

Estenosi aòrtica i shock

Hi ha lloc pel codi TAVI?

Albert Duran Cambra

Unitat de Cures Agudes Cardiològiques



Índex



Introducció (Guies de pràctica clínica, consideracions prèvies..)

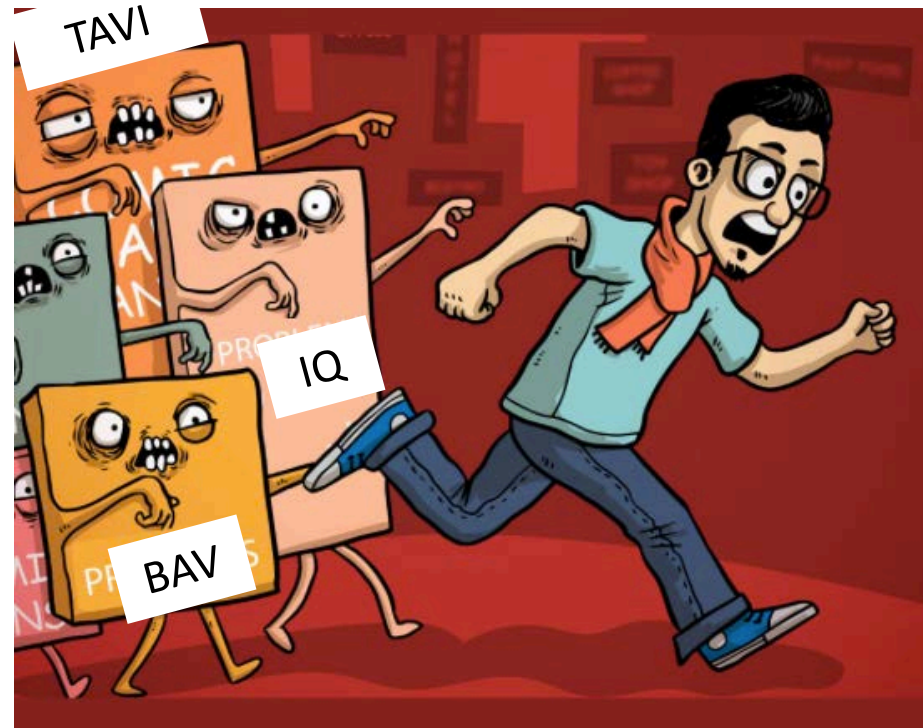
Bibliografia – Estudis sobre tractament urgent de l'EAO i shock

Discussió

Conclusions

Introducció

Cardiogenic Shock + Critical Aortic Stenosis = Run the Other Way?!!!



Introducció

- Què caldria fer en un pacient que es presenti amb shock cardiogènic i estenosi aòrtica severa?

1. Maneig mèdic?
2. SVAo urgent ?
3. TAVI urgent?
4. Valvuloplastia (BAV) urgent?



Introducció



2017 ESC/EACTS Guidelines for the management of valvular heart disease

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)

TAVI is recommended in patients who are not suitable for SAVR as assessed by the Heart Team. ^{91,94}	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

Introducció



2017 AHA/ACC Focused Update of the 2014 AHA/ACC Guideline for the Management of Patients With Valvular Heart Disease

I	A	TAVR is recommended for symptomatic patients with severe AS (Stage D) and a prohibitive risk for surgical AVR who have a predicted post-TAVR survival greater than 12 months. ⁵⁸⁻⁶¹	MODIFIED: LOE updated from B to A. Longer-term follow-up from RCTs and additional observational studies has demonstrated the benefit of TAVR in patients with a prohibitive surgical risk.
See Online Data Supplements 5 and 9 (Updated From 2014 VHD Guideline)			
IIb	C	Percutaneous aortic balloon dilation may be considered as a bridge to surgical AVR or TAVR for symptomatic patients with severe AS.	2014 recommendation remains current.

Introducció

- Donat el risc quirúrgic prohibitiu dels pacients amb EAo i shock cardiogènic, haurien d'anar tots els pacients amb EAo i shock a TAVI?
- AVA post-procediment és major en TAVI que en BAV (tractament més definitiu)...
- ...i a més IAo post procediment molt menor!!



Introducció



- Donat el risc quirúrgic prohibitiu dels pacients amb EAo i shock cardiogènic, haurien d'anar tots els pacients amb EAo i shock a TAVI?
- AVA post-procediment és major en TAVI que en BAV (tractament més definitiu)...
- ...i a més IAo post procediment molt menor!!
- Per què no fer TAVI directa (codi TAVI) en pacients amb EAo i shock? I la BAV té algun paper en aquest escenari clínic?

Transcatheter versus Surgical Aortic-Valve Replacement in High-Risk Patients

Criteris d'exclusió:

6. Blood dyscrasias as defined: leukopenia ($\text{WBC} < 3000 \text{ mm}^3$), acute anemia ($\text{Hb} < 9 \text{ mg}\%$), thrombocytopenia (platelet count $< 50,000 \text{ cells/mm}^3$), history of bleeding diathesis or coagulopathy.
7. Untreated clinically significant coronary artery disease requiring revascularization.
8. Hemodynamic instability requiring inotropic therapy or mechanical hemodynamic support devices.
9. Need for emergency surgery for any reason.
10. Hypertrophic cardiomyopathy with or without obstruction.
11. Severe ventricular dysfunction with $\text{LVEF} < 20\%$.

Introducció

Quin és el paper la de BAV en aquest escenari clínic?

La BAV ha estat durant anys l'única opció terapèutica de l'estenosi aòrtica severa simptomàtica per pacients d'alt risc quirúrgic / inoperables.



Introducció



**PERCUTANEOUS TRANSLUMINAL
VALVULOPLASTY OF ACQUIRED AORTIC
STENOSIS IN ELDERLY PATIENTS: AN
ALTERNATIVE TO VALVE REPLACEMENT?**

ALAIN CRIBIER
NADIR SAOUDI
JACQUES BERLAND

THIERRY SAVIN
PAULO ROCHA
BRICE LETAC

*Service des Soins Intensifs Cardiologiques et des Explorations
Hémodynamiques Cardiovasculaires, Centre Hospitalier et
Universitaire, Hôpital Charles Nicolle, Rouen, France*

THE LANCET, JANUARY 11, 1986

1er article de valvuloplastia aòrtica

3 casos

Accès braquial, catèters de 9F

Balons de 8-10-12 mm de diàmetre

3 inflats de 20" a 6-8 atm)

Introducció

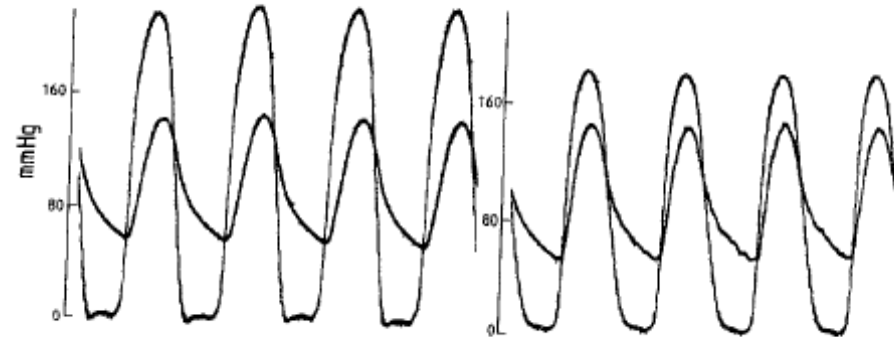


Fig 3—Simultaneous recording of left ventricular and aortic pressures before (left) and at the end of PTAV (right) in case 1.

Transvalvular systolic gradient decreased from 90 to 40 mm Hg.

3 pacients d'edat “avançada” (77, 68, 79), FEVE 70/ 55/ 20%, amb alt risc quirúrgic

Disminució de gradients de 90/80/60 a 40/30/30 mmHg, sense complicacions.

Bona evolució clínica a curt i mig plaç, amb seguiment de 2-5 mesos.

No IAo, no BAVc, no embòlies, no hemorràgies.

Results of Percutaneous Transluminal Valvuloplasty in 218 Adults with Valvular Aortic Stenosis

Brice Letac, MD, Alain Cribier, MD, Rene Koning, MD, and Jean-Paul Bellefleur, MD

(Am J Cardiol 1988;62:598–605)

N=218

50% dones, 122 > 75 anys i 68 > 80 anys.

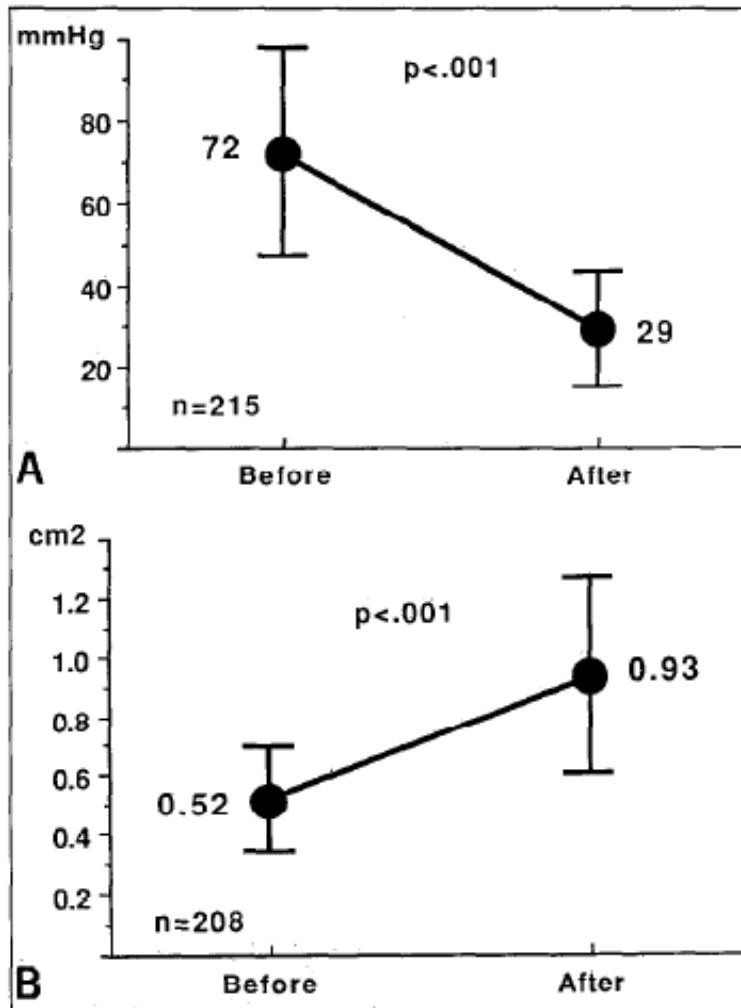
10% via braquial. Resta femoral.

15/18/20 mm diàmetre.

Inflats 60 segons

Gradient transvalvular de 72 mmHg a 29 mmHg (només 3% pacients inefectiu)

Introducció



Events adversos

1 mort

4 ictus

13% hematoma a la punció femoral

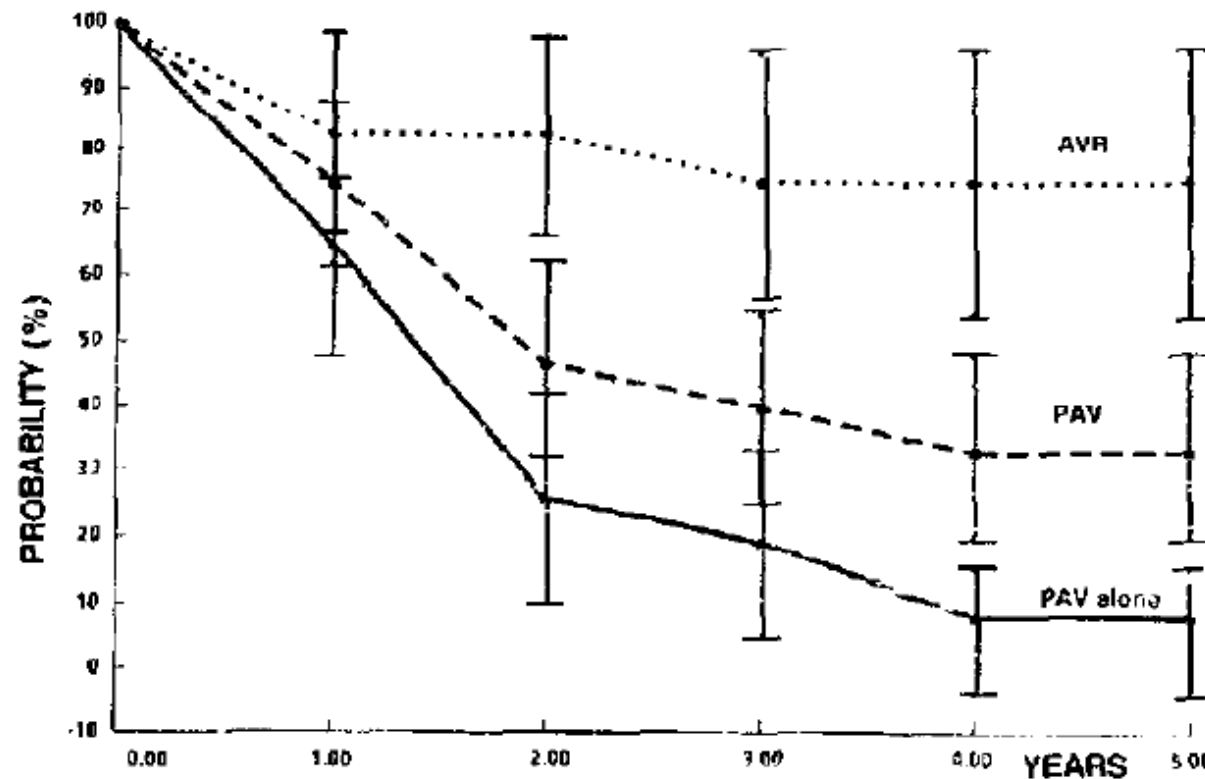
Introducció

Long-Term Results of Percutaneous Aortic Valvuloplasty Compared With Aortic Valve Replacement in Patients More Than 75 Years Old

800

BERNARD ET AL.
CALCIFIED AORTIC STENOSIS IN ELDERLY PEOPLE

JACC Vol. 20, No. 4
October 1992:796-801



Substitució valvular aòrtica (IQ)

Figure 3. Long-term survival rate. AVR = aortic valve replacement (group 2); PAV = percutaneous aortic valvuloplasty (group 1); PAV alone = patients who underwent percutaneous aortic valvuloplasty without subsequent operation (part of group 1).

Valvuloplàstia percutània

Introducció



(Circulation 1991;84:2383–2397)

Percutaneous Balloon Aortic Valvuloplasty

Acute and 30-Day Follow-up Results in 674 Patients From the NHLBI Balloon Valvuloplasty Registry

NHLBI Balloon Valvuloplasty Registry Participants

FACC Vol. 17, No. 1
January 1991:193-5

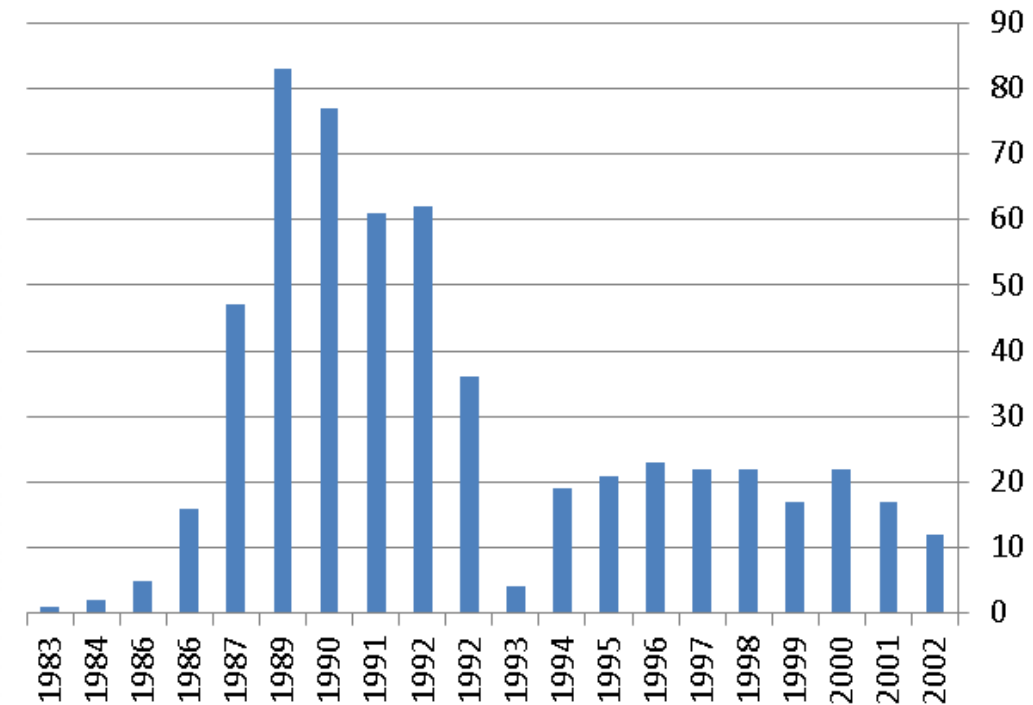
193

Predictors of Long-Term Survival After Percutaneous Aortic Valvuloplasty: Report of the Mansfield Scientific Balloon Aortic Valvuloplasty Registry

WILLIAM W. O'NEILL, MD, FACC FOR THE MANSFIELD SCIENTIFIC AORTIC VALVULOPLASTY REGISTRY INVESTIGATORS*

Royal Oak, Michigan

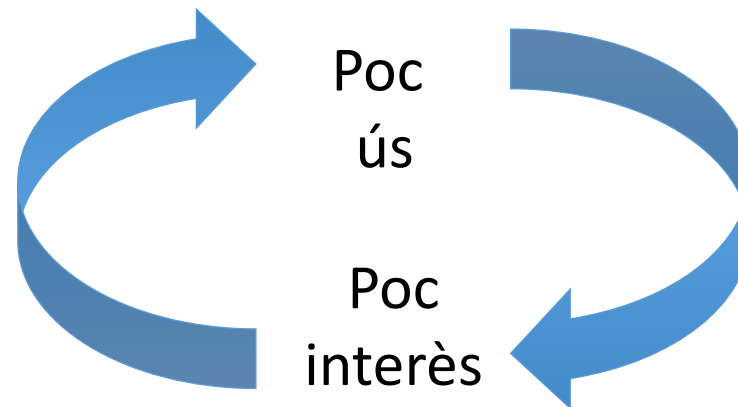
Resultats Pubmed Valvuloplàstia aòrtica



Introducció

BAV va quedar relegada a:

- Tractament paliatiu d'EAO (edat avançada, aorta en porcelana, pacients que no es volien operar, comorbilitats molt importants,...)
- Pont a SVAo / altra IQ en pacients simptomàtics d'alt risc (incloent pacients en shock).
- Maniobra dx-terapèutica en pacients amb símptomes d'origen dubtós.



Special Report

Percutaneous Transcatheter Implantation of an Aortic Valve Prosthesis for Calcific Aortic Stenosis **First Human Case Description**

Alain Cribier, MD; Helene Eltchaninoff, MD; Assaf Bash, PhD; Nicolas Borenstein, MD;
(Circulation. 2002;106:3006-3008.)

Pacient de 57 anys en shock cardiogènic i isquèmia arterial subaguda per EAo per valvulopatia aòrtica bicúspide

Vasculopatia perifèrica (bypass aortobifemoral), silicosi, neo de pulmó

FEVE 14%, Grad mig 30 mmHg.

Valvuloplàstia per Punció transeptal. 23 mm diàmetre.

DEM 20 segns i posteriorment, milloria progressiva del shock. Gradient residual de 6 mmHg, AVA 1,9

Mort als 4 mesos per complicacionsvasculars (premonitori).

Introducció

The NEW ENGLAND
JOURNAL of MEDICINE

ESTABLISHED IN 1812

OCTOBER 21, 2010

VOL. 363 NO. 17

The NEW ENGLAND
JOURNAL of MEDICINE

ESTABLISHED IN 1812

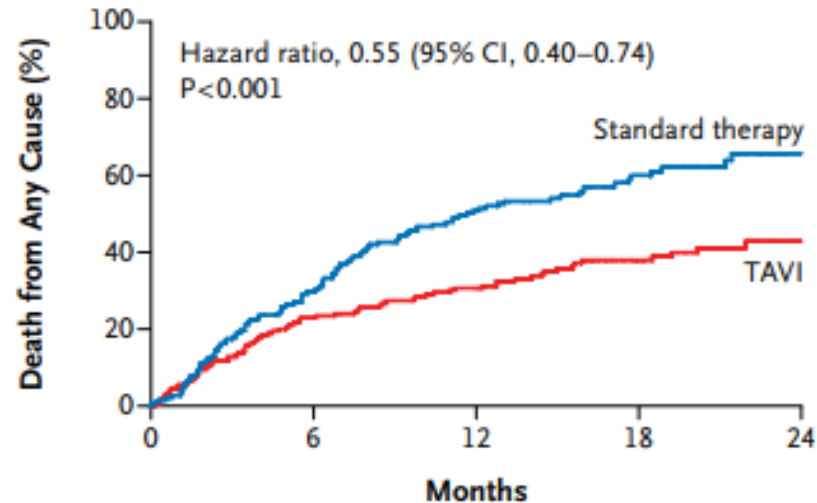
JUNE 9, 2011

VOL. 364 NO. 23

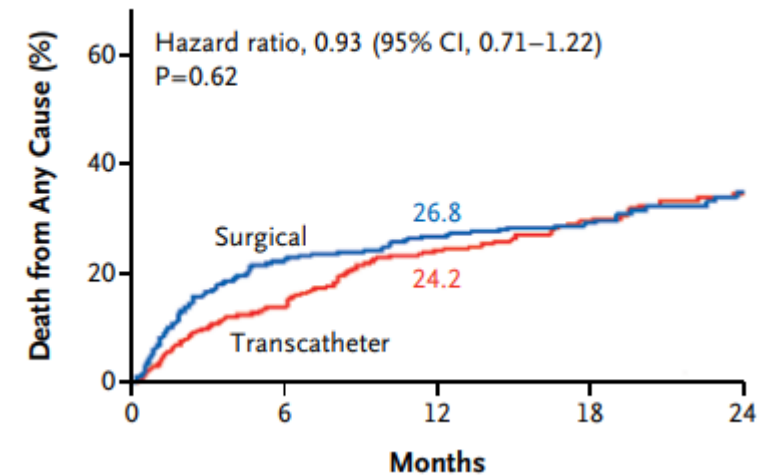
Transcatheter Aortic-Valve Implantation for Aortic Stenosis
in Patients Who Cannot Undergo Surgery

Transcatheter versus Surgical Aortic-Valve Replacement
in High-Risk Patients

A



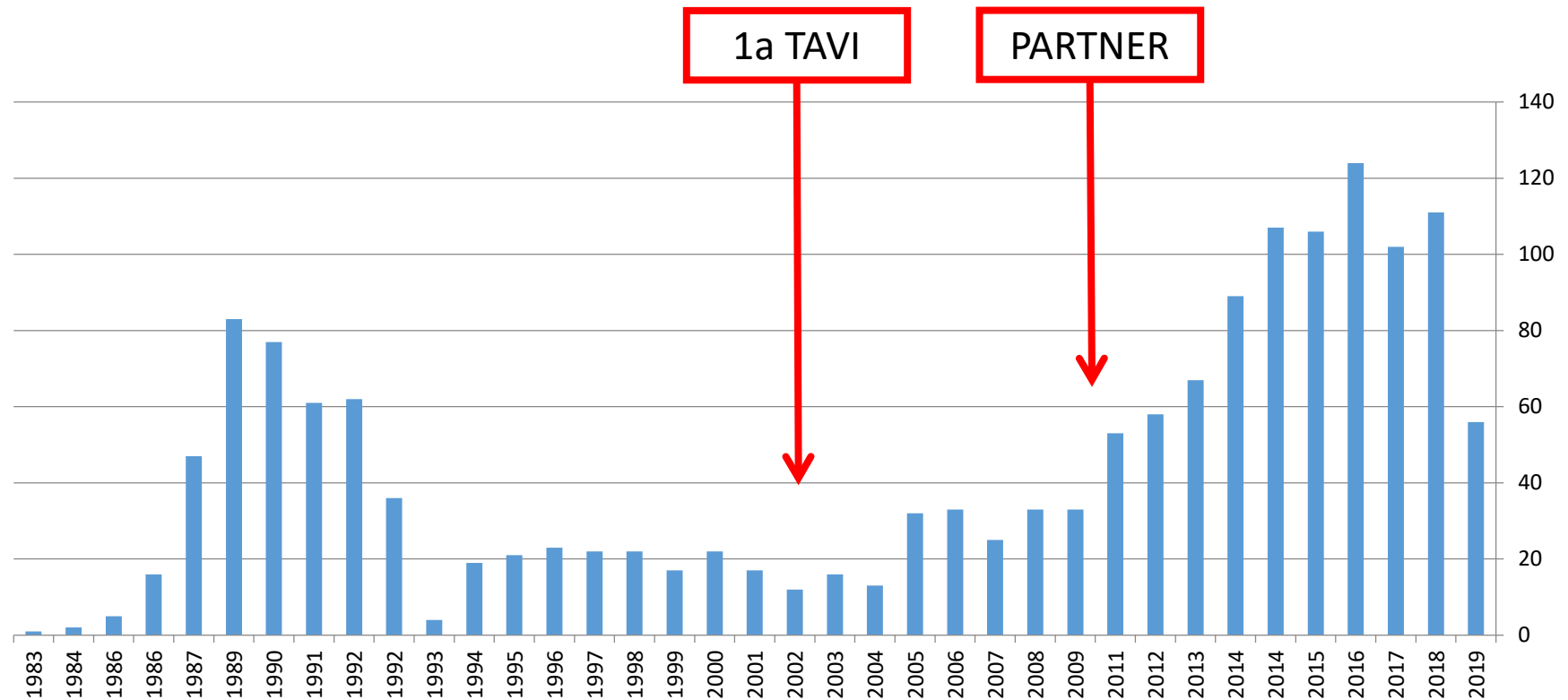
A Death from Any Cause, All Patients



Introducció

Percutaneous Balloon Aortic Valvuloplasty Revisited Time for a Renaissance?

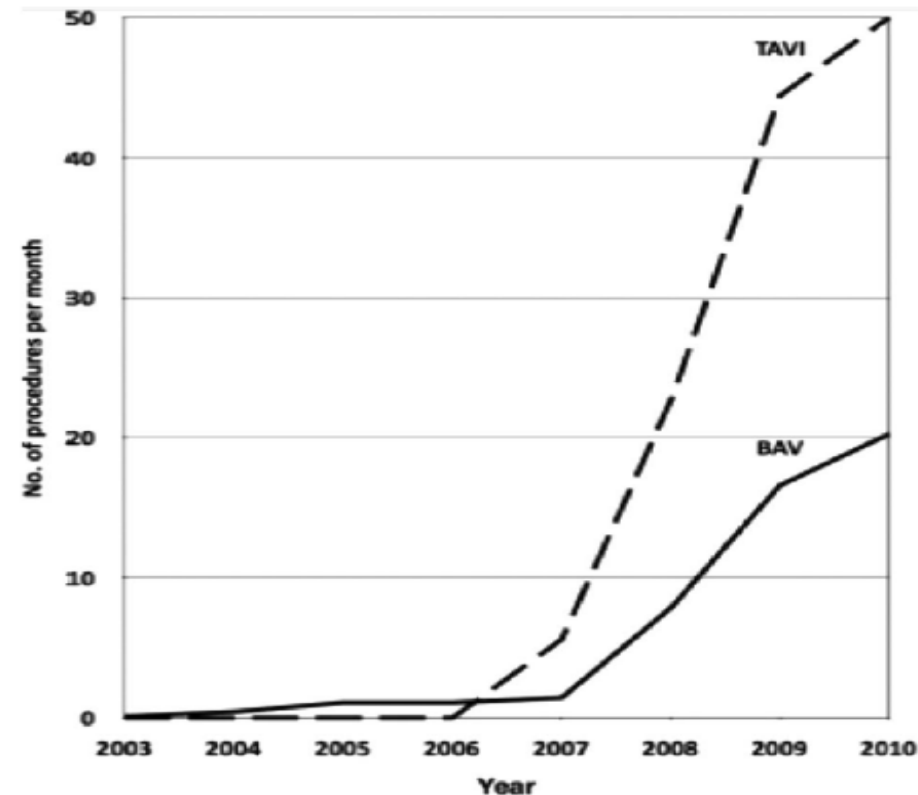
Circulation March 27, 2007



Introducció

Catheterization and Cardiovascular Interventions 81:366–373 (2013)

Standalone Balloon Aortic Valvuloplasty: Indications and Outcomes From the UK in the Transcatheter Valve Era



BAV i shock



BAV i shock



Treatment of Cardiogenic Shock by Emergency Aortic Balloon Valvuloplasty

MARK R. DESNOYERS, M.D.; DEEB N. SALEM, M.D.; KENNETH ROSENFELD, M.D.; WILLIAM MACKEY, M.D.; THOMAS O'DONNELL, M.D.; and JEFFREY M. ISNER, M.D.; Boston, Massachusetts

Table 1. Hemodynamic Findings in Two Patients Before and After Valvuloplasty

	Patient 1	Patient 2
Mean aortic valve gradient, <i>mm Hg</i>		
Before valvuloplasty	57	71
After valvuloplasty	25	45
Peak aortic valve gradient, <i>mm Hg</i>		
Before valvuloplasty	85	120
After valvuloplasty	32	60
Cardiac output, <i>L/min</i>		
Before valvuloplasty	2.1	1.5
After valvuloplasty	3.0	2.8
Aortic valve area, <i>cm²</i>		
Before valvuloplasty	0.2	0.2
After valvuloplasty	0.6	0.5
Systemic blood pressure, <i>mm Hg</i>		
Before valvuloplasty	109/48*	80/30*
Immediately after valvuloplasty	148/52†	150/60†
Three days after valvuloplasty	150/60‡	130/70‡
Mean pulmonary wedge pressure, <i>mm Hg</i>		
Before valvuloplasty	30	30
Immediately after valvuloplasty	20	20
Three days after valvuloplasty	18	12

* Values were measured while patients were receiving dopamine, dobutamine, and norepinephrine.

† Values were measured while patients were receiving dopamine and dobutamine.

‡ Values were measured after treatment with pressors had been discontinued.

We used aortic balloon valvuloplasty to successfully treat two patients who had cardiogenic shock associated with calcific aortic stenosis. In both patients, the resulting reduction in mean aortic valve gradient and increase in calculated aortic valve area allowed prompt discontinuation of treatment with pressors and a return to near normal renal function. Both patients were discharged within 10 days after valvuloplasty and showed significant, long-lasting clinical improvement. Aortic balloon valvuloplasty can reverse cardiogenic shock associated with calcific aortic stenosis.

Addendum

Patient 1 had progressive dyspnea 9 months after valvuloplasty, and aortic valve restenosis detected by Doppler echocardiogram was confirmed at catheterization. The patient and referring physician opted for aortic valve replacement, now considered feasible because of the patient's improved clinical condition, with normal renal function and stable hemodynamic findings, as well as improved ventricular function (ejection fraction, 50% by contrast ventriculography). She had aortic valve replacement 10 months after valvuloplasty and was discharged showing marked symptomatic improvement after an uneventful treatment course.

BAV i shock



THE NEW ENGLAND JOURNAL OF MEDICINE

Feb. 27, 1992

EMERGENCY BALLOON VALVULOPLASTY AS INITIAL TREATMENT OF PATIENTS WITH AORTIC STENOSIS AND CARADIOGENIC SHOCK

ALAIN CRIBIER, M.D., FEHMI REMADI, M.D.,

Table 1. Hemodynamic Measurements before and Immediately after Valvuloplasty in 10 Patients.

MEASURE	VALVULOPLASTY		P VALUE*
	BEFORE	AFTER	
	<i>mean ±SD</i>		
Aortic blood pressure (mm Hg)	71±8	80±14	NS
Pulmonary-capillary wedge pressure (mm Hg)	33±6	25±7	<0.02
Cardiac index (liters/min/m ²)	1.90±0.34	2.30±0.40	<0.05
Aortic transvalvular gradient (mm Hg)	54±19	28±14	<0.01
Aortic-valve area (cm ²)	0.47±0.10	0.95±0.30	<0.001

10 patients, amb estenosi aòrtica i shock cardiogènic.

Edat mitja 64 (54-79)

FEVE 25% -> 46% post

No morts durant procediment. 1 pacient dissociació EM.
1 pacient mort als 4 dies

6 patients van a SVAo

2 patients asimptomàtics als 4 i als 2 anys de seguiment

BAV a la era TAVI



Aortic balloon valvuloplasty as a bridge-to-decision in patients with aortic stenosis

Jacek Wałowski¹, Krzysztof Wilczek¹, Bartosz Hudzik^{1,2}, Damian Pres¹, Michał Hawranek¹,

N = 47

FEVE 35%

Introducer 9-11 F
Rapid pacing

85% BAV efectiva

Table I. Baseline characteristics of patients

Parameter	Mean ± SD or n (%)
Age	76.8 ± 6.6
Female	23 (48.9)
BMI	27.5 ± 6.2
BSA	1.8 ± 0.19
EuroSCORE	10.6 ± 2.3
Logistic EuroSCORE	22.8 ± 13.7

Table III. Peri-procedural complications of BAV

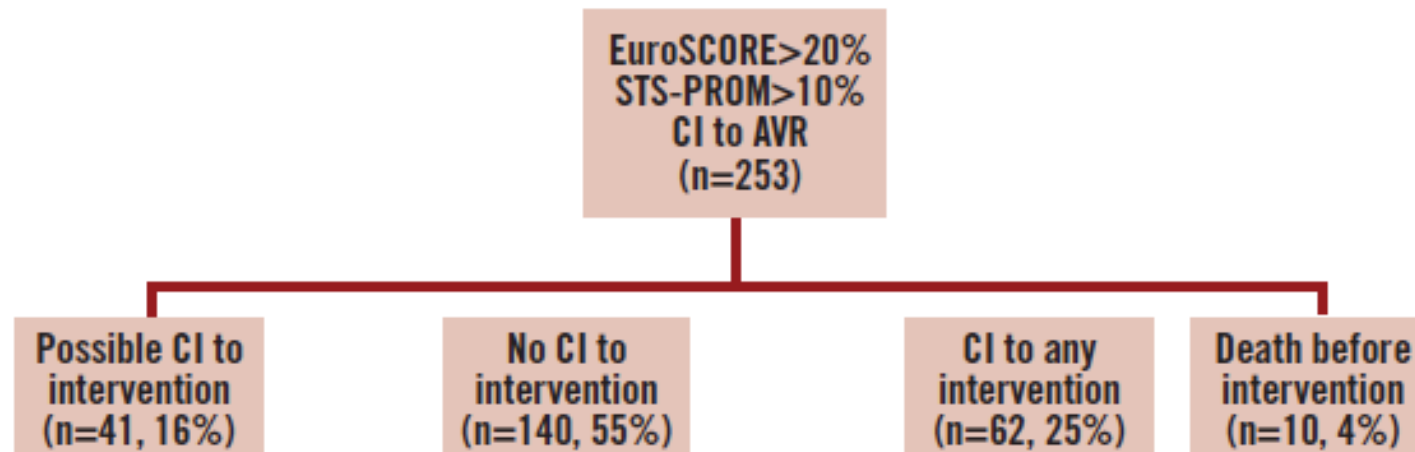
Procedure complications	N (%)
Major complications	5 (10.6)
Intra-procedural death	0
In-hospital death	3 (6.4)
Myocardial infarction	1* (2.1)
Stroke	1* (2.1)
Acute severe AR	0
Vascular complications:	8 (17)
Major	4 (8.5)
Minor	4 (8.5)
Bleeding:	7 (14.9)
Life-threatening	1 (2.1)
Major	3 (6.4)
Minor	3 (6.4)
Need for pacemaker implantation	0
AKI stage 1	5
AKI stage 2 and 3	0
Conversion to AVR	1* (2.1)

*Occurred simultaneously in the same patient. AR – aortic regurgitation, AKI – acute kidney injury.

BAV a la era TAVI

Reappraisal of percutaneous aortic balloon valvuloplasty as a preliminary treatment strategy in the transcatheter aortic valve implantation era

Claire-Marie Tissot¹, MD; David Attias¹, MD; Dominique Himbert^{1*}, MD; Gregory Ducrocq¹, MD; Bernard



BAV a la era TAVI

Reappraisal of percutaneous aortic balloon valvuloplasty as a preliminary treatment strategy in the transcatheter aortic valve implantation era

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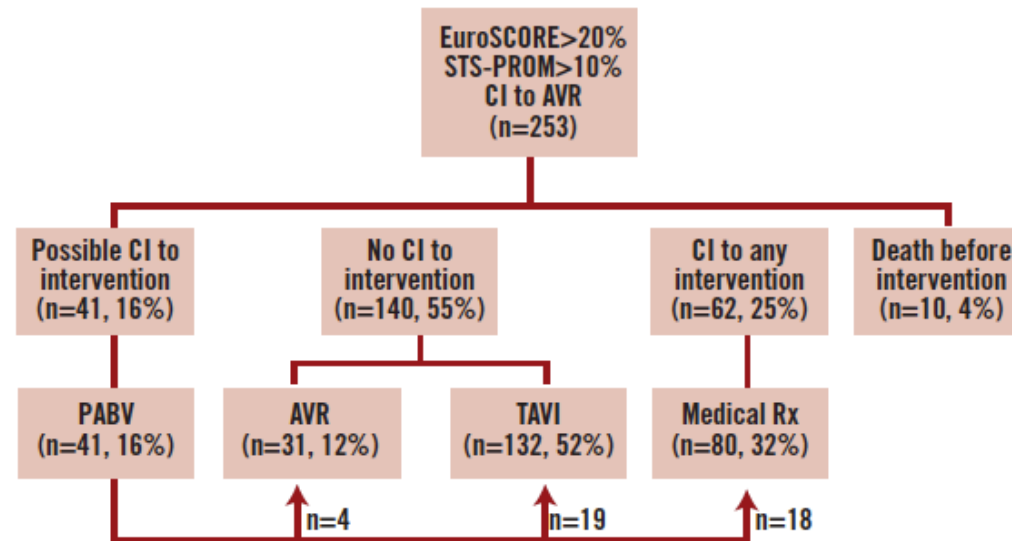
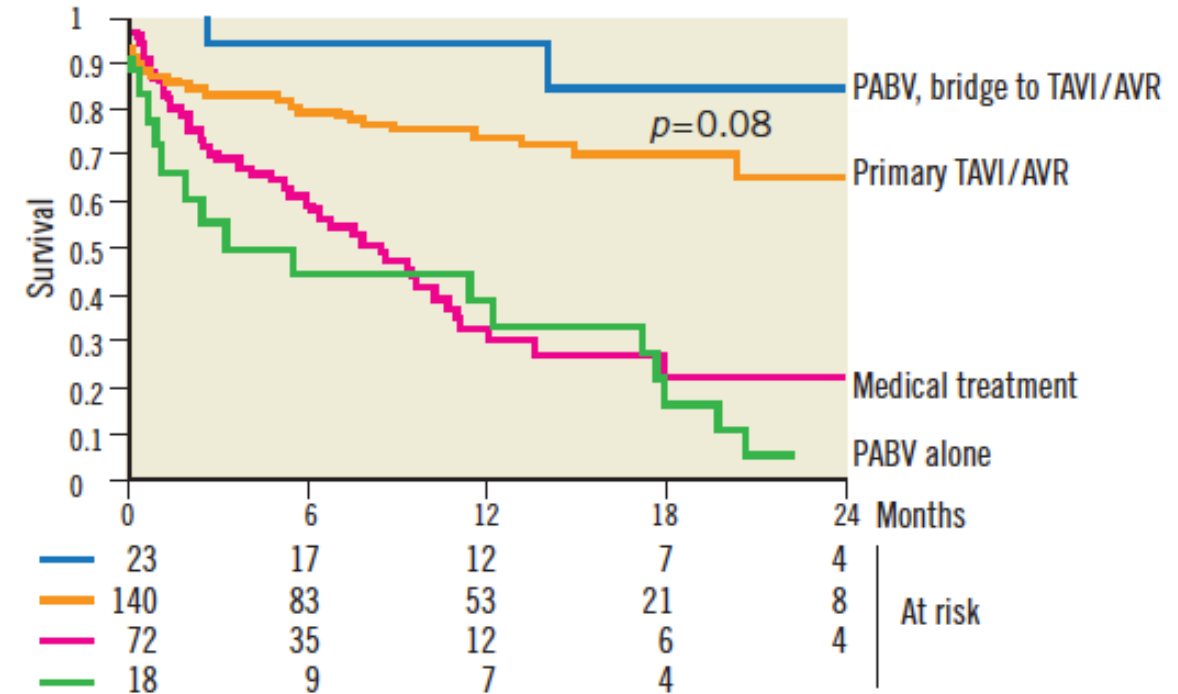


Figure 1. Management of high-risk patients with severe symptomatic aortic stenosis. Flow chart of 253 high-risk patients referred for transcatheter aortic valve implantation. AVR: aortic valve replacement; CI: contraindication; PABV: percutaneous aortic balloon valvuloplasty; TA: transapical; TAVI: transcatheter aortic valve implantation TF: transfemoral

BAV a la era TAVI

Table 1. Baseline characteristics of the whole study population.

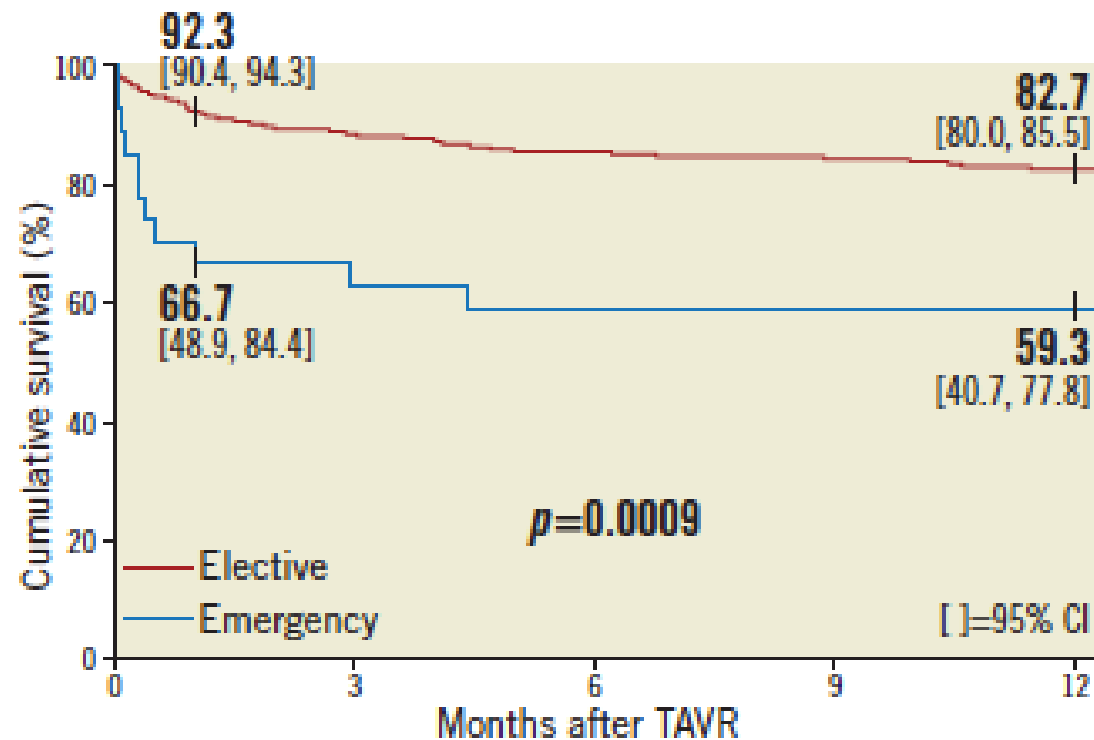
	Overall (n=253)	Primary TAVI or AVR (n=140)	PABV (n=41)	No intervention* (n=72)	p
Age (years, mean±SD)	82±8	82±8	81±8	83±9	0.27
Female gender	122 (48)	64 (46)	19 (46)	39 (54)	0.49
NYHA class			†		0.03
II	10 (4)	5 (4)	0	5 (7)	
III	147 (58)	91 (65)	15 (37)	41 (57)	
IV	96 (38)	44 (31)	26 (63)	26 (36)	
Coronary artery disease					
Previous MI	134 (61)	83 (60)	24 (67)	27 (60)	0.74
Previous PCI	55 (22)	29 (21)	11 (27)	15 (21)	0.69
Previous CABG	52 (21)	30 (21)	10 (24)	12 (17)	0.58
Peripheral artery disease	89 (35)	55 (39)	12 (29)	22 (31)	0.31
Renal failure	102 (40)	43 (31)	24 (59)†	35 (49)	0.001
Severe COPD	80 (32)	48 (34)	13 (32)	19 (26)	0.50
Cancer	64 (25)	35 (25)	13 (32)	16 (22)	0.53
Porcelain aorta	25 (10)	17 (12)	4 (10)	4 (6)	0.42
≥2 comorbidities	152 (60)	76 (54)	30 (73)	46 (64)	0.07
Aortic valve area					
cm ²	0.69±0.18	0.69±0.18	0.66±0.2	0.69±0.17	0.56
cm ² /m ²	0.40±0.10	0.40±0.1	0.39±0.09	0.40±0.11	0.76
Mean gradient (mmHg)	48±16	50±16	46±14	45±16	0.07
LVEF (%)	48±16	51±15	44±17	45±16	0.01
<30%	33 (13)	11 (8)	6 (15)	16 (22)	0.01
SPAP (mmHg)	50±14	48±13	56±17†	52±14	0.009
Logistic EuroSCORE (%)					
Mean±SD	28±16	25±12	37±22†	31±17	<0.0001
Range	3-90	3-74	10-90	3-72	
STS-PROM (%)					
Mean±SD	16±10	15±8	22±12†	15±9	0.0015
Range	3-62	3-41	7-62	3-46	



- Resultats de BAV – TAVI/AVR a curt i mig plaç equiparables als tractats amb TAVI i AVR

TAVI i shock

Emergency transcatheter aortic valve replacement in patients with cardiogenic shock due to acutely decompensated aortic stenosis



TAVI electiva

TAVI emergent

TAVI i shock

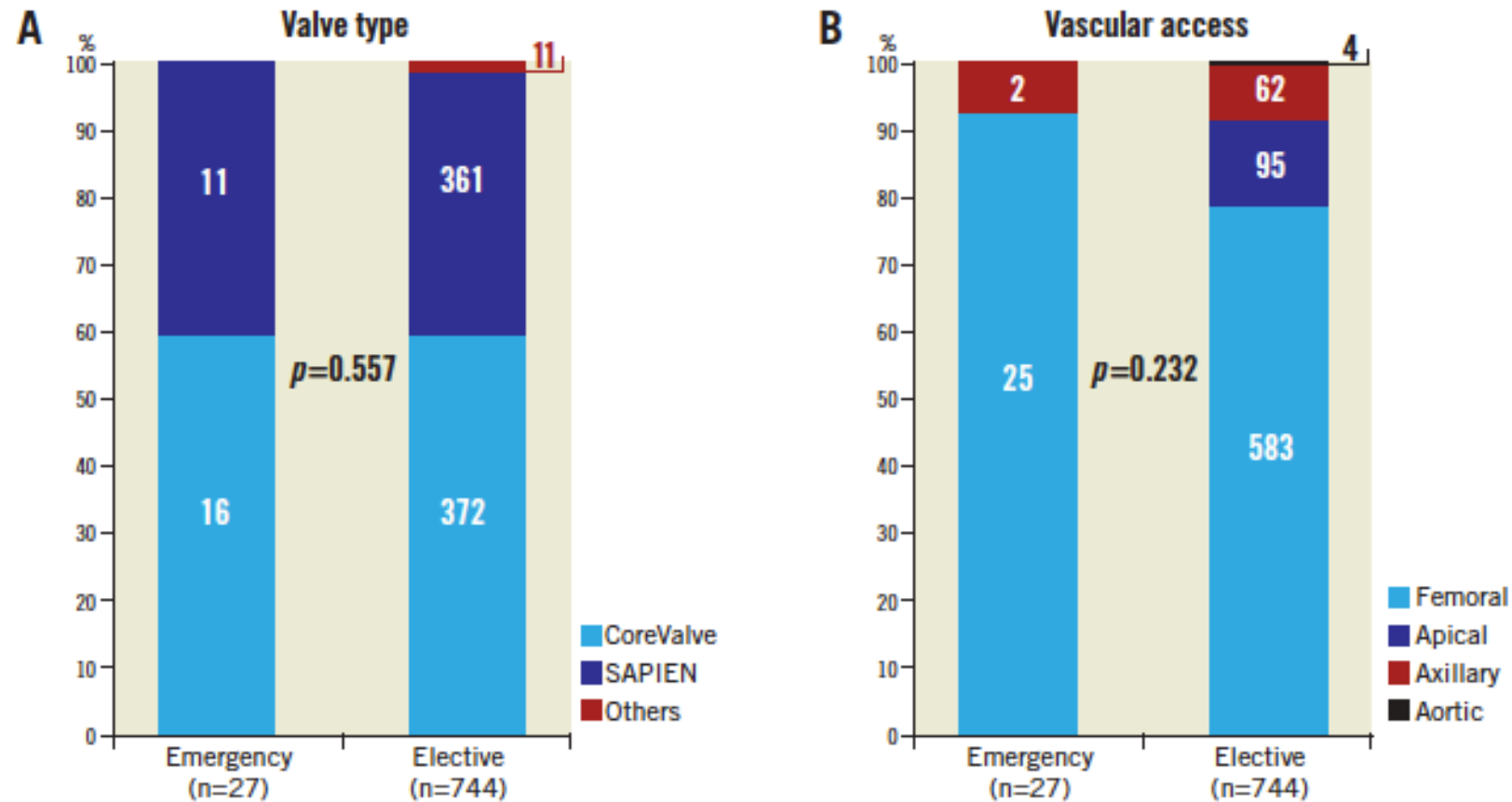
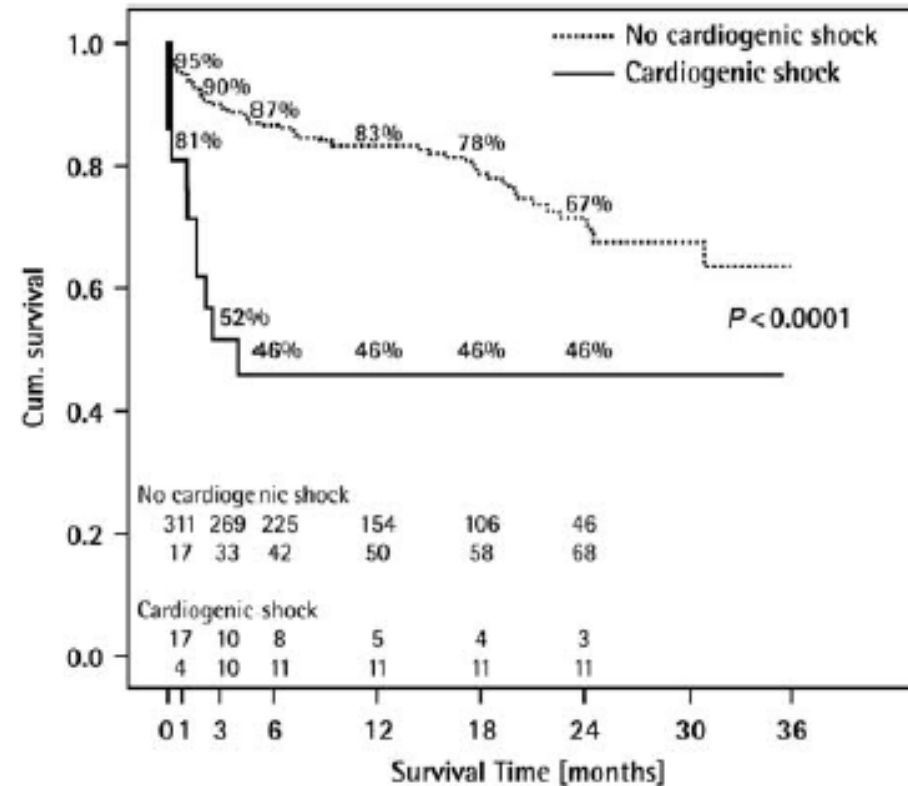


Figure 1. Types of valve prosthesis and vascular access according to TAVR modality. A) Valve prosthesis types were used in almost equal measure in both patient groups. B) Transfemoral vascular access was used in 93% of emergently treated patients and in 78% of electively treated patients.

TAVI i shock

Transapical transcatheter aortic valve replacement in patients with cardiogenic shock

Giuseppe D'Ancona, Miralem Pasic*, Semih Buz, Thorsten Drews, Stephan Dreyse, Marian Kukucka,

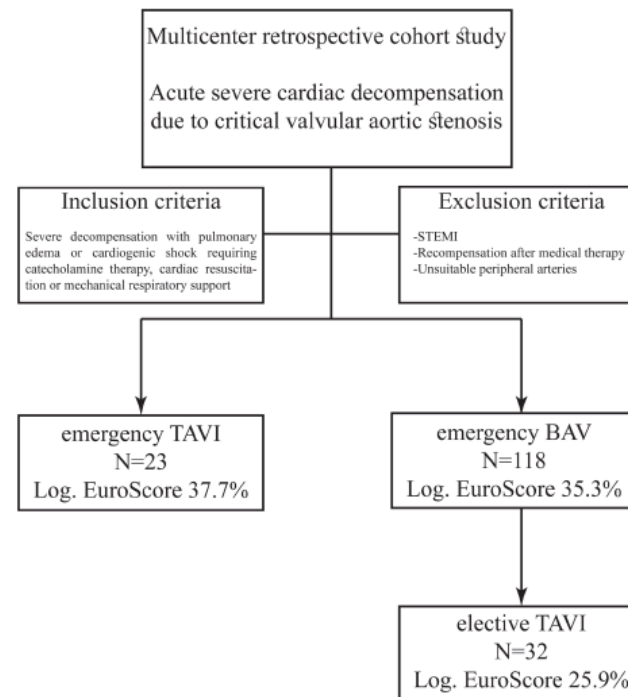


TAVI vs BAV en shock

Emergency treatment of decompensated aortic stenosis

Dario Bongiovanni,^{1,2} Constantin Kühl,^{3,4} Sabine Bleiziffer,⁵ Lynne Stecher,⁶ Felix Poch,¹

Bongiovanni D, et al. Heart 2018;104:23–29.

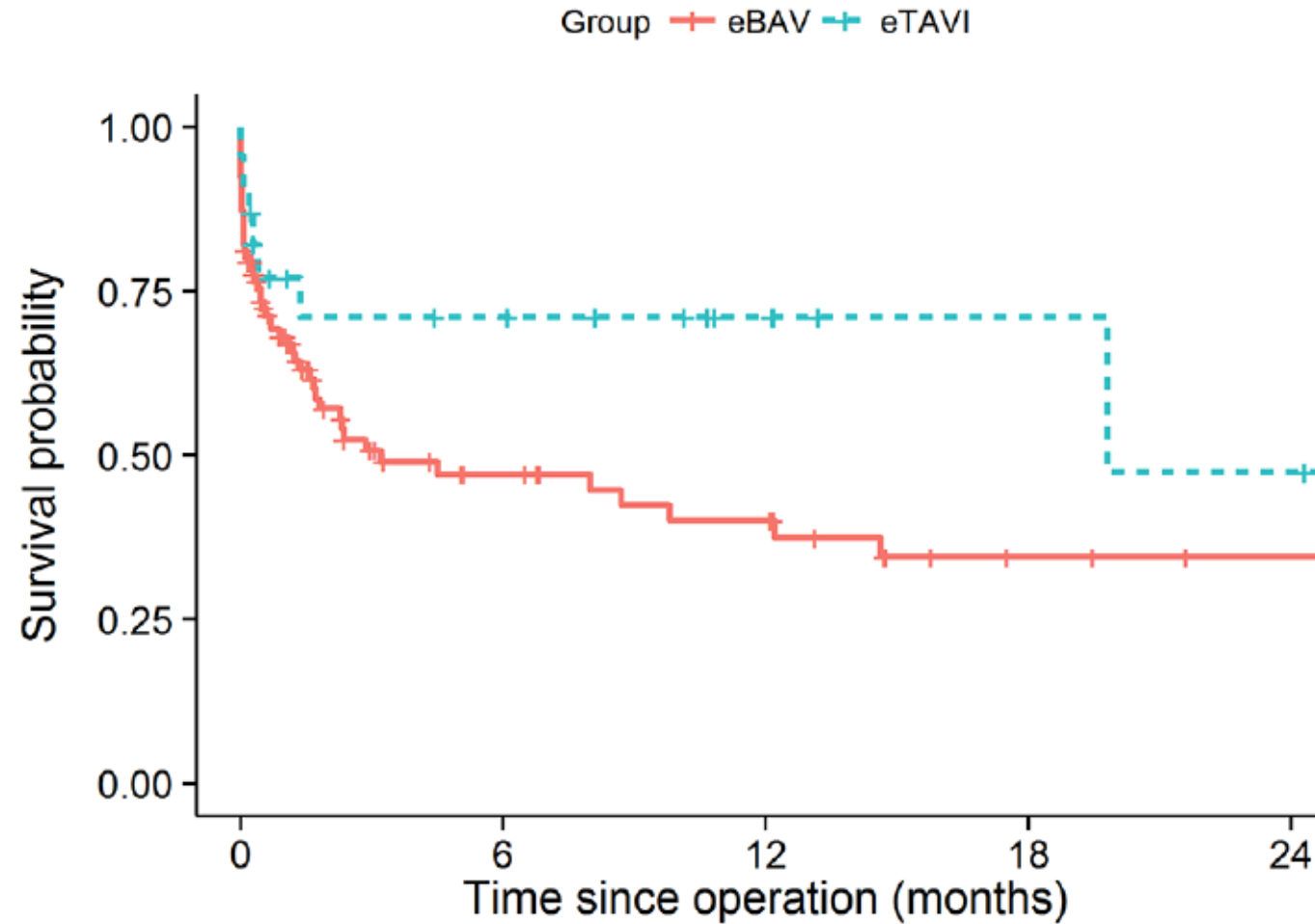


TAVI vs BAV en shock

Table 1 Baseline characteristics of study population

	eTAVI n=23	eBAV n=118	Elective TAVI after eBAV n=32
Age	76.0±11.4	81.3±7.6	81.2±6.2
Male	82.6% 19/23	55.9% 66/118	46.9% 15/32
Logistic Euroscore %	37.7±18.1	35.3±20.8	25.9±13.9
Coronary artery disease	65.2% 15/23	64.3% 74/115	59.4% 19/32
One-vessel disease	21.7% 5/23	12.2% 14/115	12.5% 4/32
Two-vessel disease	17.4% 4/23	20.9% 24/115	21.9% 7/32
Three-vessel disease	26.1% 6/23	31.3% 36/115	25.0% 8/32
PCI in the last 30 days	13.0% 3/23	21.7% 25/115	12.5% 4/32
Previous PCI (>30 days)	17.4% 4/23	16.5% 19/115	21.9% 7/32
Previous CABG	8.7% 2/23	13.0% 15/115	6.3% 2/32
Previous MI	17.4% 4/23	42.2% 49/115	37.5% 12/32
Atrial fibrillation	30.4% 7/23	61.4% 54/88	46.9% 15/32
Peripheral artery disease Fontaine ≥II	17.4% 4/23	19.3% 17/88	9.4% 3/32
Pacemaker before intervention	4.3% 1/23	15.2% 16/105	13.8% 4/29
Active malignancy	8.7% 2/23	25.3% 20/79	6.7% 2/30
Chronic pulmonary disease	21.7% 5/23	16.4% 9/55	6.5% 2/31

TAVI vs BAV in shock



TAVI vs BAV shock

Table 2 Mortality according to VARC-2 criteria

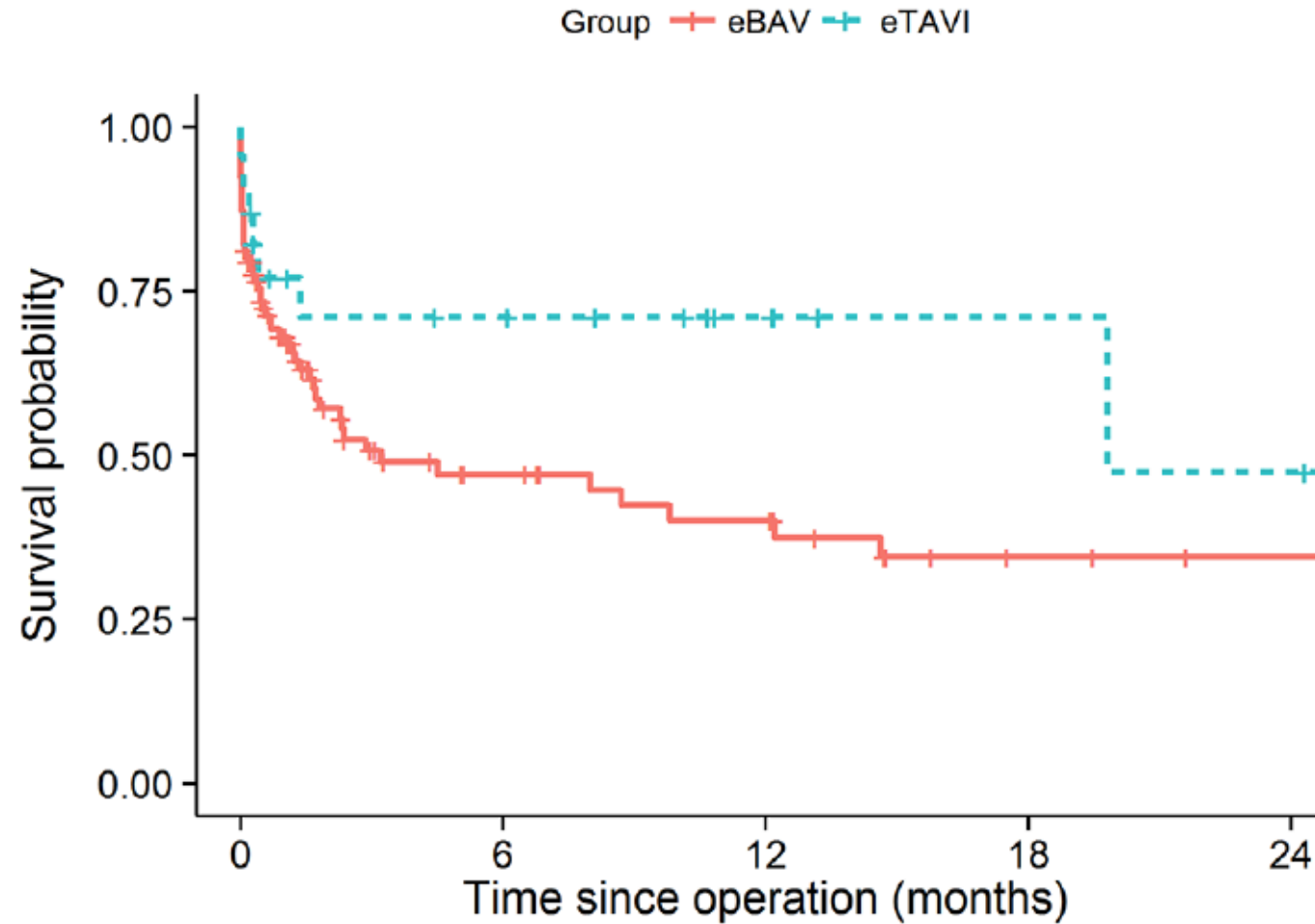
	eTAVI n=23	eBAV n=118	p Value, unadjusted	p Value, adjusted*	Elective TAVI after eBAV n=32	p Value versus eTAVI, unadjusted	p Value versus eTAVI, adjusted*
All-cause immediate procedural mortality <72 hours	8.7% 2/23	20.3% 24/118	0.19	p=0.53 OR=2.87 (1.26–126.1)	9.4% 3/32	0.93	p=0.59 OR=2.15 (0.15–55.6)
Cardiovascular immediate procedural mortality <72 hours	8.7% 2/23	19.5% 23/118	0.22	p=0.53 OR=2.87 (1.26–126.1)	9.4% 3/32	0.93	p=0.59 OR=2.15 (0.15–55.6)
All-cause 30-day mortality	23.8% 5/21	33.0% 37/112	0.40	p=0.54 OR=0.63 (0.14–2.64)	21.9% 7/32	0.87	p=0.68 OR=1.52 (0.21–13.6)
Cardiovascular 30-day mortality	23.8% 5/21	28.6% 32/112	0.65	p=0.72 OR=0.76 (0.15–3.35)	15.6% 5/32	0.45	p=0.59 OR=0.57 (0.07–4.46)

TAVI vs BAV shock

Table 3 Clinical outcome according to VARC-2 criteria

	eTAVI n=23	eBAV n=118	p	Elective TAVI after eBAV n=32	p Value versus eTAVI
Bleeding	17.4% 4/23	17.2% 20/116	0.98	34.4% 11/32	0.16
Life threatening	4.3% 1/23	0.9% 1/116	0.20	3.1% 1/32	0.81
Major	4.3% 1/23	12.9% 15/116	0.24	21.9% 7/32	0.07
Minor	8.7% 2/23	3.4% 4/116	0.56	9.4% 3/32	0.93
Vascular complications	21.7% 5/23	12.9% 15/116	0.27	15.6% 5/32	0.56
Major	17.4% 4/23	3.4% 4/116	0.01	12.5% 4/32	0.61
Minor	4.3% 1/23	9.5% 11/116	0.42	3.1% 1/32	0.81
Myocardial infarction	0 0/23	4.4% 5/113	0.39	3.1% 1/32	0.39
Stroke	8.7% 2/23	0 0/118	0.01	6.3% 2/32	0.73
Pacemaker implantation	8.7% 2/23	7.8% 4/51	0.51	12.9% 4/32	0.62
Acute kidney injury	20.0% 3/15	30.6% 26/85	0.41	33.3% 9/27	0.36
Stage 1	21.7% 5/23	11.2% 10/89	0.06	16.7% 5/30	0.07
Stage 2	13.0% 3/23	2.2% 2/89		0 0/30	
Stage 3	0 0/23	15.7% 14/89		13.3% 4/30	
Aortic regurgitation ≥II (up to III)	4.3% 1/23	27.1% 19/70	0.02	12.9% 4/31	0.28

TAVI vs BAV en shock



Suport circulatori i TAVI



TCT-100

Emergency TAVR for Cardiogenic Shock—right heart function and early mechanical circulatory support improve outcomes

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Successful use of percutaneous ECMO and intra-aortic balloon support for a rescue valve in valve TAVR procedure in a patient in cardiogenic shock

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PMID: [30113488](https://pubmed.ncbi.nlm.nih.gov/30113488/)

Aortic stenosis complicated by cardiogenic shock treated by transcatheter aortic valve replacement with extracorporeal membrane oxygenation

A case report

[Jiabing Huang](#), MD, PhD, [Pengfei Chen](#), MD, PhD, [Xinqun Hu](#), MD, PhD, [Jianjun Tang](#), MD, PhD, and [Zhenfei Fang](#), MD, PhD*

Conclusions



- Estudis de tractament urgent d'estenosi aòrtica i shock són observacionals, amb les seves limitacions inherents.
- La BAV té uns bons resultats en aquest escenari, no superats per la TAVI, i permet optimitzar el maneig d'aquests pacients (millorar el seu estat clínic, completar avaluació clínic, TC)...a més en cas de complicació (IAo massiva) es podria fer escalada a TAVI urgent.
- El codi TAVI pot ser una opció per pacients seleccionats (ja coneguts, amb escassa comorbiditat, joves i amb IAo).
- “In this age of treatment algorithms and rigid guidelines, it is refreshing to highlight the value of clinical judgement gained through corporate experience”



GRÀCIES!