced leaflet motion 	<ul style="list-style-type: none"> AVA ≤ 1.0 cm^2 with aortic $V_{max} < 4$ m/s or mean $\Delta P < 40$ mmHg Indexed AVA ≤ 0.6 cm^2/m^2 Stroke volume index < 35 mL/m^2 Measured when patient is normotensive (systolic BP < 140 mmHg) 	<ul style="list-style-type: none"> Increased LV relative wall thickness Small LV chamber with low stroke volume Restrictive diastolic filling LVEF $\geq 50\%$ 	<ul style="list-style-type: none"> HF Angina Syncope or presyncope

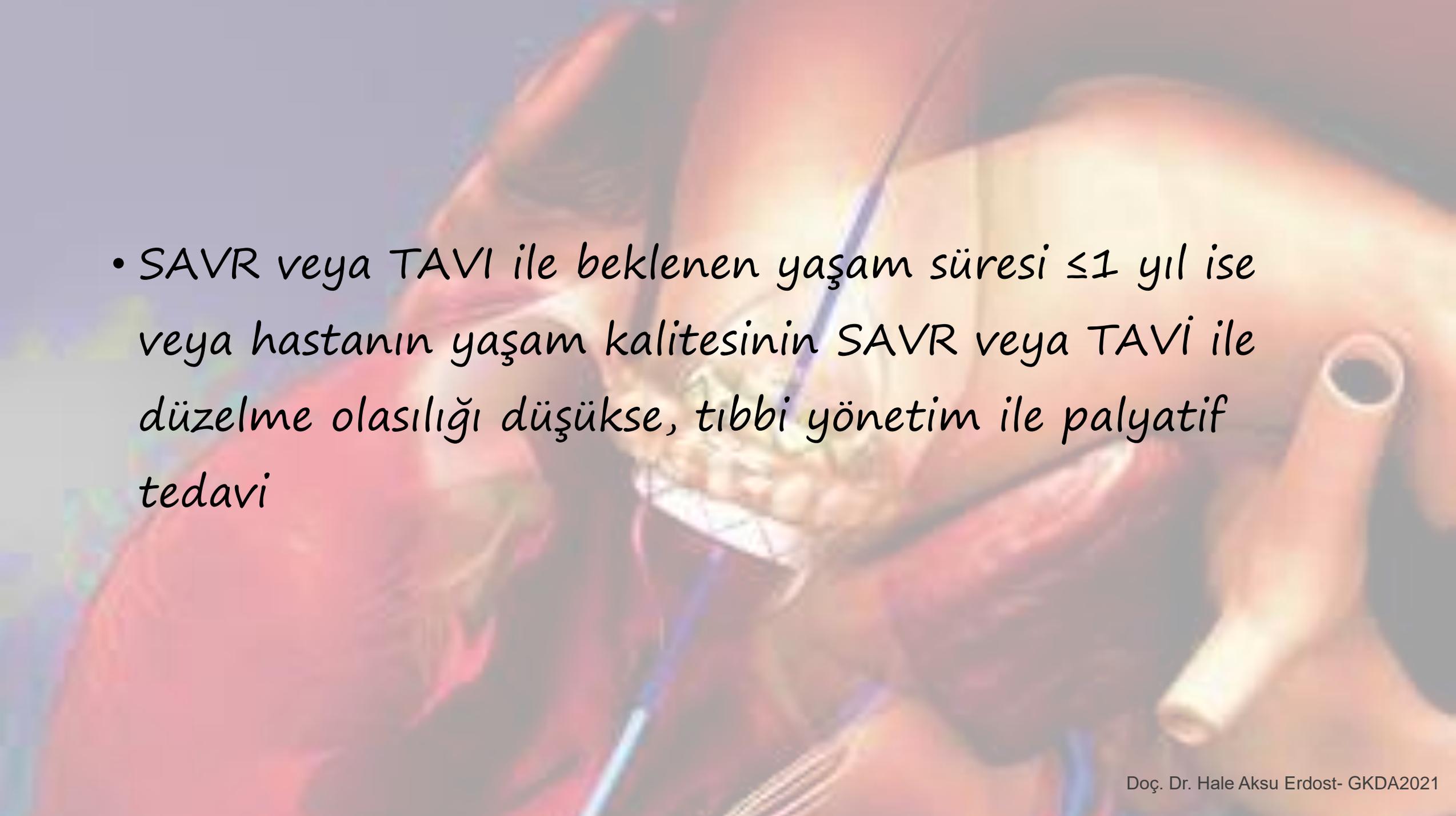
AS: aortic stenosis; V_{max} : maximum aortic velocity; ΔP : pressure gradient; LV: left ventricular; LVEF: left ventricular ejection fraction; AVA: aortic valve area; AVAi: aortic valve area indexed to body surface area; AR: aortic regurgitation; HF: heart failure; BP: blood pressure.



SAVR: surgical aortic valve replacement
TAVI: transcatheter aortic valve implantation
AS: aortic stenosis

Summary of recommendations for AS: Timing of intervention

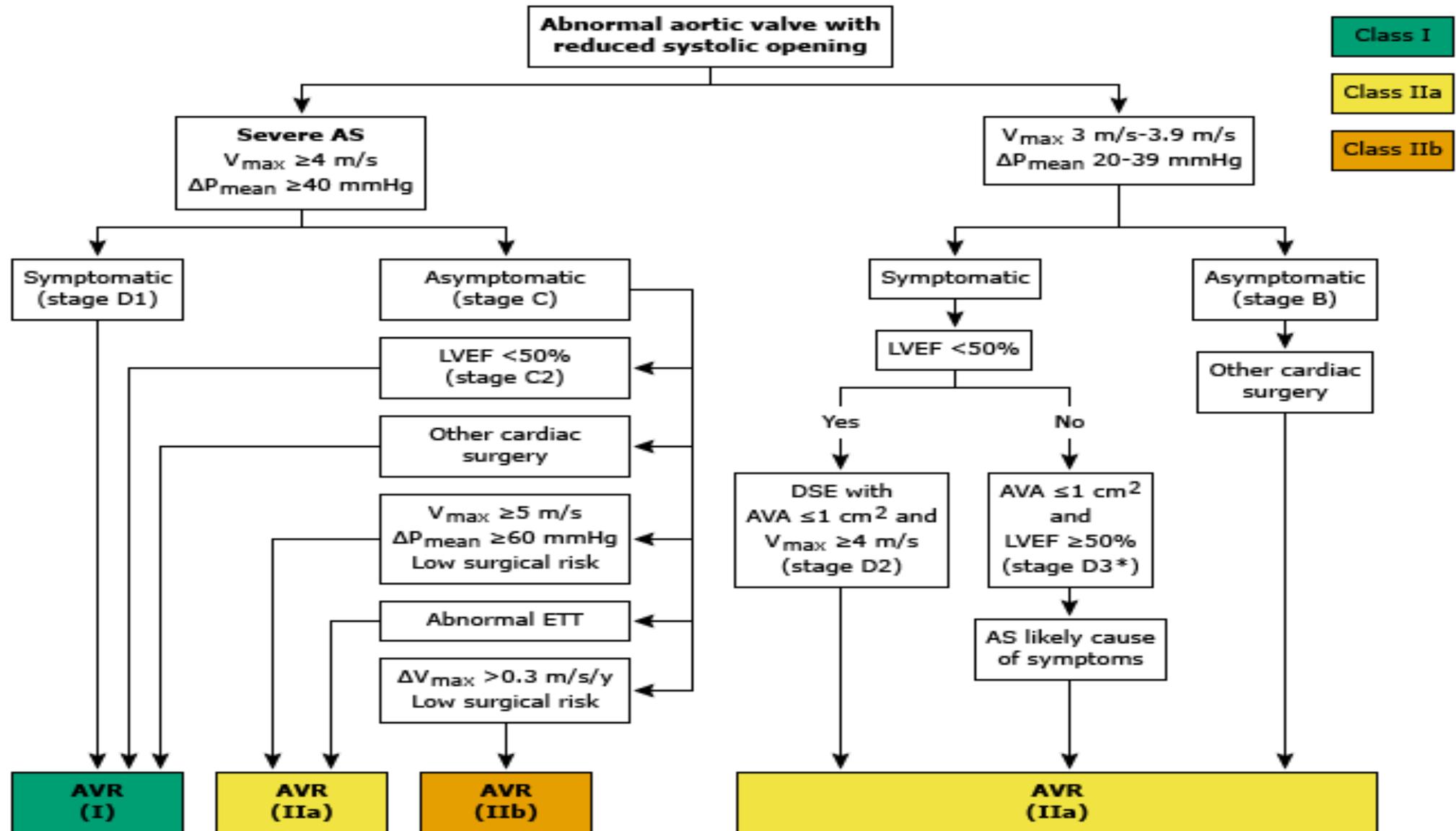
Recommendations	Class of recommendation	Level of evidence
AVR is recommended for symptomatic patients with severe high-gradient AS who have symptoms by history or on exercise testing (stage D1)	I	B
AVR is recommended for asymptomatic patients with severe AS (stage C2) and LVEF <50%	I	B
AVR is indicated for patients with severe AS (stage C or D) when undergoing other cardiac surgery	I	B
AVR is reasonable for asymptomatic patients with very severe AS (stage C1, aortic velocity ≥ 5.0 m/s) and low surgical risk	IIa	B
AVR is reasonable in asymptomatic patients (stage C1) with severe AS and decreased exercise tolerance or an exercise fall in BP	IIa	B
AVR is reasonable in symptomatic patients with low flow, low gradient severe AS with reduced LVEF (stage D2) with a low-dose dobutamine stress study that shows an aortic velocity ≥ 4.0 m/s (or mean pressure gradient ≥ 40 mmHg) with a valve area ≤ 1.0 cm ² at any dobutamine dose	IIa	B
AVR is reasonable in symptomatic patients who have low flow, low gradient severe AS (stage D3) who are normotensive and have an LVEF $\geq 50\%$ if clinical, hemodynamic, and anatomic data support valve obstruction as the most likely cause of symptoms	IIa	C
AVR is reasonable for patients with moderate AS (stage B) (aortic velocity 3.0 to 3.9 m/s) who are undergoing other cardiac surgery	IIa	C
AVR may be considered for asymptomatic patients with severe AS (stage C1), rapid disease progression, and low surgical risk	IIb	C

- 
- SAVR veya TAVI ile beklenen yaşam süresi ≤ 1 yıl ise veya hastanın yaşam kalitesinin SAVR veya TAVI ile düzelme olasılığı düşükse, tıbbi yönetim ile palyatif tedavi

Semptomatik Hasta

- Algoritma 1
- İleri cerrahi risk (% ≥ 50 ölüm veya irreversible komplikasyon) veya SAVR için kontrendikasyon varsa TAVI
- TAVI uygulanamıyorsa Kalp kapağı ekibi yarar-zarar oranı hesaplamalı (TAVI/medikal tedavi)
- Cerrahi yüksek riskli hastalarda (STS-PROM > 8 ve % < 50 ölüm), transfemoral TAVI ?

Indications for aortic valve replacement in patients with aortic stenosis



Transkater implantasyon

Impact of An
The Arr

Journal of
Clinical
Anesthesia

kapak

Review
Article

2002 yılında, **Cribier ve ark.** tarafından ilk “TAVİ” işlemi yapıldı

Cribier A, Eltchaninoff H, Bash A ve ark. Circulation, 2002;106:3006-3008

Journal of Clinical Anesthesia (2015) 27, 385–390



Original Contribution

Sedation or general anesthesia for patients undergoing transcatheter aortic valve implantation—does it affect outcome? An observational single-center study ☆☆☆

Or Goren MD^{a,*}, Ariel Finkelstein MD^b, Andrei Gluch MD^a, Nechama Sheinberg MD^a,
Elia Dery MSc^a, Idit Matot MD^a

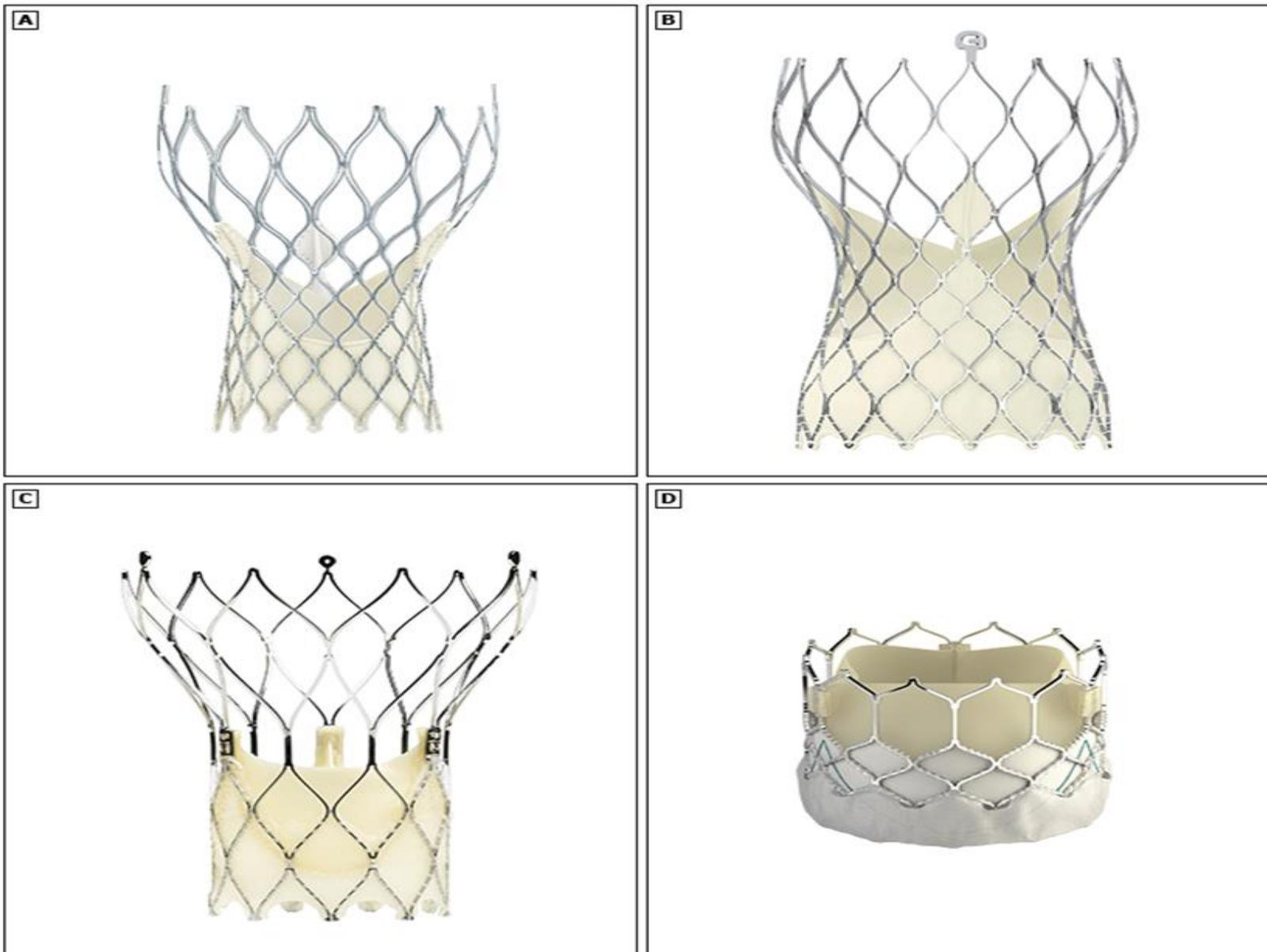
^aDivision of Anesthesiology, Pain, and Intensive Care, Tel Aviv Medical Center, Tel Aviv University, Tel Aviv, Israel
^bDepartment of Cardiology, Tel Aviv Medical Center, Tel Aviv University, Tel Aviv, Israel

Anesthesia and Perioperative Management of Patients Who Undergo
Transfemoral Transcatheter Aortic Valve Implantation: An Observational
Study of General Versus Local/Regional Anesthesia in 125 Consecutive Patients

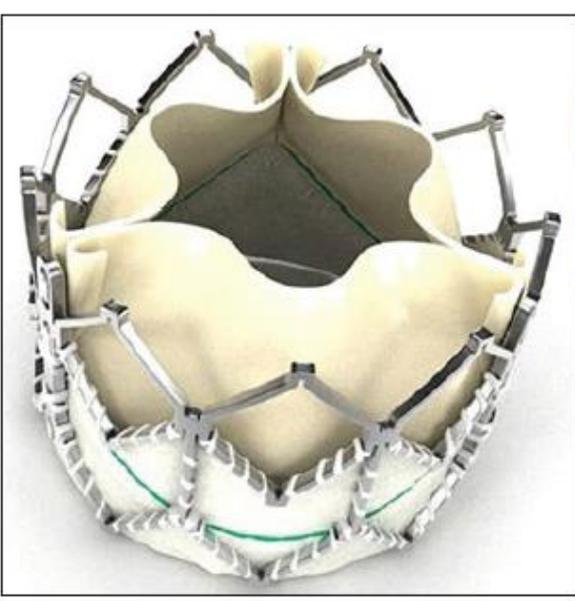
Bénédicte Dehédin, MD,*‡ Pierre-Grégoire Guinot, MD,‡ Hassan Ibrahim, MD,* Nicolas Allou, MD,*‡
Sophie Provenchère, MD,* Marie-Pierre Dilly, MD,* Alec Vahanian, MD, PhD,‡§ Dominique Himbert, MD,§
Eric Brochet, MD,§ Costin Radu, MD,‡¶ Patrick Nataf, MD,‡¶ Philippe Montravers, MD, PhD,*‡
Dan Longrois, MD, PhD,*‡ and Jean-Pol Depoix, MD*

Journal of Transcatheter Aortic Valve Implantation (from the Multicenter
Study), 2016, pp. 1332-1338
Ulrich Gerckens, Corrado Tamburino, Peter Wenaweser, Axel Linke,

Transcatheter aortic valves



A. Medtronic CoreValve; B. Medtronic CoreValve Evolut R; C. St. Jude Portico Hero valve; and D. Edwards Sapien 3 valve.



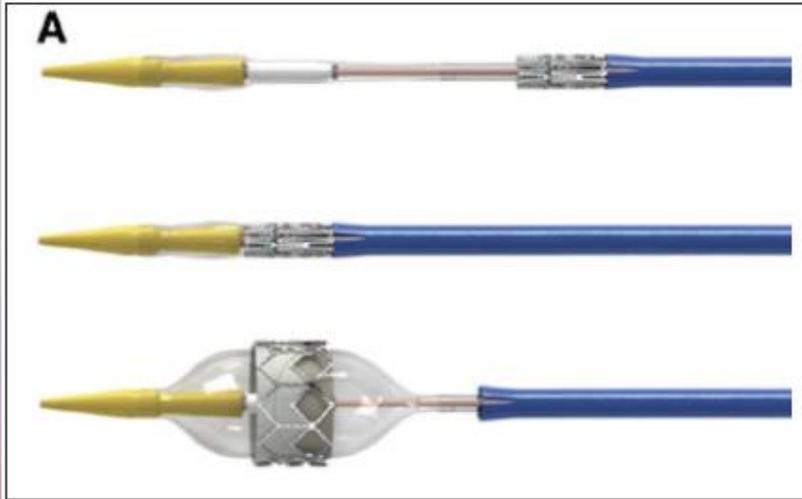
Edwards SAPIEN TX. Edwards SAPIEN, Edwards Lifesciences, USA

Balon ile genişletilebilir **Edwards SAPIEN (USA)**

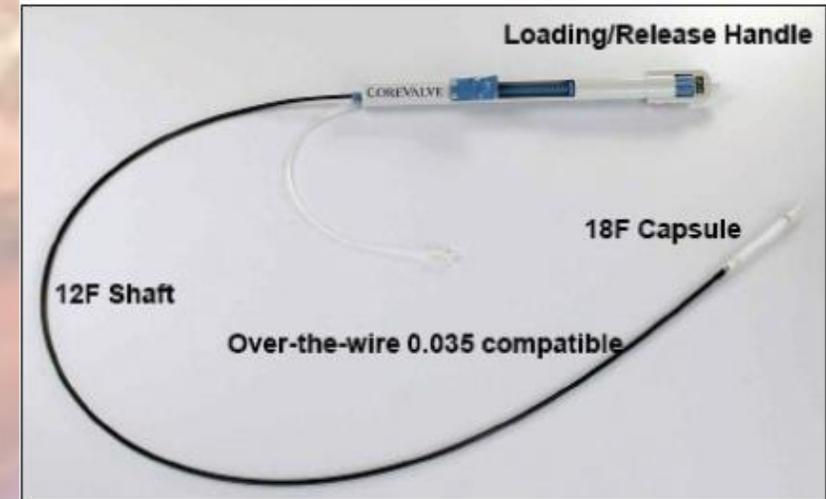


CoreValve Prosthesis. CoreValve ReValving Technology Medtronic

✓ Kendiliğinden genişleyebilen **CoreValve ReValving (USA)**



Novaflex Edwards delivery system. Edwards SAPIEN,



CoreValve ReValving Technology Medtronic Inc., Minneapolis, MN,

Preoperatif Değerlendirme

Logistic EuroSCORE

✓ EuroSCORE

- EuroSCORE (european system of cardiac operative risk evaluation)



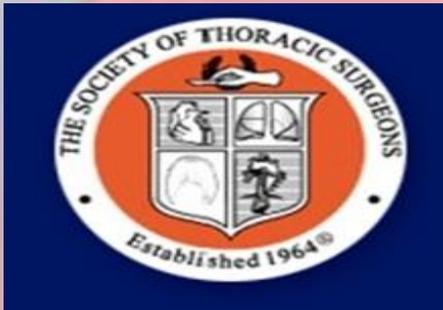
✓ STSPROM

- STS (Society of Thoracic Surgeon)

✓ ACEF score (hasta yaşı, serum kreatinin, EF)

Ranucci M, Castelvechio S, Menicanti L, Frigiola A, Pelissero G: Circulation, 2009

Goetzenich et al. Journal of Cardiothoracic Surgery, 2012

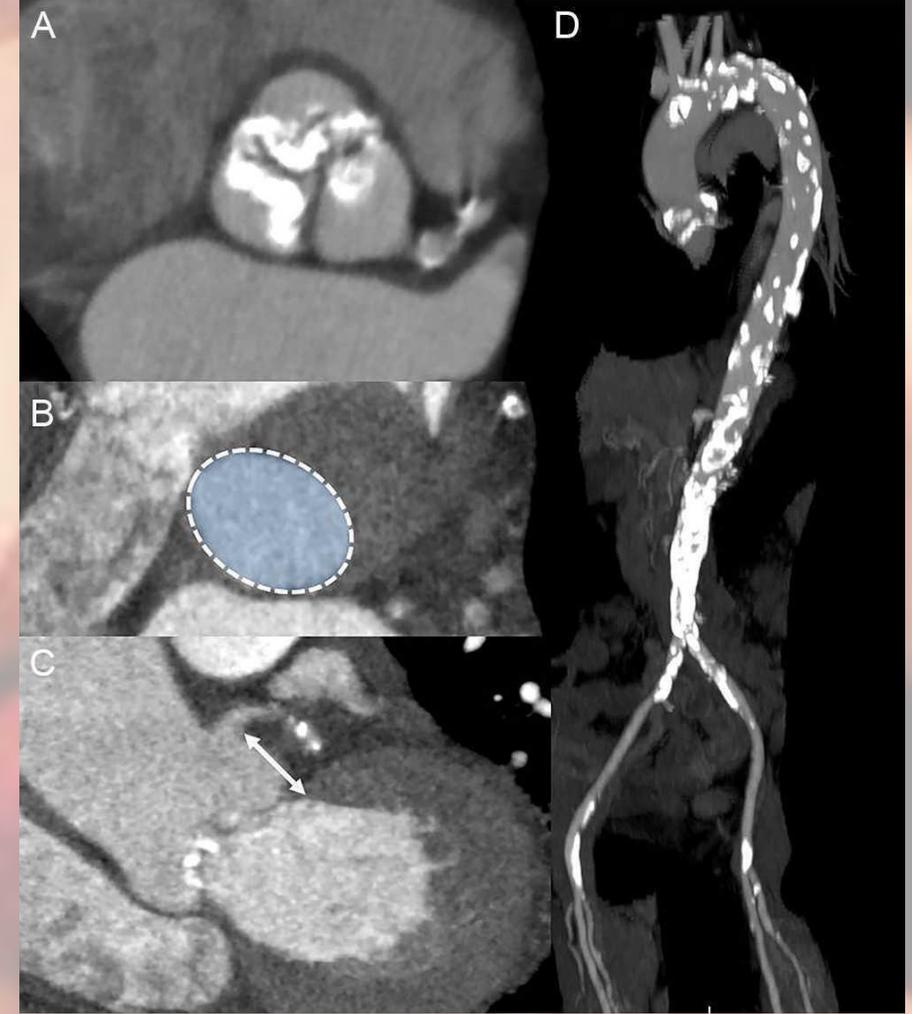
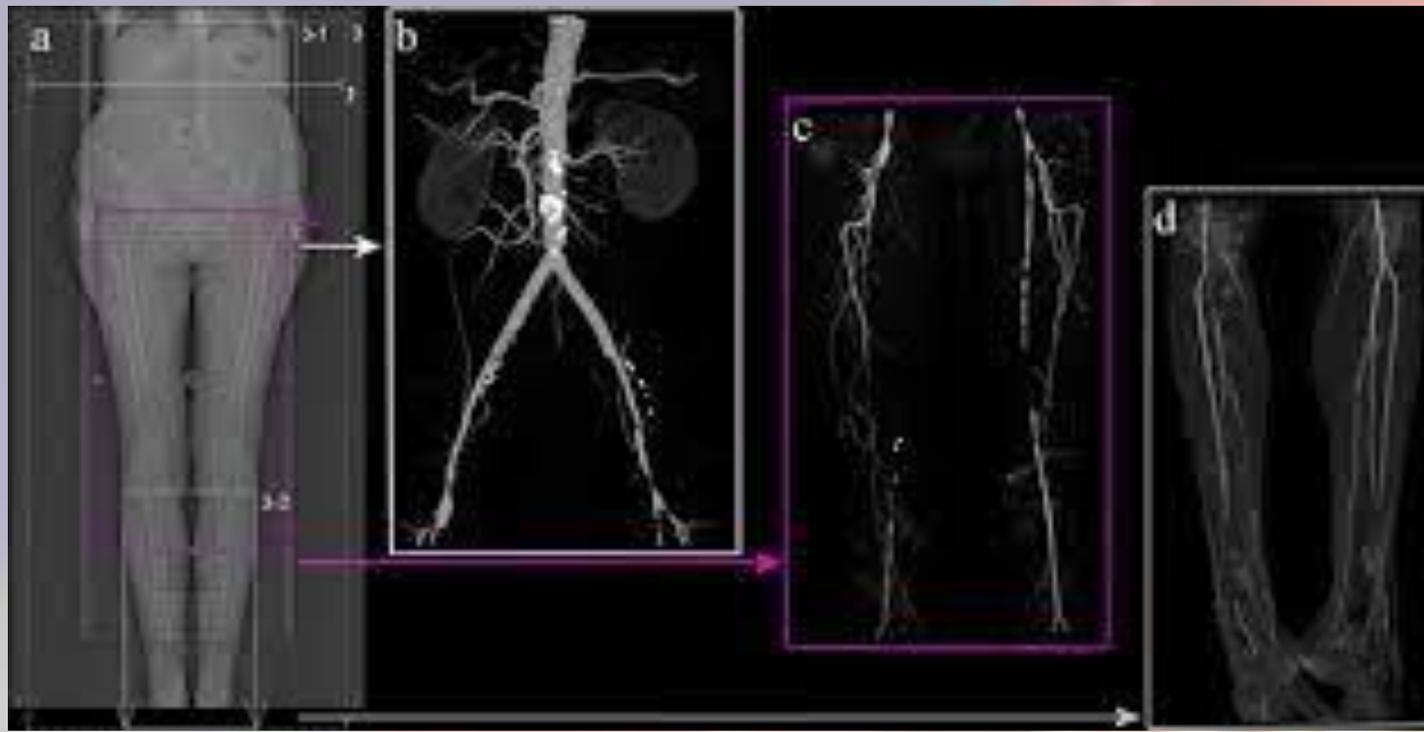


Periferik Vasküler Eriřim İin Uygunluęu Belirleme

- MDCT anjiografi abdominal aorta ve iliofemoral arterlerin görüntülenmesi
- Preprosedürel görüntüleme
- Katater hattında Oklüzyon veya anevrizma ?
- TAVİ Vasküler girişimlerinde komplikasyon oranı % 15,3
 - Cinsiyet (kadın ↑)
 - Arteriyel sheat apı

Vascular Complications After Transcatheter Aortic Valve Replacement

Insights From the PARTNER (Placement of AoRTic TraNscathetER Valve) Trial



Multidetektör BT anjiografi

Transapikal
Transaksiller
Direkt Aortik

Hasta Özellikleri

- ✓ İleri yaş
- ✓ Yandaş hastalıklar (HT, KAH, KOAH, DM, RY, RA vb)
- ✓ Geçirilmiş operasyonlar
- ✓ Fizik muayenede değişiklikler
- ✓ Laboratuvar bulgularında değişiklikler
- ✓ Kullanılan ilaçların çokluğu
- ✓ ASA III veya IV grubu hastalar

Kardiyak Fonksiyonların Deęerlendirilmesi

✓ $EF < 20$

- ✓ Ortalama aortik kapak gradienti dinlemede 40 mmHg 'den **yüksek** ise ve **düşük EF** varsa, dobutamin stress EKO sonrası **kardiyak kontraktilite** deęerlendirilmeli
- ✓ Anti aritmik ilaçlar, **kesilmemeli**
- ✓ ACE içeren antihipertansif, ilaçlar **kesilmemeli**
- ✓ Kötü ventrikül rezervi varsa, balon valvüloplasti yapılabilir
- ✓ Anjinası ve sol vent. fonksiyonu kötü olan hastalarda TAVİ öncesi fonksiyonları optimize etmeli

Dumesnil JG, Pibarot P, Carabello B, Eur Heart J, 2010

Solunum Fonksiyonlarının Değerlendirilmesi

✓ Dispne

✓ Ciddi pulmoner fonksiyon bozukluğu **TA-TAVİ** için kontrendike

Covello RD, Landoni G, Zangrillo A, Curr Opin Anaesthesiol, 2011

Böbrek Fonksiyonlarının Değerlendirilmesi

- ✓ Akut böbrek yetmezliği
- ✓ Kronik böbrek yetmezliği
- ✓ **KONTRAST madde** kullanımını sınırlı olmalı

Franco A, Gerli C, Ruggeri L, Monaco F, Ann Card Anaesth, 2012

Koagölasyon Parametrelerinin Deęerlendirilmesi

- ✓ Operasyon öncesi 300-320 mg aspirin, 300 mg **klopidogrel** yükleme dozu
- ✓ İntraoperatif valvüloplasti öncesi: 5000 Ü heparin
- ✓ Operasyon sonrası 75-100 mg/gün aspirin
- ✓ Operasyon sonrası 75 mg/gün klopidogrel 6 ay süre ile verilmeli
- ✓ ACT>250 s olacak şekilde ek doz verilir
- ✓ Kan Hazırlığı (en az **2 ünite** ES)

Covello RD, Landoni G, Zangrillo A.,Curr Opin Anaesthesiol,2011

Franco A, Gerli C, Ruggeri L, Manoco F., Ann Card Anaesth, 2012

Kapak seçimi (TAVİ? SAVR?)

- Endikasyonların ve risklerin tam olarak açıklandığı ortak bir karar verme süreci olmalı
- Antikoagülan tedavi ve potansiyel yeniden ameliyat ihtiyacı ve riski
- Hastanın değerleri ve tercihlerini hesaba katmalı
- Kalp kapağı ekibi (kardiyologlar ve kalp cerrahları dahil)
 - Kapak dayanıklılığı,
 - Tromboembolik ve kanama komplikasyonları riski
 - Kapak değişimini takiben ölüm riskini dikkate almalı

Table 2 Adjusted differences in health care resource use and costs for TAVI compared with SAVR, (base-case).

Health Care Use	^b Difference	95% CI	P-value
Index procedure		Lower CI to upper CI	
ICU length of stay	-50%	-74 to -25%	<0.001 ^a
Hospital length of stay	-64%	-80 to -49%	<0.001 ^a
Index procedure + 30-d follow-up			
ICU length of stay	-57%	-83 to -31%	<0.001 ^a
Hospital length of stay	-64%	-81 to -47%	<0.001 ^a
Costs	^b Difference	95% CI	P-value
Index procedure		Lower CI to upper CI	
^c Cost of index procedure	-9%	-17 to -1%	0.026 ^a
Index procedure + 30-d follow-up			
^c Total costs	-13%	-22 to -4%	0.005 ^a

• STS risk yüksek olan AS hastaları için TAVI

- Hastane /YB kalış süreleri daha kısa
- Maliyetleri daha az

National multi-centre cost-comparison of trans-catheter aortic valve implantation (TAVI) versus surgical aortic valve replacement (SAVR) in moderate to high-risk patients with severe symptomatic aortic stenosis in New Zealand (NZ)

S. Bhattacharyya¹, M. Roskruge², K. Sidhu³,
R. Nair⁴, D. Smyth⁵, M. Webster³, P.
Ruygrok³, J. Ormiston³, S. Pasupati^{4,*}

Conclusion: TAVI appears cost-saving using index-admission cost in intermediate-high risk patients requiring aortic valve replacement in NZ, due to reduced use of hospital resource and LOS. These data have implications for future fund allocations for treating severe AS in this country.

ORIGINAL ARTICLE

TRANSCATHETER VERSUS SURGICAL AORTIC VALVE REPLACEMENT: FIRST EXPERIENCE WITH A NEW TAVI SYSTEM

DOI: 10.36740/WLek202104108

Glib I. Yemets, Oleksandra V. Telehuzova, Andrii V. Ma

- Mortalite oranlarında fark yok
- Komplikasyonlar (pnomoni $p=0,001$) ve postkardiyotomi sendromu ($p=0,01$) TAVi de daha az
- TAVi grubunda YB yatış süresi daha kısa ($p<0.01$)
- AF (TAVi hastalarında) daha az ($p<0.01$)

Table II. Primary postprocedural outcomes in the TAVI and SAVR groups

	TAVI	SAVR	p value
Surgery duration, min	173.3 ± 35, 5	354.2 ± 113.6	<0, 001
Average length of stay, days	24.1 ± 2.4	18.6 ± 3.2	<0.05
Average stay duration in ICU, days	1.29 ± 0.5	4.75 ± 2.89	<0.01
Ventilation duration, hours	12.01 ± 7.2	19.35 ± 9.68	<0.05
Hemodynamic support duration, hours	11.13 ± 7.89	100,98 ± 78, 99	<0.001

Table III. Mortality rates and complications in the TAVI and SAVR groups

	TAVI	SAVR	p value
30-day mortality rate	0	3 (4%)	< 0, 1
Intraoperative blood loss, ml	208.8 ± 81.6	978.5 ± 230.3	<0.01
Blood loss by drainages, ml	130.5 ± 34.7	331.72 ± 120.8	<0.01
Resternotomy	0	4 (5.3%)	< 0.05
Pneumonia	0	9 (12%)	< 0, 001
Atrial fibrillation	3 (33.3%)	30 (40%)	<0.01
Paravalvular leakage	0	7 (9,33%)	<0.01
Postpericardiotomy syndrome	2 (22.2%)	23 (31.3%)	< 0.01
EX implantation	1 (11.1%)	6 (8%)	<0.05
Stroke	1 (11.1%)	2 (2.7%)	= 0.1
Sepsis	0	0	
Wound complications	0	5 (6.7%)	<0.05

Öneriler

- Multimodalite görüntüleme, TAVİ uygulanan hastaların bakımının önemli bir yönü
- TAVİ uygulanan hastalara yönelik bakım ekibi, bakımın her aşaması için çeşitli görüntüleme modalitelerinde (yani prosedür öncesi, prosedür içi ve uzun süreli takip) uzman kardiyologlar ve radyologlardan oluşmalı
- Görüntülemenin hedefleri ve stratejileri,
 - başarılı bir prosedür olasılığını artırmak
 - komplikasyon riskini azaltmak için
 - hasta uygunluğunun sağlanması, önerilen erişim bölgesinin uygunluğunun sağlanması, uygun cihaz tipi ve boyutunun sağlanması ve bir prosedür planı geliştirilmesi yer alır

- TAVİ işlem öncesi görüntülemedeki önemli adımlar
 - kapak ve aort kökü değerlendirmesi için ekokardiyografi,
 - aort ve iliofemoral sistemin çok dedektörlü bilgisayarlı tomografisi (MDCT)
 - aort ve iliofemoral sistemin isteğe bağlı invaziv anjiyografisi ile koroner anjiyografi

- TAVİ sırasında TÖE kullanımı merkezler arasında farklılık gösterir
 - gerçek zamanlı dağıtım,
 - hizalama
 - komplikasyonları belirleme konusunda üstün
 - ani hemodinamik bozulmanın nedenini tanıma
 - aritmiler
 - cihazın yerleştirilmesi
 - kanama
 - koroner arter tıkanıklığı
 - perikardiyal tamponad
 - şiddetli mitral yetersizliği
 - aort yaralanması veya diseksiyonu
 - sol ventrikül hasarı veya perforasyonu
- TAVİ sırasında orta (bilinçli) sedasyon (genel anestezi yerine) ile lokal anesteziye yönelik eğilim, bu vakalarda TÖE kullanımını sınırlayabilir
- intrakardiyak ekokardiyografi (ICE) bir alternatiftir.

Biz.....





Experiences of transcatheter aortic valve implantation with severe aortic stenosis

Aksu Erdost H.¹, İyilikçi L.¹, Duru L.S.², Ocmen E.¹, Dursun H.³

¹Dokuz Eylül University, School of Medicine, Dept of Anaesthesiology & Intensive Care, Izmir, Turkey, ²Medicalpark Hospital, Dept of Anaesthesiology & Intensive Care, Izmir, Turkey, ³Dokuz Eylül University, School of Medicine, Cardiology, Izmir, Turkey

Aortic stenosis is the most common and dangerous native valve disease; it affects 2-4% of patients over 65 years of age ¹. However, the surgical procedure leads the patients to undergo great risks especially in the elderly population and in patients with concomitant disorders ². In this retrospectively conducted study, we described and analyzed our experience on TAVI procedures, performed in our hospital.

Materials and methods: The approval of the Ethics Committee, June 2012 and December 2013 were reviewed retrospectively. Demographic data, STS, EuroSCORE, aortic valve pressure gradients, the methods of anesthesia and monitoring and postoperative complications were collected. All data were expressed as mean \pm standard deviation.

Results: Among 57 remaining patients in whom data was collected, mean age was found as 78.6 ± 6.7 years and the 37 were female. The mean pulmonary artery pressure was 46.9 ± 14.2 mmHg, mean pressure gradient (PG) was 48.8 ± 10.7 mmHg, whereas the peak PG was 75.5 ± 17.1 mmHg prior to the TAVI procedure; left ventricular ejection fraction before the TAVI procedure was calculated as 51.2 ± 14.2 %. Analysis of the patient charts revealed a mean value for STS as 7.8 ± 4.7 and a mean value for EuroSCORE as 34.9 ± 14.1 %. In all patients, a probe for transesophageal echocardiography was inserted for real-time monitoring, together with a temporary pacemaker. Implanted valves were expandable CoreValve in 60%, and the Edwards Sapiens XT Valve in 40%. Following completion of the procedure, final femoral angiography was performed in order to verify that there were no vascular injuries. The patients were transferred coronary ICU after extubation. During postoperative period, minor complications were encountered in 11% patients.

Conclusion: We determined that TAVI was a procedure with low rate of complications in patients with severe aortic stenosis when the steps of the procedure had been followed meticulously, according to the results of our retrospective study. The anesthesiologist should be a key member of the staff prior, during, and following the intervention. The ongoing prospective trials and retrospective research together with the debate on indications, type of the anesthesia, location where the procedure is held etc, will serve to shed light on the evolution of this relatively novel technique.

References:

1. Ruggeri L et al. *HSR Proc Intensive Care Cardiovasc Anesth.* 2012; 4: 40-6.
2. Covello RD et al. *Minerva Anesthesiol.* 2010; 76: 100-8.

ORIGINAL ARTICLE

hnhtipdergisi.com

Experiences of Transcatheter Aortic Valve Implantation with Severe Aortic Stenosis

• Hale Aksu Erdost¹, • Leyla İyilikçi¹, • Leyla Seden Duru¹, • Elvan Öçmen¹, • Hüseyin Dursun²

¹Department of Anesthesiology, Dokuz Eylül University Faculty of Medicine, Izmir, Turkey

²Department of Cardiology, Dokuz Eylül University Faculty of Medicine, Izmir, Turkey

JBACHS
Journal of Basic and Clinical Health Sciences

J Basic Clin Health Sci 2021; 1: 22- 29.
<https://doi.org/10.30621/jbachs.857712>

EVALUATION OF THE FACTORS AFFECTING THE LENGTH OF STAY IN HOSPITAL OF TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI) CASES

Sibel Buyukcoban¹, Leyla İyilikçi²

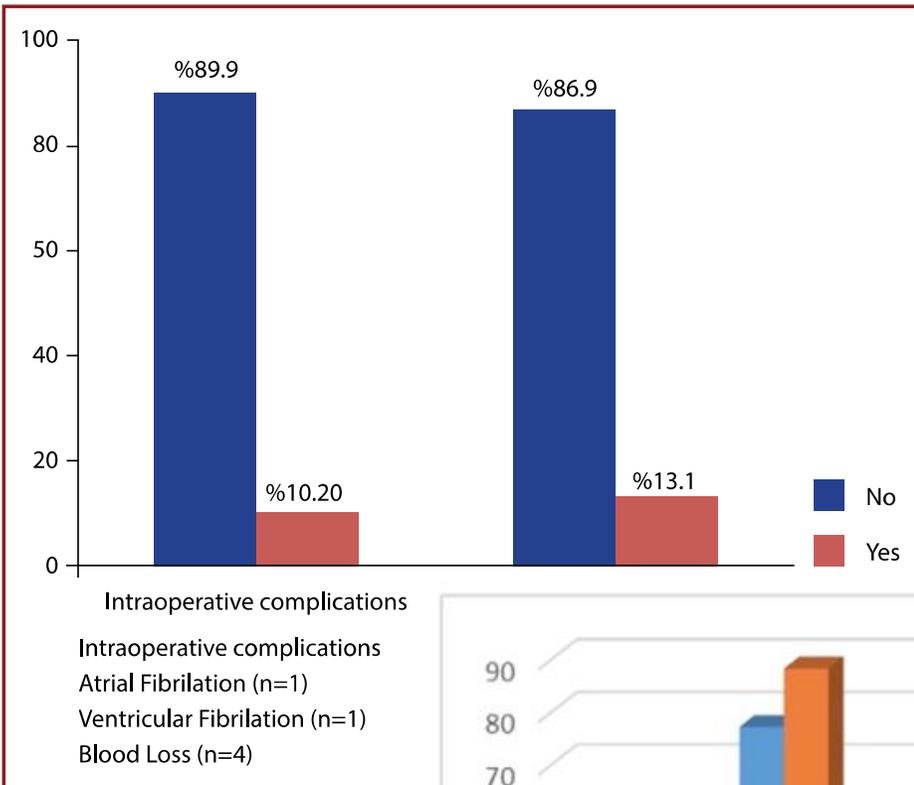


Figure 1. Intraoperative Complications usage.

In conclusion, we found that TAVI was a procedure with a low rate of complications in patients with severe aortic stenosis when the steps of the procedure had been followed meticulously, according to the results of our retrospective study. The anesthesiologist should be a key member of the staff prior, during, and following the intervention.

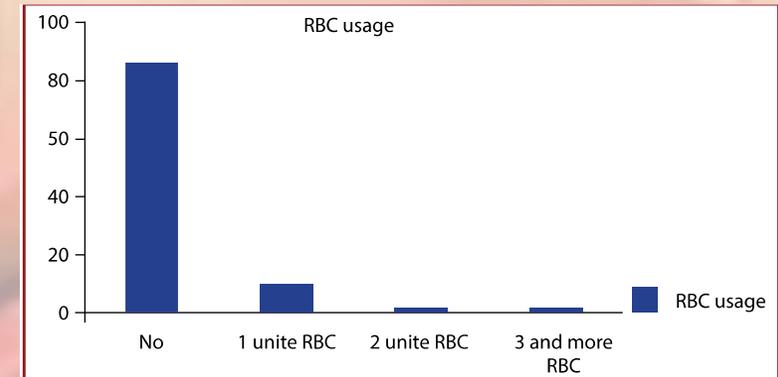
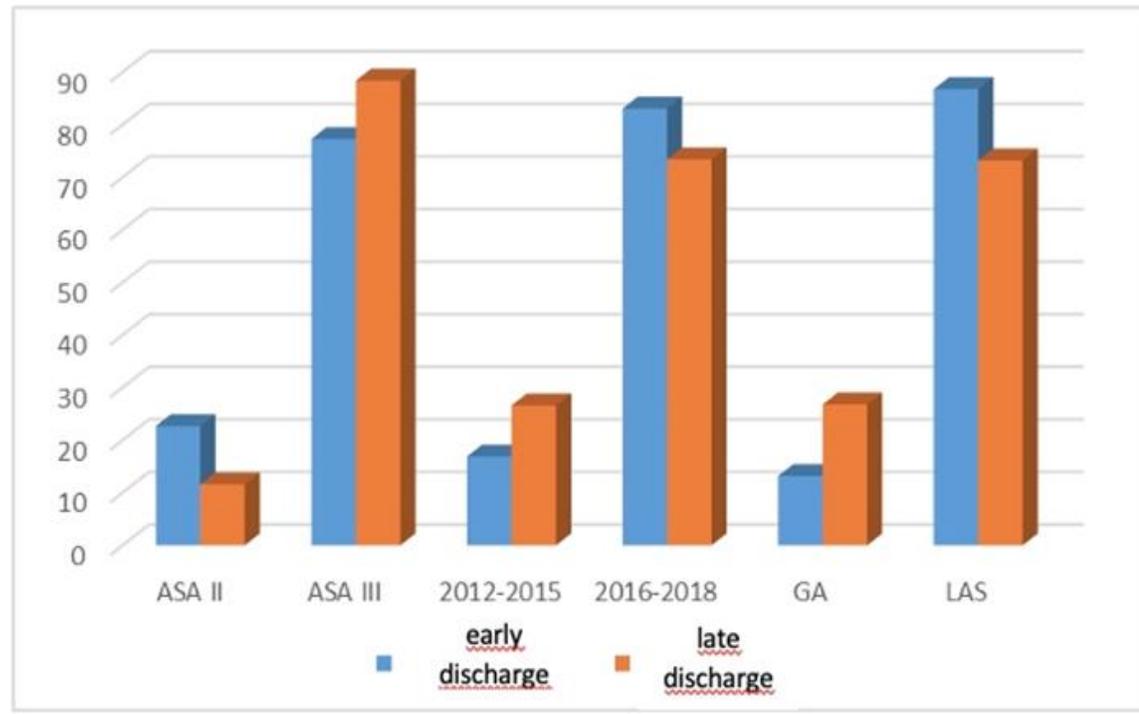


Figure 2. Intraoperative Red Blood Cell (RBC) usage.



SONUÇ

- ✓ Cerrahi riski yüksek
- ✓ İnoperabl
- ✓ Yaşlı popülasyon için

“TAVİ işlemi ideal yöntemdir”.

TAVİ İŞLEMİ

- ✓ Kardiyoloji
- ✓ Kalp Damar Cerrahisi
- ✓ Anestezi
- ✓ Yardımcı personel (ameliyat hemşiresi, radyoloji teknisyeni, anestezi teknisyeni)
- ✓ Yoğun Bakım Ekipleri
- ✓ Firmalar

“İnterdisipliner” bir işlemdir