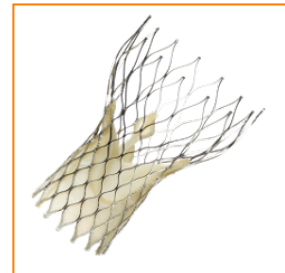
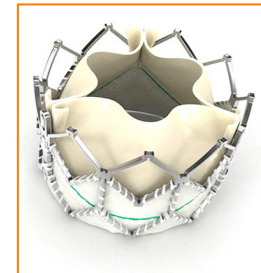
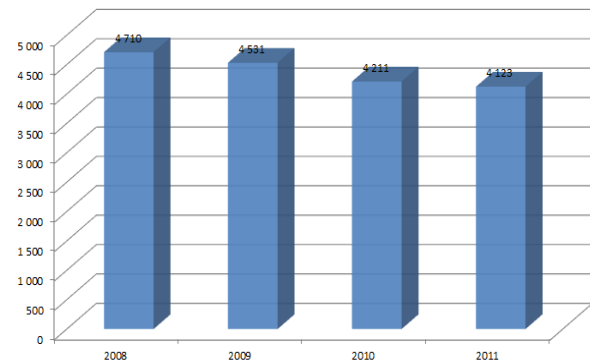
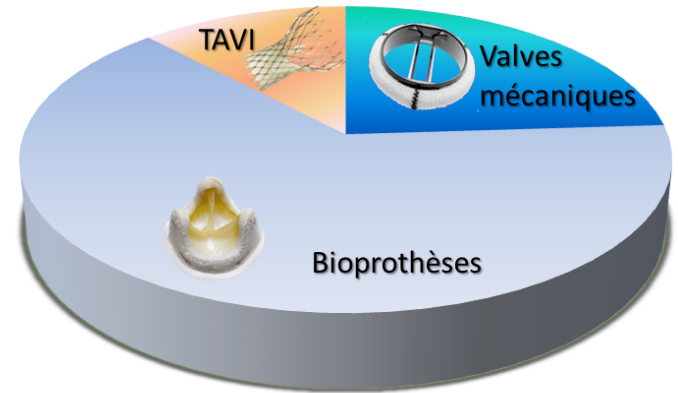


Rétrécissement Valvulaire Aortique

Quelles valves pour quels patients ?



Evolution de l'activité de RVA en France



T.A.V.I. & Chirurgie – Chirurgie des T.A.V.I.



Percutaneous Heart Valve



Tricuspid bioprosthesis

- PIIV**
- Highly resistant stent
- Equine pericardium
- Optimal hemodynamic
- > 5 years in bench testing



T.A.V.I. & Chirurgie – Chirurgie des T.A.V.I.



Percutaneous Heart Valve



Tricuspid bioprosthesis

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T.A.V.I. & Chirurgie – Chirurgie des T.A.V.I.



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T.A.V.I. & Chirurgie – Chirurgie des T.A.V.I.



Percutaneous Heart Valve



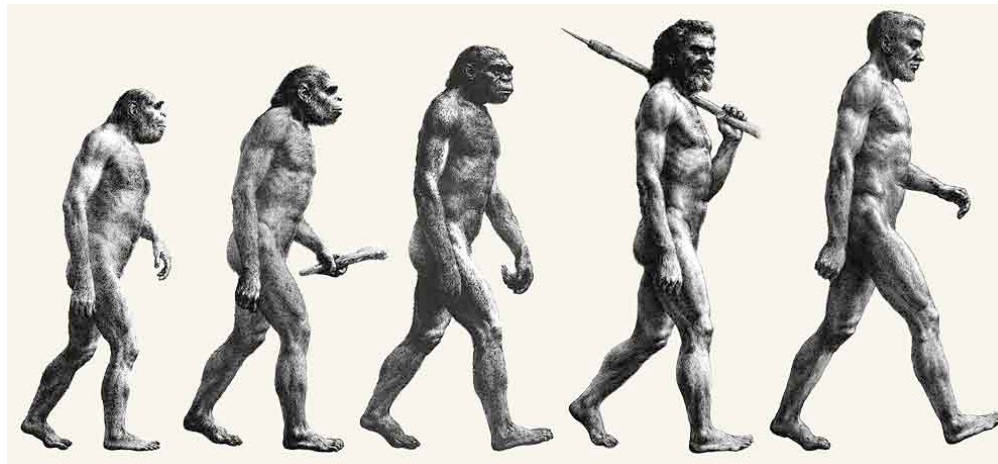
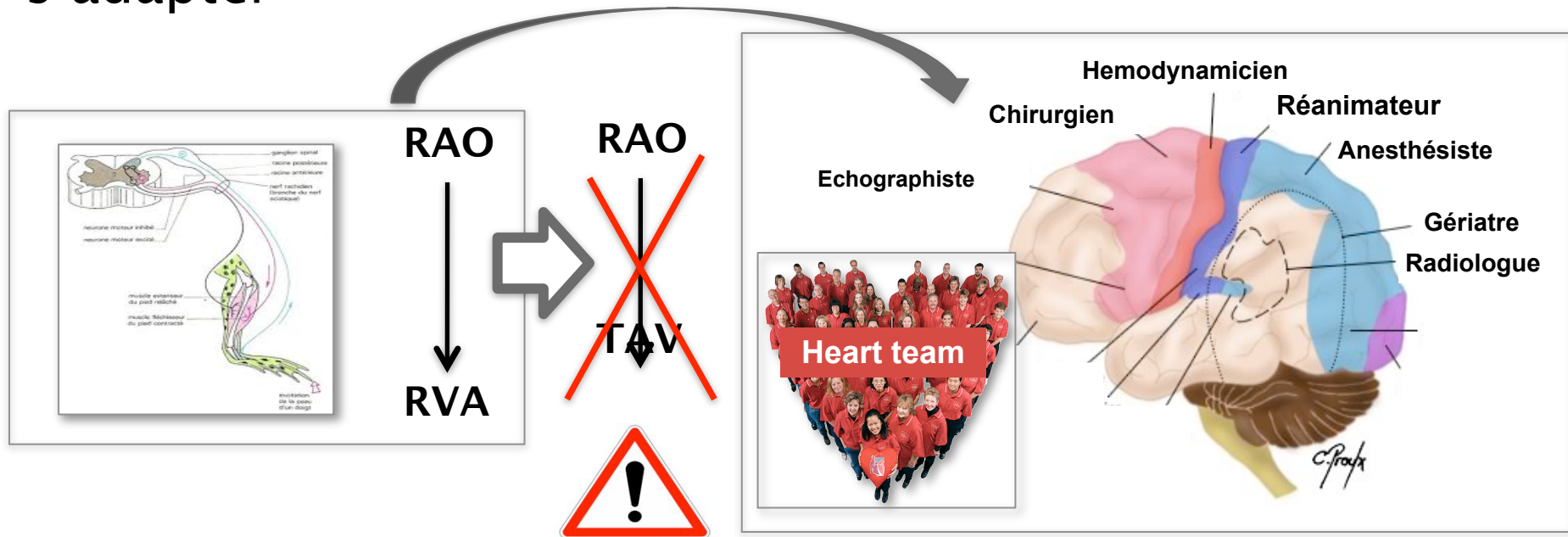
Tricuspid bioprosthesis

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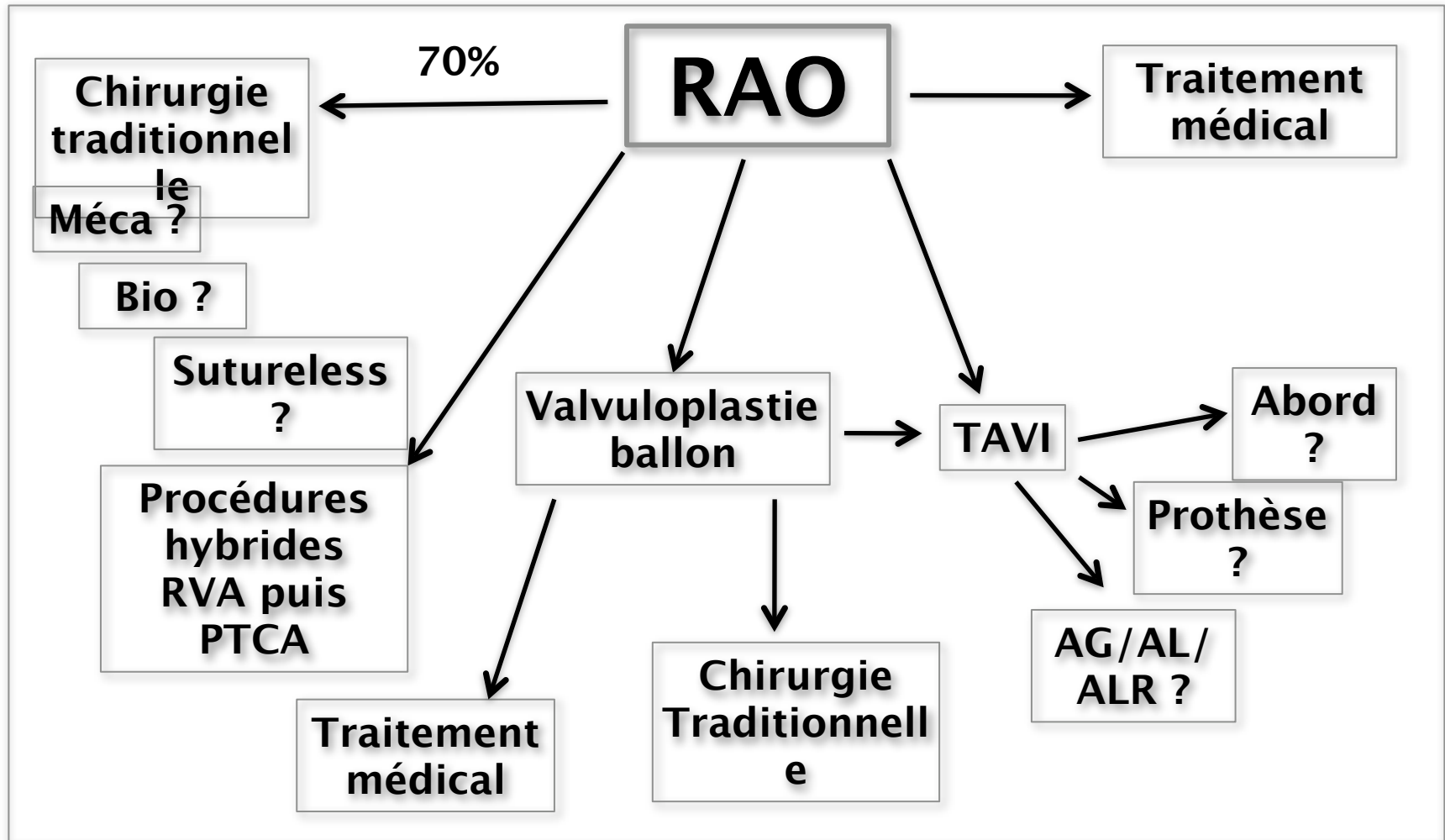
Heart Team : la théorie de l'évolution ... Etre capable de s'adapter



Chirurgien
Cardiologue

Homo Sapiens
XT
Praticien
Hybride

Eventail des options thérapeutiques considérablement élargi



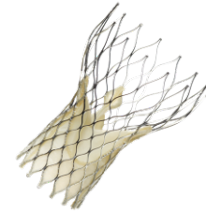
Prothèses valvulaires actuellement disponibles



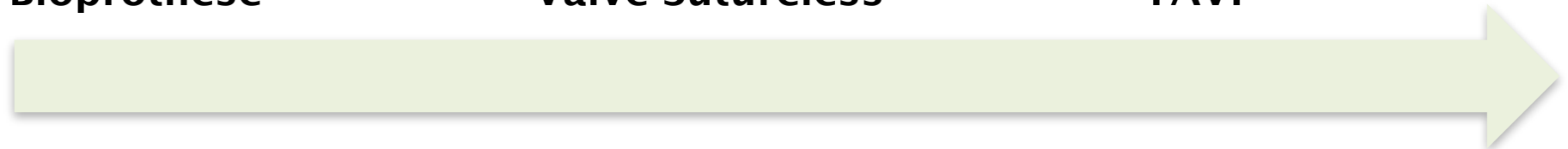
Bioprothèse



Valve Sutureless



TAVI



- Valve 'tout venant'
- Facilité d'implantation
- Durabilité prouvée à 20 ans

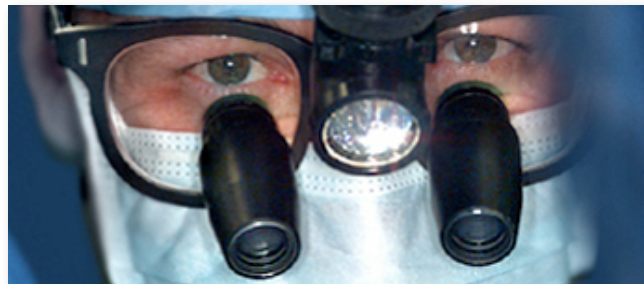
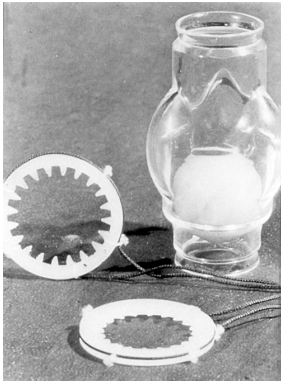
- Patients à haut risque
- Procédures concomittantes
- MICS
- Petits anneaux
- Anneaux calcifiés

- Patients inopérables
- Importance de Heart Team
- Diversification des voies d'abord
- 10 ans de recul, 50 000 pts
- Études cliniques Partner, Advance
- ~ 50% pts CoreValve inclus dans programme clinique
- Consensus (VARC 1 & 2)

Chirurgie traditionnelle



Gibbons 1953



Résultats de la chirurgie traditionnelle : mortalité

Standards internationaux : Mortalité = 3%

- Mayo clinic (Sarano E, Schaff)
 - 2000–2006 : 1177 RVAO, 68 ye
 - Logistic Euroscore : 10.9 % $\pm$ 1
 - Mortality 2.4 %

Table IV: Observed and expected mortality in EuroSCORE subgroups.

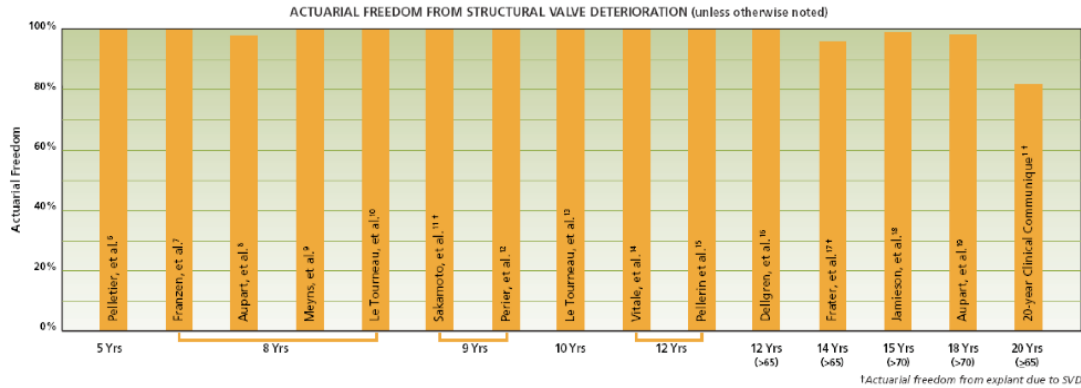
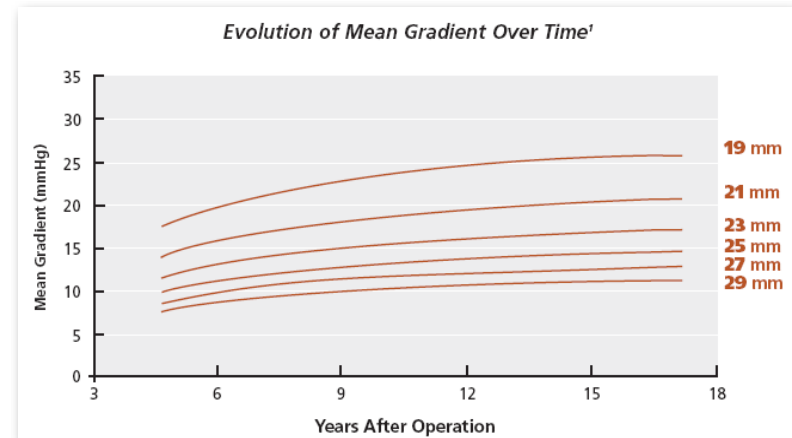
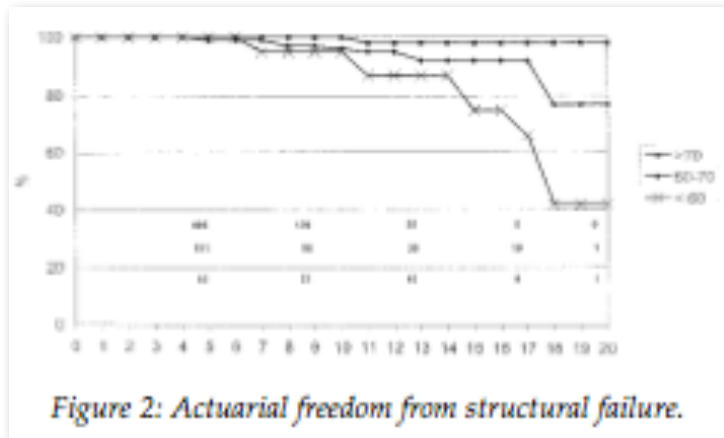
Risk category	n	Mortality (%)	Additive EuroSCORE	Logistic EuroSCORE (%)
Low <9	104	7.7	7.6	8.1
Moderate 9-10	59	6.8	9.4	14.4
High >10	37	5.4	12.6	33.3

- France (Epicard)
 - Mortality : 3.1 %
 - Low risk : 0.47 %
 - Moderate : 0.64 %
 - High Risk : 4.1 %

Réinterventions

Euroscore	n	Mortality	Additive Euroscore
Low risk 5-7	75	1.3%	5.8
Moderate 8-11	60	0,05	9.3
High risk >11	21	9.5%	13.3

Résultats de la chirurgie traditionnelle : Durabilité

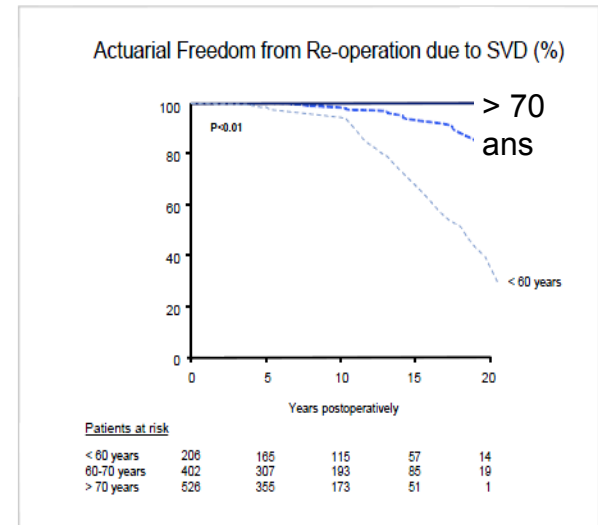


Perimount Pericardial Bioprosthesis for Aortic Calcified Stenosis: 18-Year Experience with 1,133 Patients

Michel R. Aupart, Alain Mirza, Yvon A. Meurisse, Agnes L. Sirinelli, Paul H. Neville, Michel A. Marchand

Hemodynamic Stability During 17 Years of the Carpentier-Edwards Aortic Pericardial Bioprosthesis

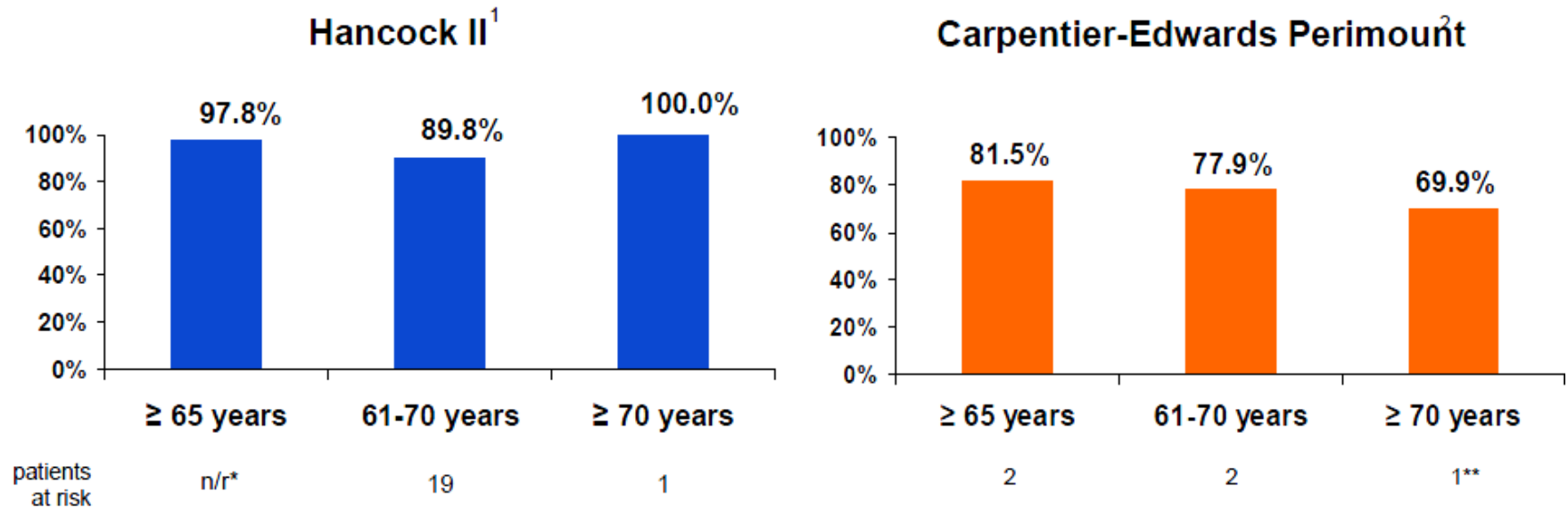
Michael K. Banbury, MD, Delos M. Cosgrove III, MD, James D. Thomas, MD, Eugene H. Blackstone, MD, Jeevanantham Rajeswaran, MS, J. Edward Okies, MD, and Robert M. Frater, MD



David et al, AnnThorac Surg 2010;90775-81

Résultats de la chirurgie traditionnelle : Durabilité

Absence de ré-intervention liée à une détérioration structurelle de la valve à 20 ans

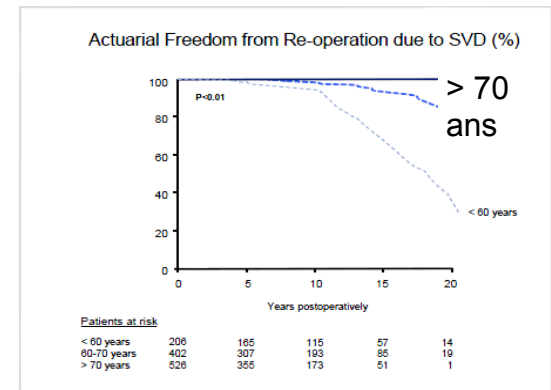


1. David et al, Ann Thorac Surg 2010;90:775-81

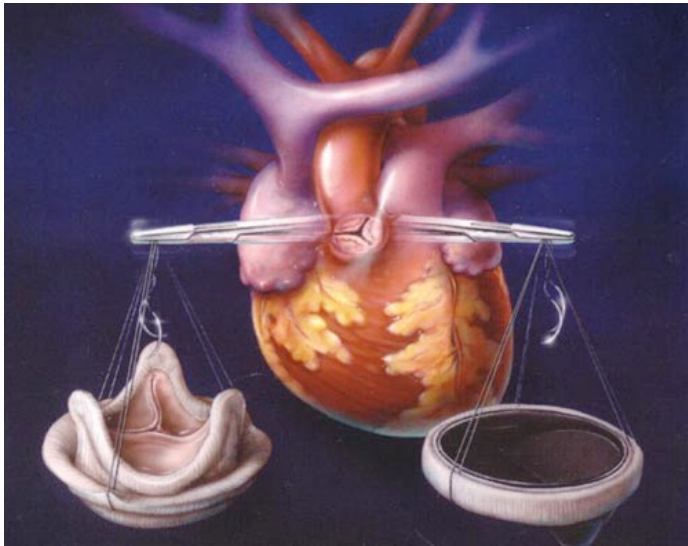
2. Clinical Communiqué – 20 year results on Carpentier-Edwards Perimount Aortic Pericardial Bioprosthesis – © 2003 Edwards Lifesciences LLC

* There are 20 patients 60-year or older at risk at 20 years, 1 being older than 70 years.

** 1 patient at risk at 18 years, none at 20 years.



Quelle limite d'âge pour l'implantation d'une bioprothèse aortique ?



- Arrière pensée d'un TAVI valve in valve
- Contre indications
- Difficultés techniques
- Gradients élevés
- Nécessité d'une prothèse spécifique
- Chirurgie redux bas risque ...
- Plutôt choisir la meilleure bioprothèse



60 – 65 ans à discuter au cas par cas

Innovations en chirurgie traditionnelle ?



Nouvelles bioprothèses « traditionnelles » :

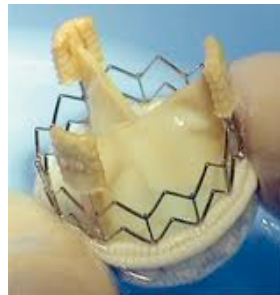
- Meilleure hémodynamique
- Durabilité ?

Bioprothèses sutureless

Chirurgies combinées ?

Petits anneaux ?

Racines aortiques calcifiées ?



La chirurgie mini-invasive
&
La chirurgie robotique ?



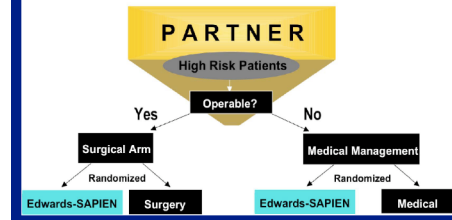
TAVI : ce que l'on sait ... Partner

The NEW ENGLAND JOURNAL of MEDICINE

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

Martin B. Leon, M.D., Craig R. Smith, M.D., Michael Mack, M.D., D. Craig Miller, M.D., Jeffrey W. Moses, M.D., Lars G. Svensson, M.D., Ph.D., E. Murat Tuzcu, M.D., John G. Webb, M.D., Gregory P. Fontana, M.D., Raj R. Makkar, M.D., David L. Brown, M.D., Peter C. Block, M.D., Robert A. Guyton, M.D., Augusto D. Pichard, M.D., Joseph E. Bavaria, M.D., Howard C. Herrmann, M.D., Pamela C. Douglas, M.D., John L. Petersen, M.D., Jodi J. Alkin, M.S., William N. Anderson, Ph.D., Duolao Wang, Ph.D., and Stuart Pocock, Ph.D., for the PARTNER Trial Investigators*

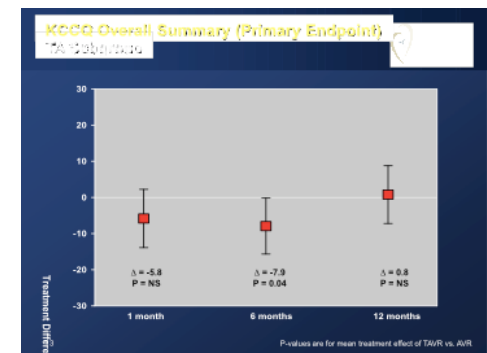
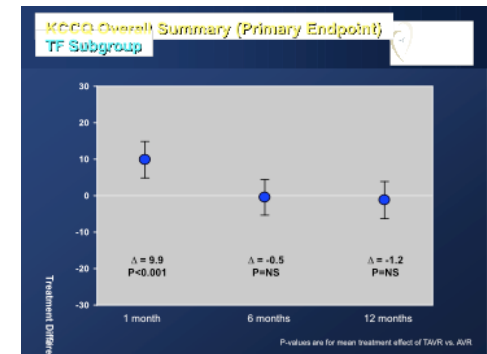
Placement of Aortic Transcatheter Valves



- Supériorité au traitement médical
- Non infériorité à la chirurgie pour les patients à haut risque

Cohort A

Cohort B



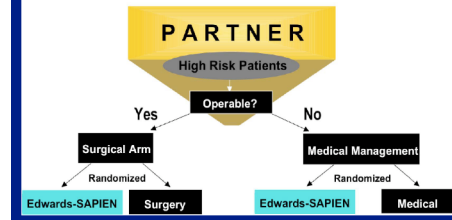
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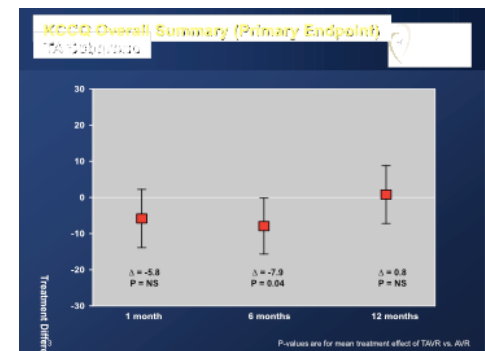
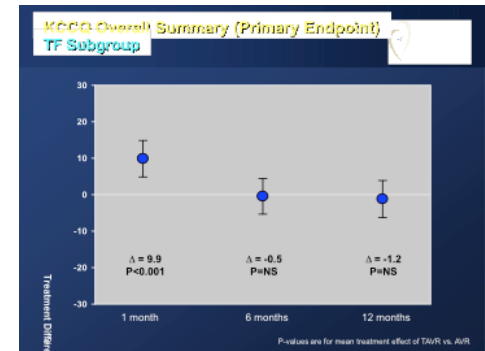
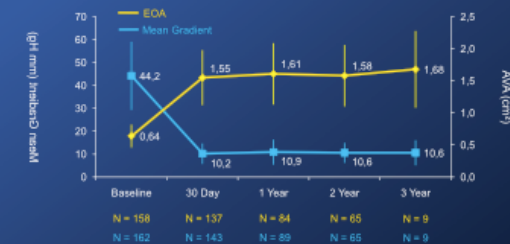


- Supériorité au traitement médical
- Non infériorité à la chirurgie pour les patients à haut risque

Cohort A

Cohort B

Mean Gradient & Valve Area



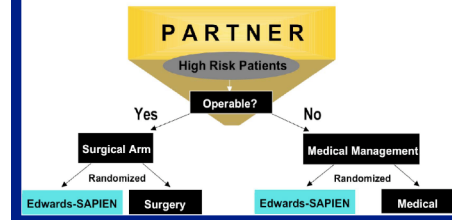
TAVI : ce que l'on sait ... Partner

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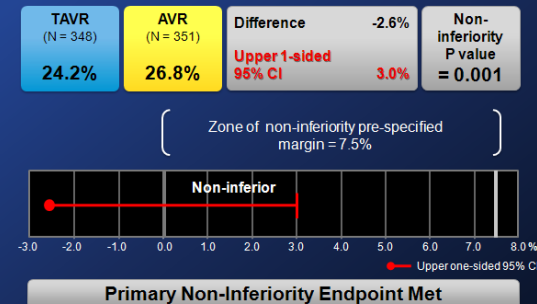
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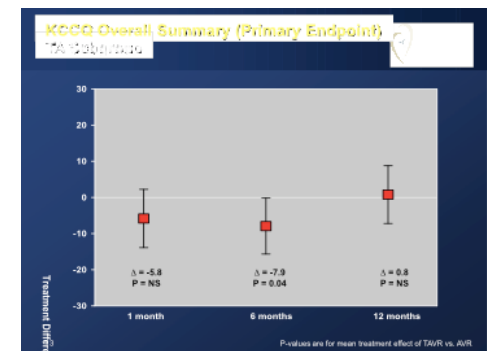
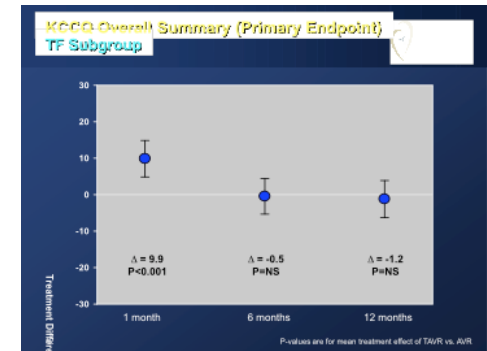
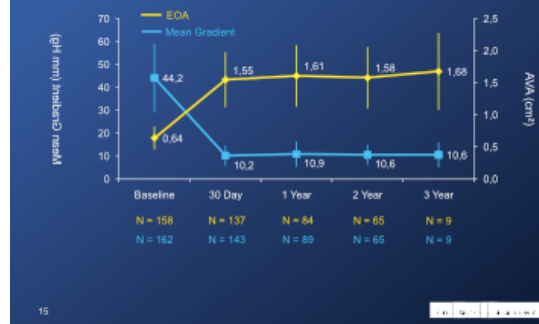
Cohort A

Primary Endpoint: All-Cause Mortality at 1 Year



Cohort B

Mean Gradient & Valve Area

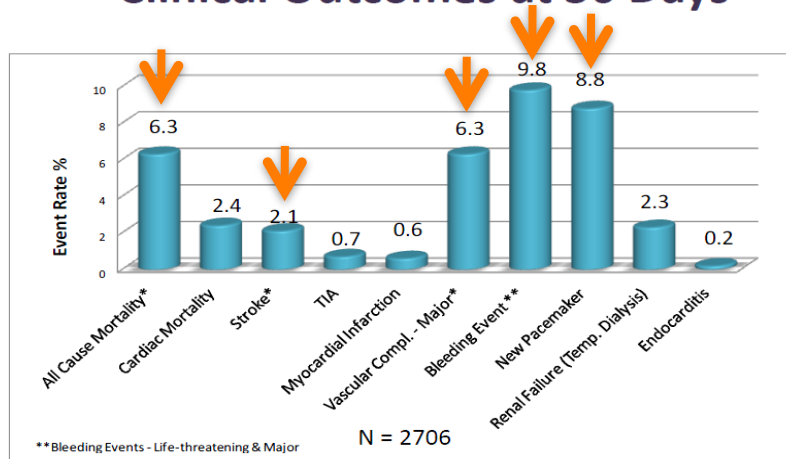


TAVI : ce que l'on sait ... Source XT

Source XT registry

EURO
PCR
2012

Clinical Outcomes at 30 Days



* VARC definitions /CEC Adjudicated

EURO
PCR

THE
SOURCE XT
REGISTRY

Clinical Outcomes at 30 Days

Clinical Outcome	Transfemoral N = 1694	Transapical N = 906
All-cause Mortality (%)*	4.3	9.9
Any Stroke (%)*	2.3	2.1
TIA (%)	0.6	0.7
Myocardial Infarction (%)	0.5	0.7
New Pacemaker (%)	8.0	10.9
Vascular Complication – Major (%)*	7.3	3.6
Renal Failure with Temporary Dialysis (%)	1.2	4.0
Major Bleeding (%)	5.0	11.4

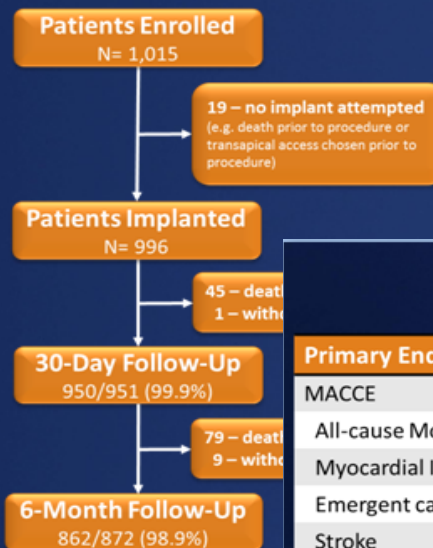
* VARC definitions /CEC Adjudicated

TAVI : ce que l'on sait ... Advance

CoreValve ADVANCE

CoreValve ADVANCE | Methods

- 1,015 patients enrolled from March 2010 to July 2011
 - 5 year follow-up
- 44 centers - 12 countries in Western Europe, Asia and South America
- All centers had conducted at least 40 TAVI procedures prior to the study and had Heart Team in place
- Clinical endpoints reported according to Valve Academic Research Consortium (VARC)



CoreValve ADVANCE | 30-day Outcomes

Primary Endpoint	N=996	Kaplan-Meier Estimates, %
MACCE		8.3
All-cause Mortality		4.5
Myocardial Infarctions		0.2
Emergent cardiac surgery or percutaneous re-intervention		1.7
Stroke		2.9

Additional VARC Endpoints	N=996	Kaplan-Meier Estimates, %
Cardiovascular Mortality		3.4
Major Bleeding		9.7
Life Threatening Bleeding		4.0
Major Vascular Complications		10.7
Acute Kidney Injury - Stage III		0.4

Additional Endpoint	N=996	Kaplan-Meier Estimates, %
New Pacemaker Implantation		26.3

TAVI : ce que l'on sait ... les AVC

Risk of stroke after transcatheter aortic valve implantation (TAVI): a meta-analysis of 10,037 published patients

Holger Eggebrecht¹, MD, FESC; Axel Schmermund¹, MD, FESC; Thomas Voigtländer¹, MD, FESC; Philipp Kahlert², MD; Raimund Erbel², MD, FESC, FACC, FAHA; Rajendra H. Mehta³, MD, MS

1. Cardioangiologisches Center Bethanien (CCB), Frankfurt, Germany; 2. Department of Cardiology, West-German Heart Center Essen, University Duisburg-Essen, Essen, Germany; 3. Duke Clinical Research Institute, Durham, NC, USA

EuroIntervention 2012; 7-online publish-ahead-of-print March 2012

Table 3. Incidence of stroke.

	Number of publications with available data (n)	Overall number of patients with available data (n)	Number of events (n)	Weighted mean±SD
Procedural stroke (<24h)	24	3041	47	1.5±1.4%
30-day stroke/TIA	53	10037	334	3.3±1.8%
30-day major stroke	42	5514	158	2.9±1.8%
30-day minor stroke/TIA	42	5514	53	1.0±1.3%
30-day overall mortality	52	10022	812	8.1±3.9%
<u>30-day mortality in patients suffering stroke</u>	29	4430	41	25.5±21.9%
<u>30-day mortality in patients without stroke</u>	29	4430	312	6.9±4.2%

TAVI : ce que l'on sait ... les fuites para valv.

Italian CoreValve Registry

Multivariate analysis

Late mortality	Hazard ratio	95% LCL	95% UCL	p value
Prior stroke	5.468	1.47	20.39	0.01
Post-procedural paravalvular leak $\geq 2+$	3.785	1.57	9.10	0.003
Prior acute pulmonary edema	2.696	1.09	6.68	0.03
Chronic kidney disease	2.532	1.01	6.35	0.048

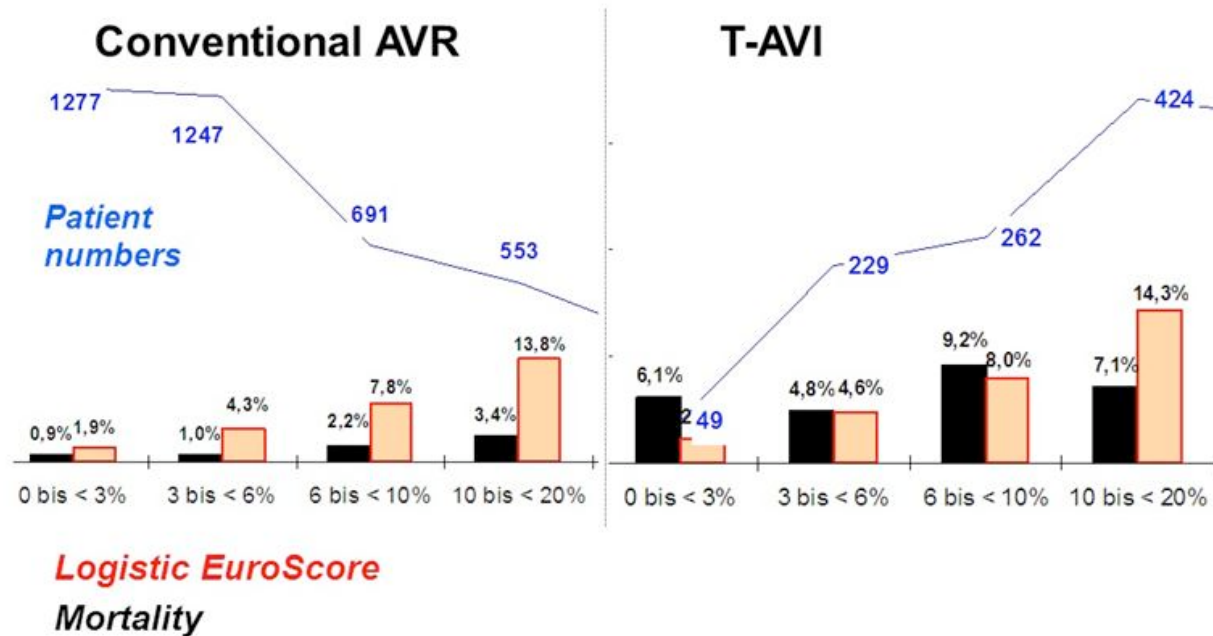
TAVI : ce que l'on sait ... Bas risque ?

AV - surgery in Germany 2010

KERCKHOFF HERZ- UND THORAXZENTRUM



- Subgroup analysis, outcome versus EuroScore



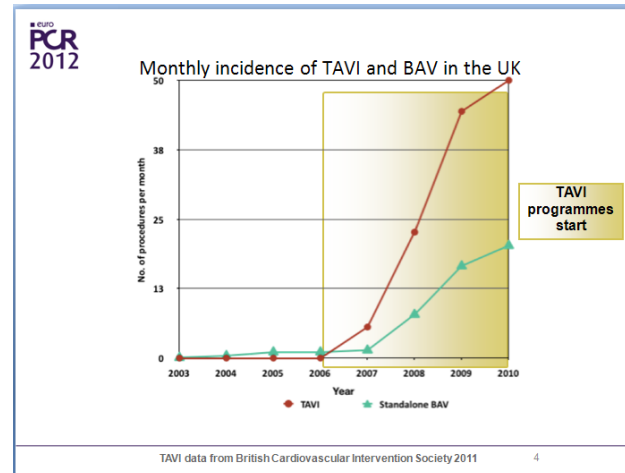
TAVI : ce que l'on sait ... La valvuloplastie

Standalone Balloon Valvuloplasty

Indications & Outcomes from the UK in the TAVI era

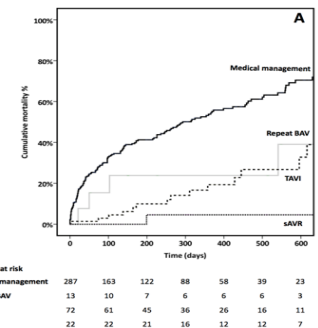
Dr M. Zeeshan Khawaja

King's College London & St Thomas' Hospital
United Kingdom

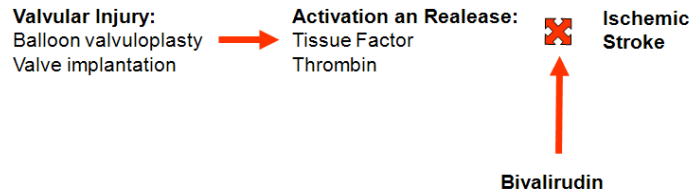
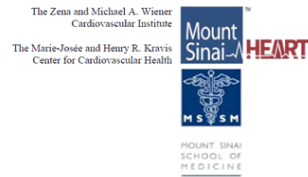


	Pre-procedure	Post procedure	p value
Peak transaortic gradient (Direct catheter)	77.8±28.1	28.3±16.2	p<0.0001
Peak transaortic gradient (Echocardiographic)	62.0±26.3	53.5±19.9	p<0.0001
Aortic valve area (cm²)	0.58±0.19	0.80±0.25	p<0.0001
Aortic systolic pressure (mmHg)	119.7±31.1	133.1±28.5	p<0.0001
Aortic regurgitation grade			
none	84 (19.9%)	41 (9.7%)	p<0.0001
mild	262 (61.9%)	276 (65.2%)	
moderate	54 (12.8%)	51 (12.1%)	
severe	6 (1.4%)	1 (0.2%)	

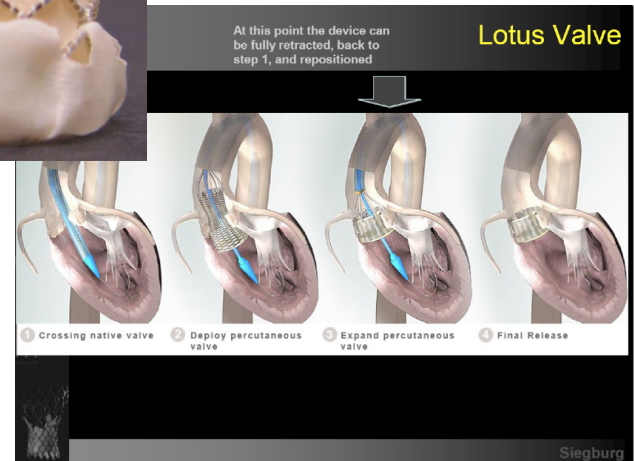
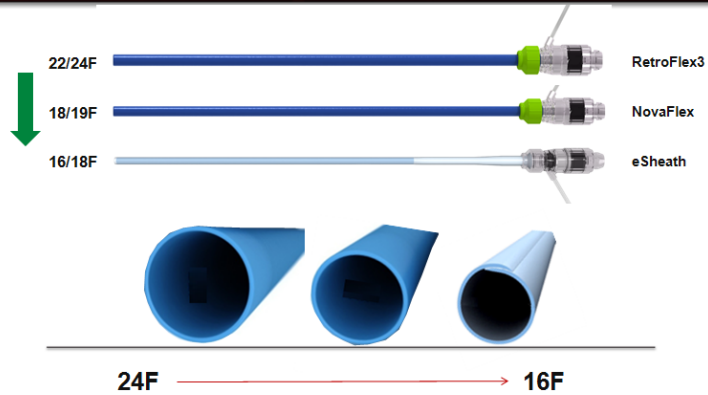
- Major complications in only 6.3% of cases
 - Death (2.4%)
 - Transfusion of ≥ 2 units packed RBC (1.2%)
 - Cardiac tamponade (1.0%)
 - Stroke (1.0%)
 - Surgical vascular access repair (1.0%)
 - Coronary embolism (0.5%)
 - Permanent pacemaker (0.2%)



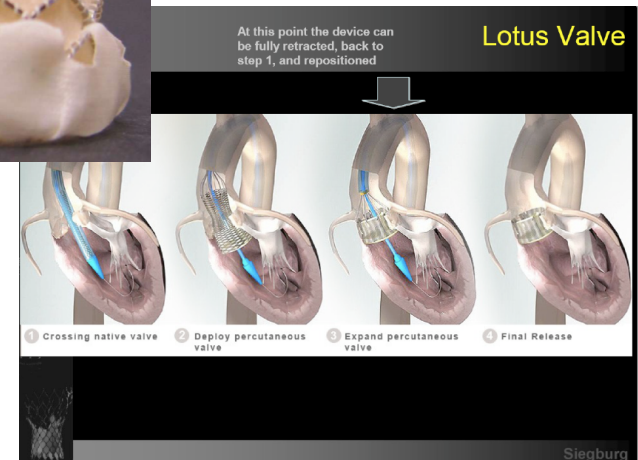
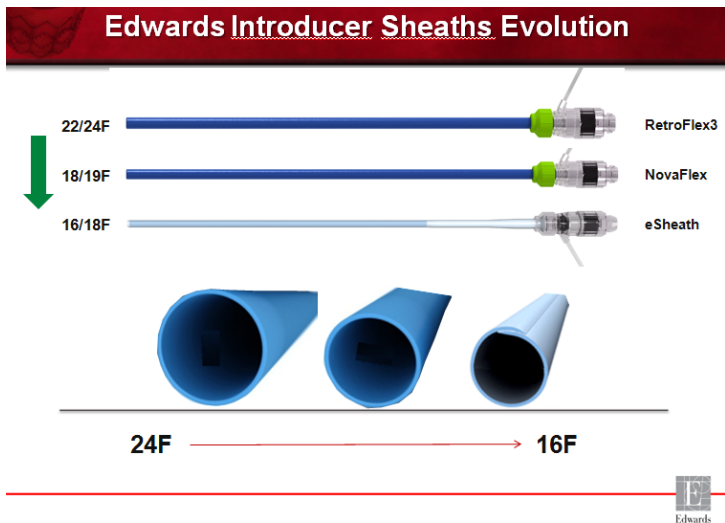
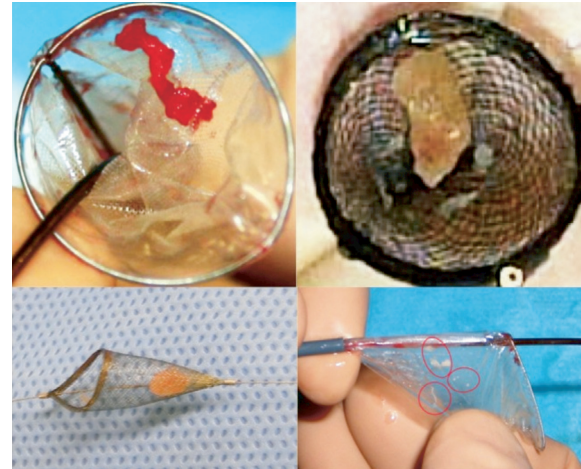
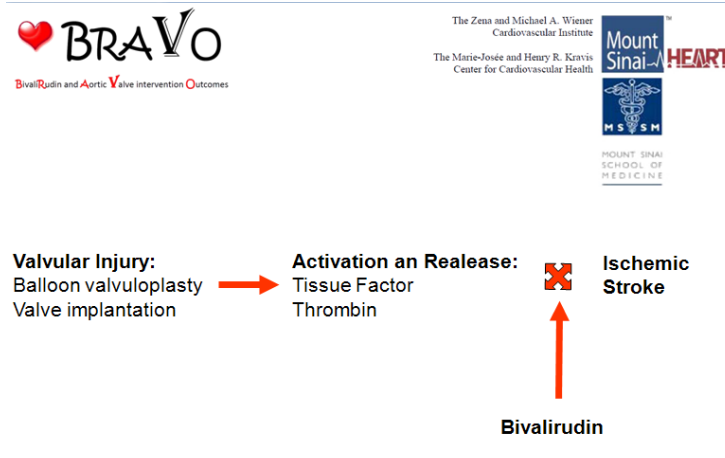
TAVI : les améliorations à venir ...



Edwards Introducer Sheaths Evolution



TAVI : les améliorations à venir ...



Rétrécissement Valvulaire Aortique

Quelles valves pour quels patients ?

