

# Les 20 ans du TAVI

## Le candidat idéal

**Christophe Caussin**  
**IMM Paris**



## Déclaration de liens d'intérêt potentiels

**Intervenant : Christophe Caussin Paris**

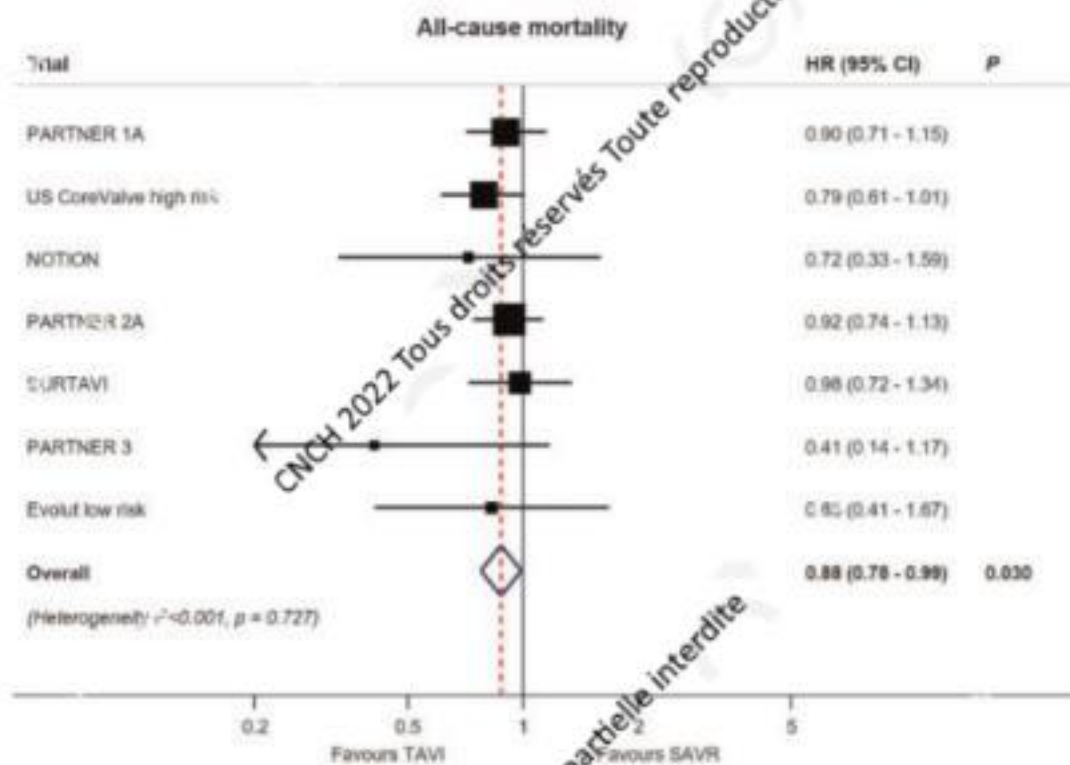
Je déclare les liens d'intérêt potentiels suivants :

- Proctor Honoraires Medtronic, Edwards, Abbott, Boston

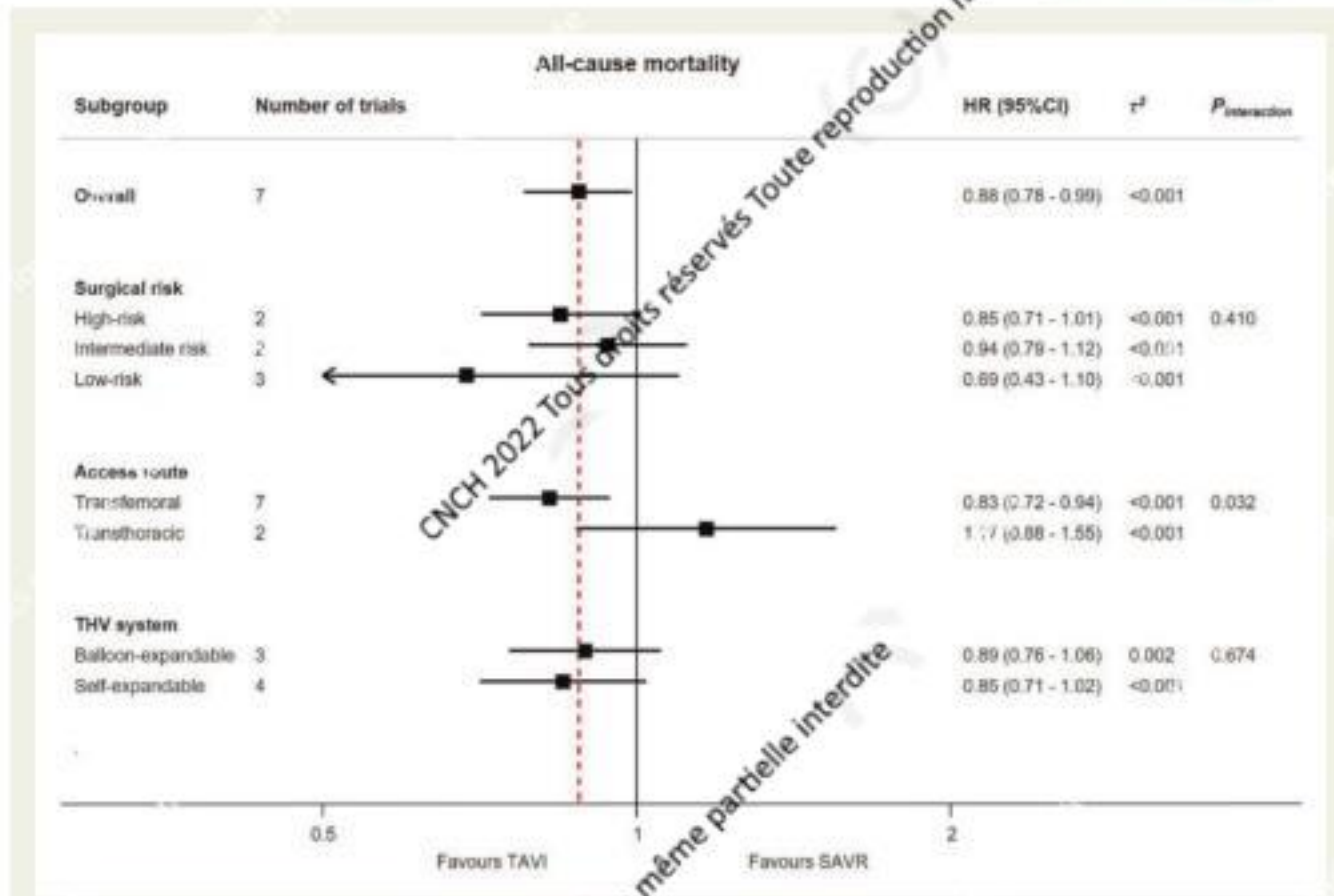


- Resultats
- Fuites paravalvulaires aortiques
- Calcifications
- Bicuspidies
- Coronaires
- Anneaux trop larges
- Durabilité
- Réinterventions
- Alignement comissural
- Poly valvulopathies\_Procédures complexes
- Insuffisances aortiques

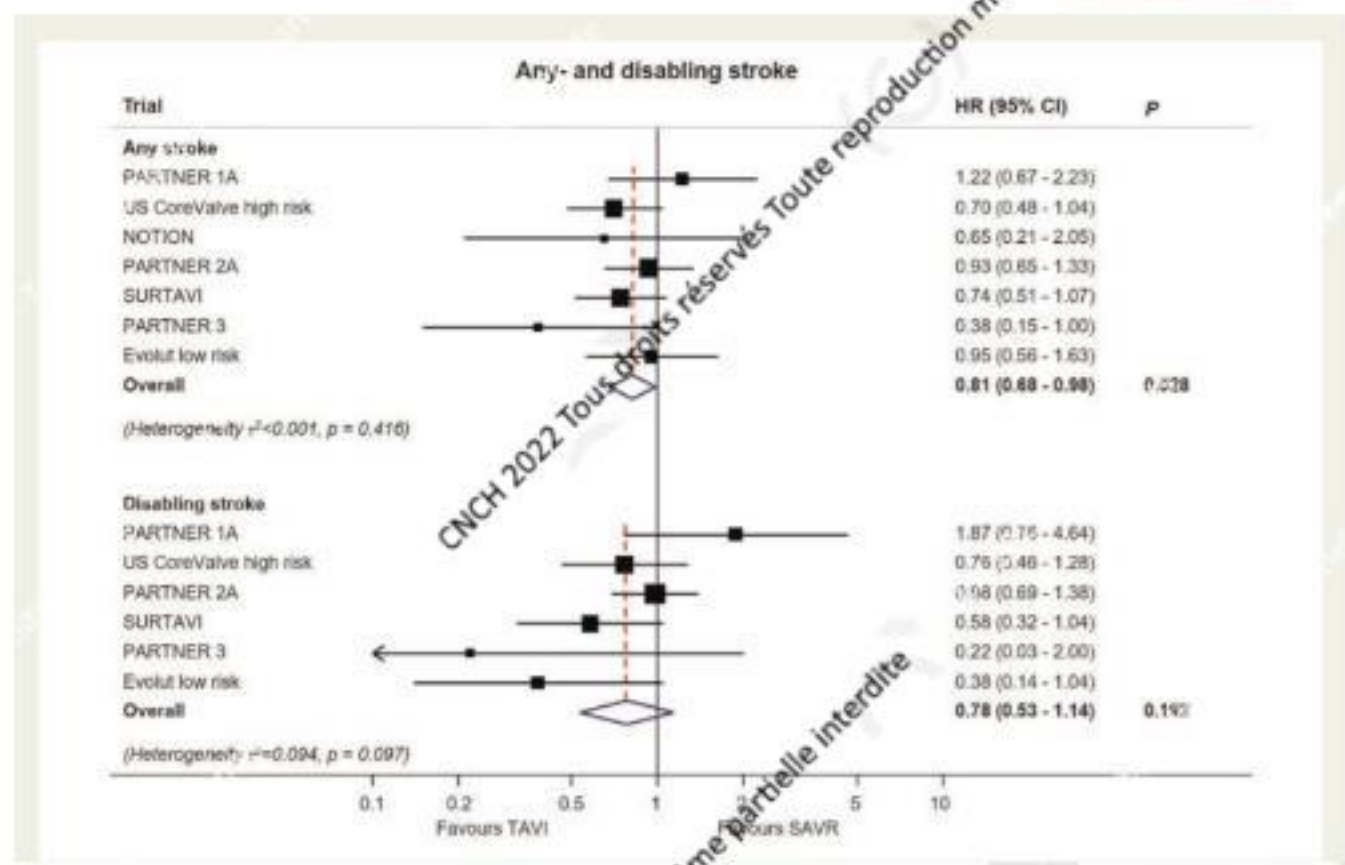
# Meta-analyse TAVI vs SAVR



# Meta-analyse TAVI vs SAVR

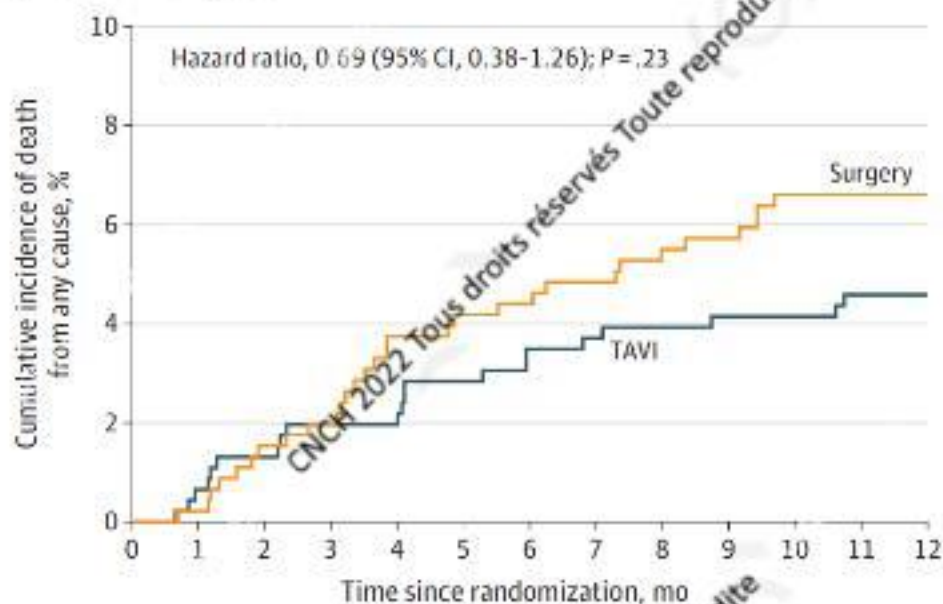


# Meta-analyse TAVI vs SAVR



# UK TAVI Trial

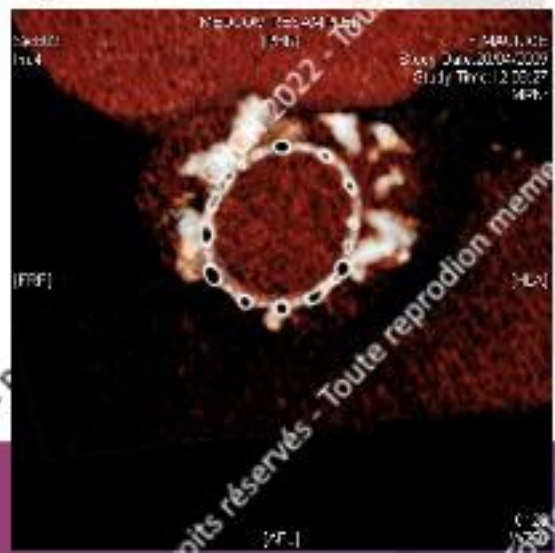
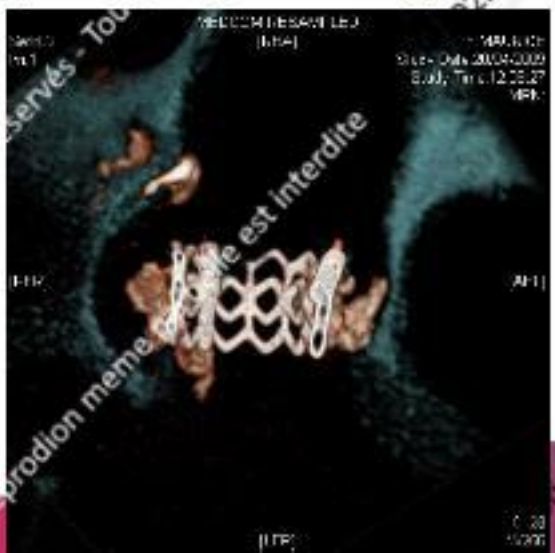
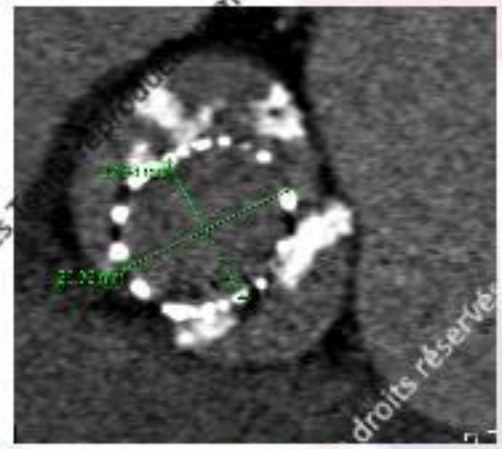
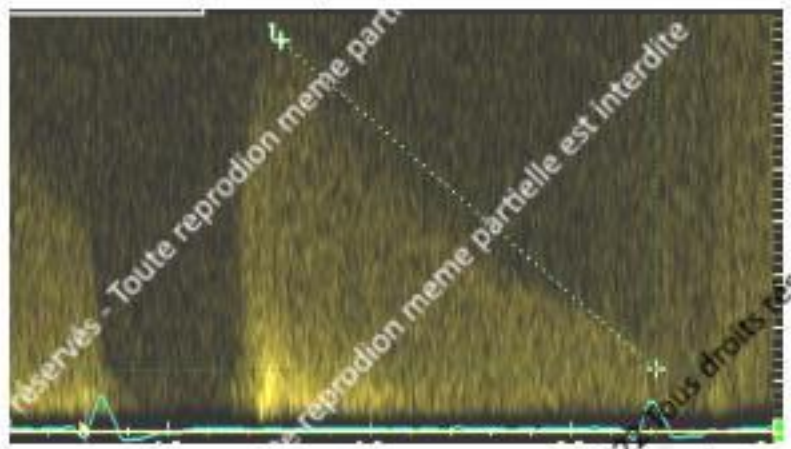
**A** Death from any cause



No. at risk	0	1	2	3	4	5	6	7	8	9	10	11	12
Surgery	455	454	448	445	437	435	434	432	429	428	424	424	424
TAVI	458	455	452	449	449	445	442	441	440	439	439	437	437



# Fuites paravalvulaires



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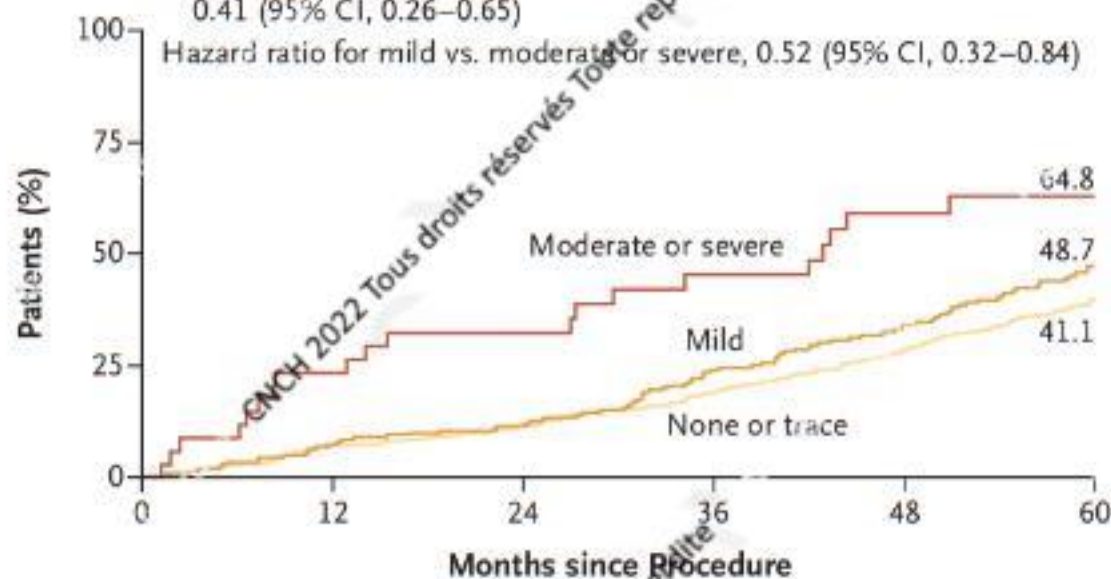
# Fuites paravalvulaires

## D Death from Any Cause, According to Severity of Paravalvular Aortic Regurgitation

Hazard ratio for none or trace vs. mild, 0.86 (95% CI, 0.63–1.02)

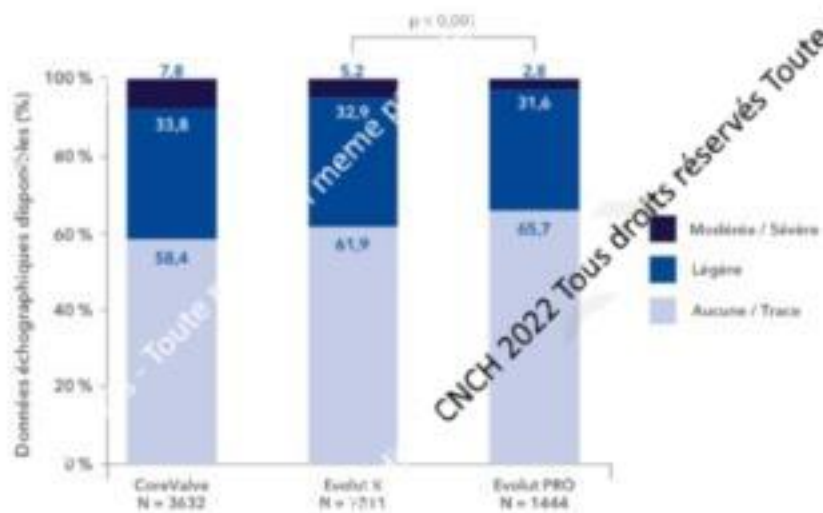
Hazard ratio for none or trace vs. moderate or severe, 0.41 (95% CI, 0.26–0.65)

Hazard ratio for mild vs. moderate or severe, 0.52 (95% CI, 0.32–0.84)



### No. at Risk

	0	12	24	36	48	60
Moderate or severe	33	25	20	16	11	5
Mild	196	178	170	143	120	63
None or trace	643	592	557	495	427	225

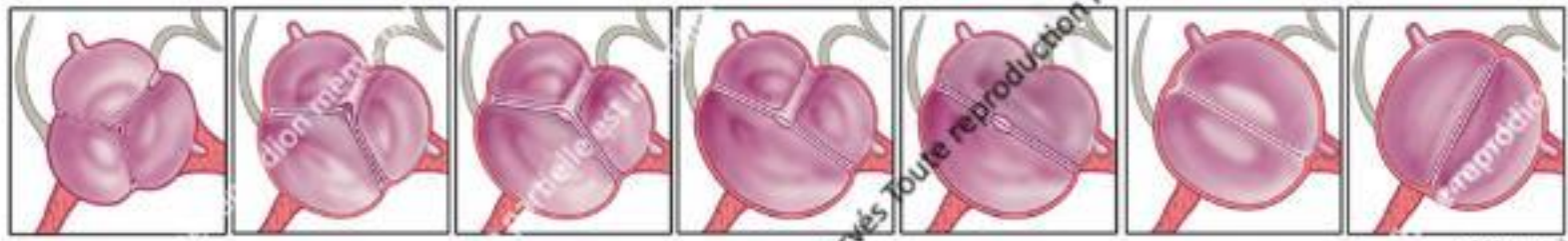


La valeur p représente les différences entre les régurgitations aortiques modérées ou sévères entre les groupes Evolut<sup>™</sup> PRO et Evolut<sup>™</sup> R.



# Bicuspidies

## Anatomical Spectrum of BAV



Partial-fusion BAV (Forme Fruste)      Fused BAV Very asymmetric      Fused BAV Asymmetric      Fused BAV Symmetric      Fused BAV Symmetric no raphe      2-Sinus BAV Antero-posterior      2-Sinus BAV Latero-lateral

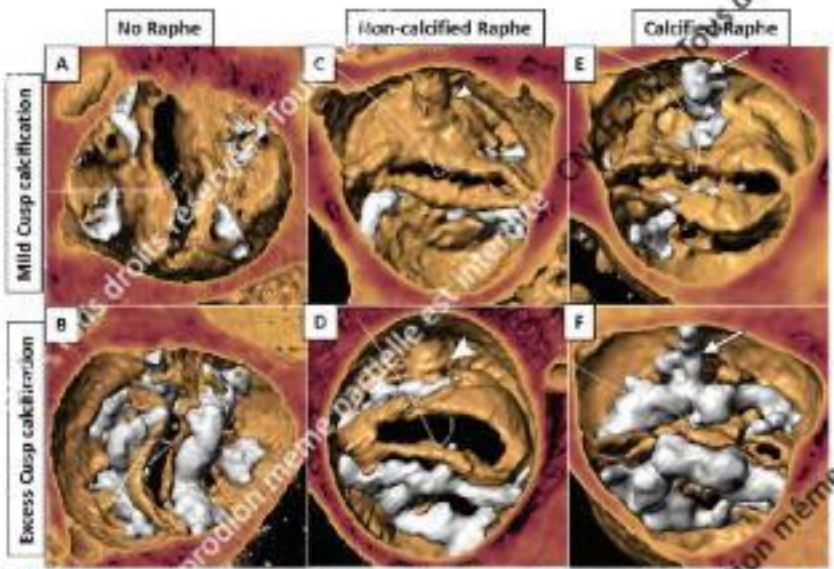


Figure 34. Color-coded CT scans of the aortic valve showing different raphe and calcification patterns.

Radiology: Cardiothoracic Imaging

International Consensus Statement on Nomenclature and Classification of the Congenital Bicuspid Aortic Valve and Its Aortopathy, for Clinical, Surgical, Interventional and Research Purposes

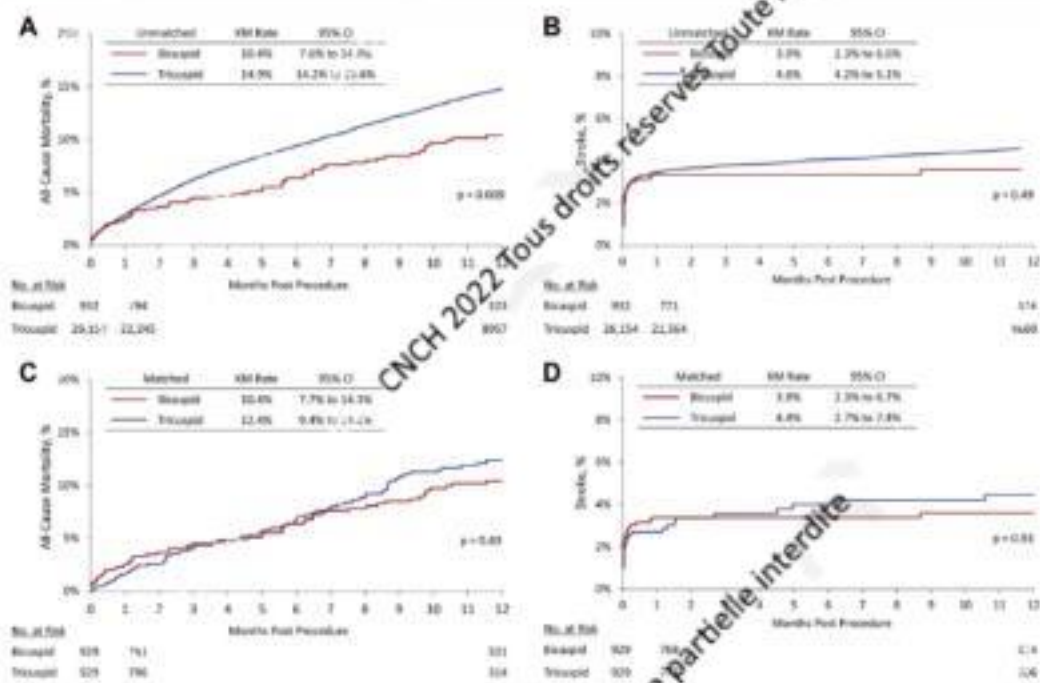
Yusef E. Alkhatib<sup>1</sup> • Alexander Della Corte<sup>2</sup> • Arnon Jampalige<sup>3</sup> • Joseph E. Bavaria<sup>4</sup> • William H. Jang<sup>5</sup> • Marc F. Bevilacqua<sup>6</sup> • Richard B. Finkelstein<sup>7</sup> • Eusebio Fernandez<sup>8</sup> • Tobiasen W. Jorde<sup>9</sup> • Marc F. Renard<sup>10</sup>

## Transcatheter Aortic Valve Replacement in Bicuspid Versus Tricuspid Aortic Valves From the STS/ACC TVT Registry



John K. Forrest, MD,<sup>1</sup> Ryan K. Kipke, MD,<sup>2</sup> Basel Ramlawi, MD,<sup>3</sup> Thomas G. Gleason, MD,<sup>4</sup> Christopher U. Meduri, MD, MPH,<sup>5</sup> Steven J. Yakubov, MD,<sup>6</sup> Hassan Alahawi, MD,<sup>7</sup> Fang Liu, MD, MS,<sup>8</sup> Michael J. Engerson, MD<sup>9</sup>

**FIGURE 2** All-Cause Mortality and Stroke to 1 Year



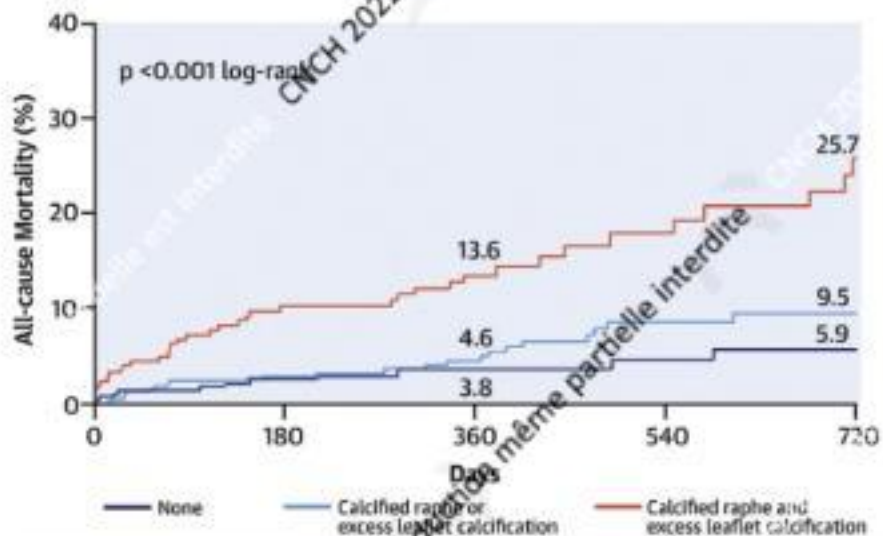
Kaplan-Meier (KM) estimates of (A) all-cause mortality and (B) stroke at 1 year for patients in the unadjusted cohort, and (C) all-cause mortality and (D) stroke for the adjusted cohort. Log-rank test p values are presented. CI = confidence interval.

# Différents comportements des bicuspidies

**CENTRAL ILLUSTRATION** Death From Any Cause According to Morphological Features

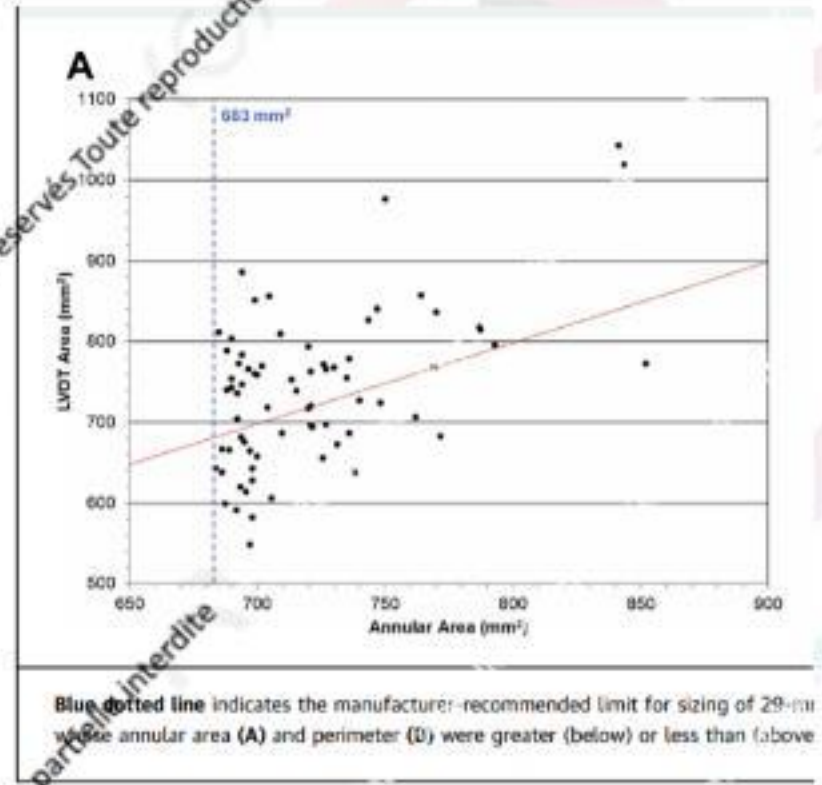
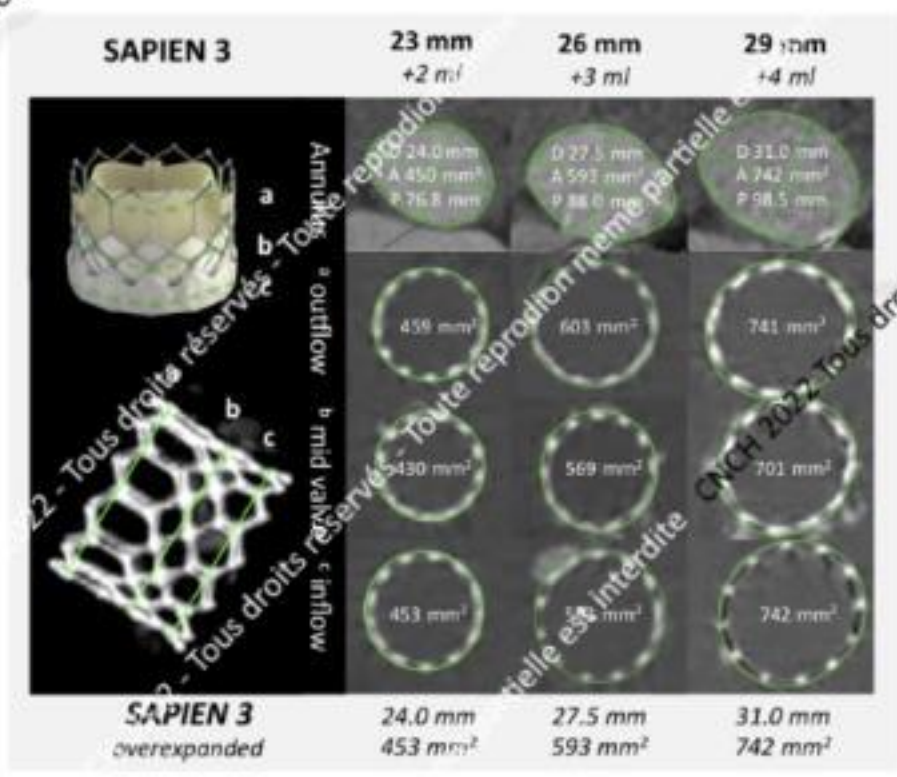
## Death From Any Cause, According to Morphological Features

<p>No Calcified Raphe or Excess Leaflet Calcification (31.3%)</p>	<p>Calcified Raphe or Excess Leaflet Calcification (42.6%)</p>	<p>Calcified Raphe Plus Excess Leaflet Calcification (26.0%)</p>
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# Anneaux très larges





**TABLE 4 In-Hospital and 30-Day Outcomes**

	Total (N = 74)	None/Trace PVL (n = 52) (70%)	Mild/Moderate PVL (n = 22) (30%)	p Value
<b>In-hospital outcomes</b>				
Death	1 (1.4)	0 (0)	1 (4.5)	0.30
Stroke	1 (1.4)	1 (1.9)	0 (0)	1.00
Major vascular complication	2 (2.7)	1 (1.9)	1 (4.5)	0.51
New persistent LBBB	10/60 (16.7)	7/44 (15.9)	3/16 (18.7)	1.00
New permanent pacemaker	4/63 (6.3)	4/46 (8.7)	0/17 (0)	0.57
<b>Paravalvular aortic regurgitation</b>				
None/trace	52 (70.3)	45 (86.5)	7 (31.8)	
Mild	19 (25.7)	7 (13.5)	12 (54.5)	
Moderate	3 (4.1)	0 (0)	3 (13.6)	
<b>Transvalvular aortic regurgitation</b>				
None/trace	67 (90.5)	47 (90.4)	20 (90.9)	0.73
Mild	5 (6.8)	4 (7.7)	1 (4.5)	
Moderate	2 (2.7)	1 (1.9)	1 (4.5)	
ICU stay, h	24.0 (1.1–42.9)	24.0 (7.1–42.0)	24.0 (0.0–45.1)	0.93
Hospital stay, days	3 (2–5)	3 (2–5)	3 (2–5)	0.23
<b>30-day outcomes</b>				
Death	2 (2.7)	1 (1.9)	1 (4.5)	0.51
Stroke	1 (1.4)	1 (1.9)	0 (0.0)	1.00
Major vascular complication	2 (2.7)	1 (1.9)	1 (4.5)	0.51
New permanent pacemaker	4/63 (6.3)	4/46 (8.7)	0/17 (0)	0.57
<b>Paravalvular aortic regurgitation</b>				
None/trace	51 (70.8)	51 (100)	0 (0)	
Mild	16 (22.3)	0 (0)	16 (76.2)	
Moderate	5 (6.9)	0 (0)	5 (23.8)	
<b>Transvalvular aortic regurgitation</b>				
None/trace	67 (93.2)	50 (98.0)	17 (80.9)	0.00
Mild	1 (1.4)	0 (0)	1 (4.8)	
Moderate	4 (5.4)	1 (2.0)	3 (14.3)	

# STS/ACC/TVT Registry

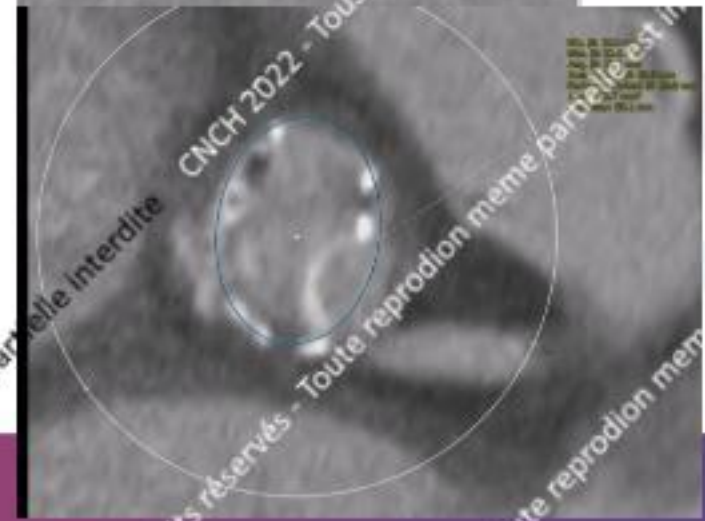
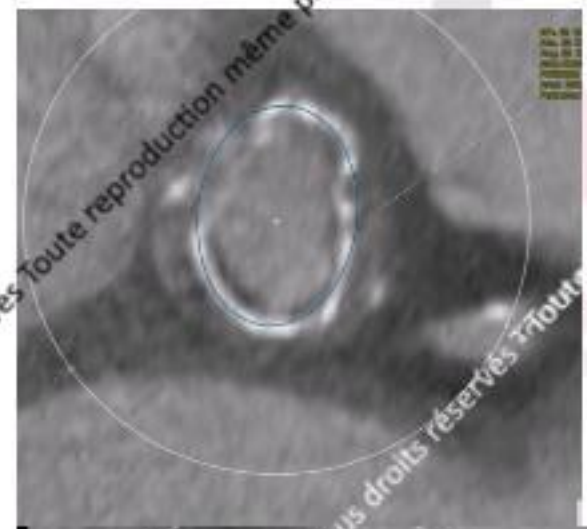
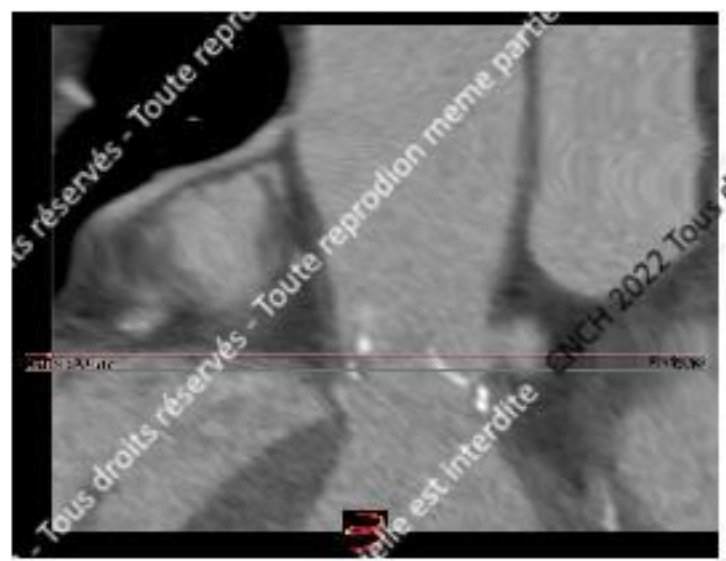
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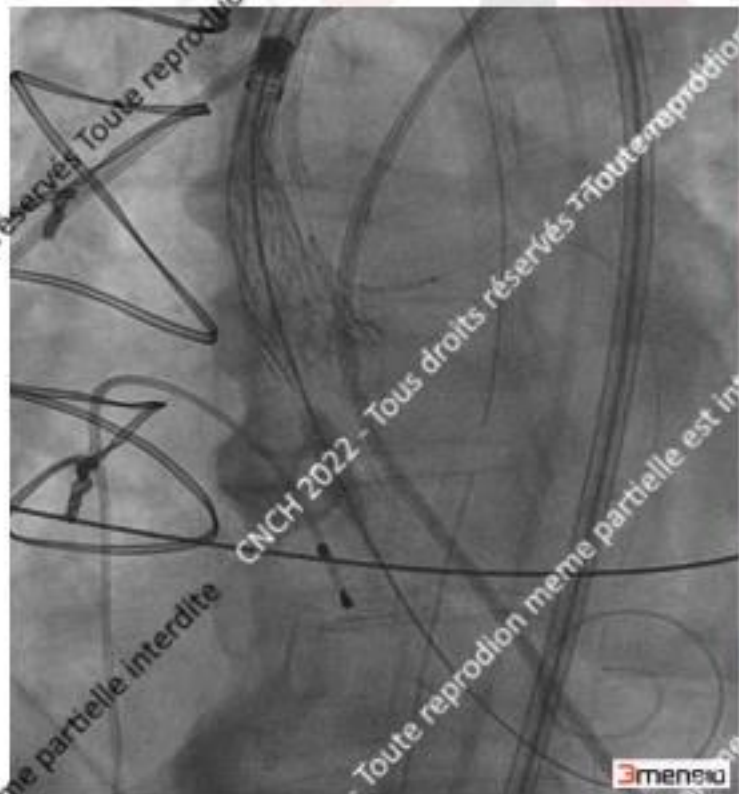
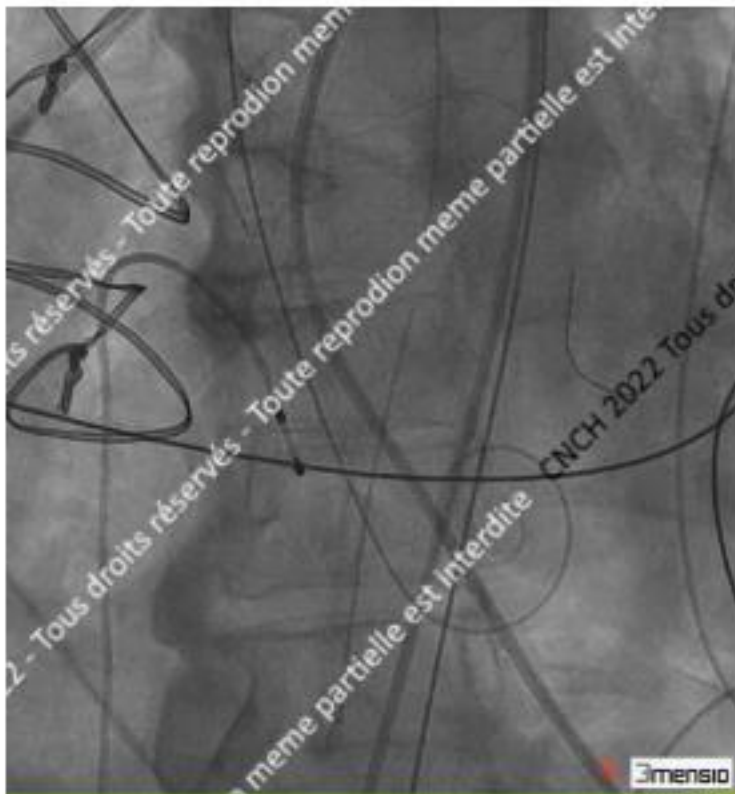
# Les coronaires

Procédure dimanche à 21H00 à Nouméa

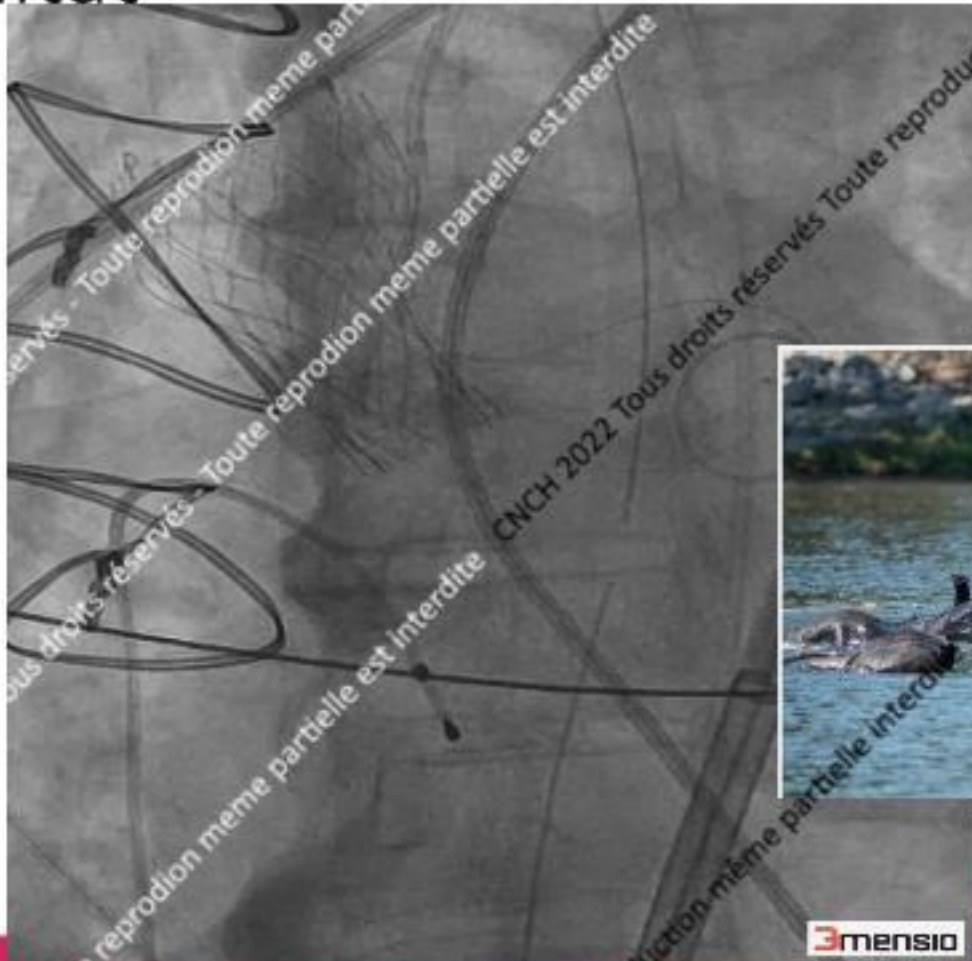
Succès de téléchargement du scanner



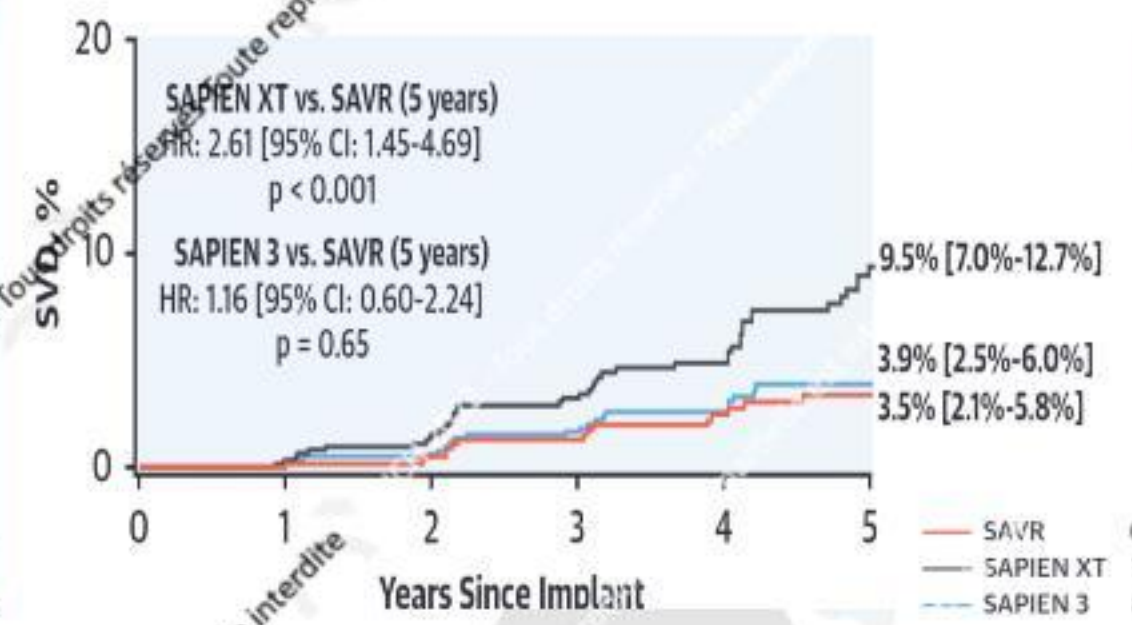
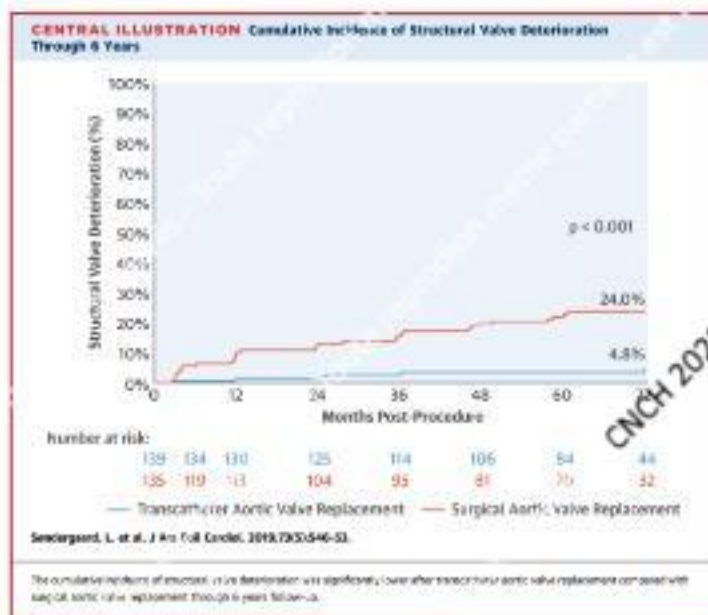
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# Resultat



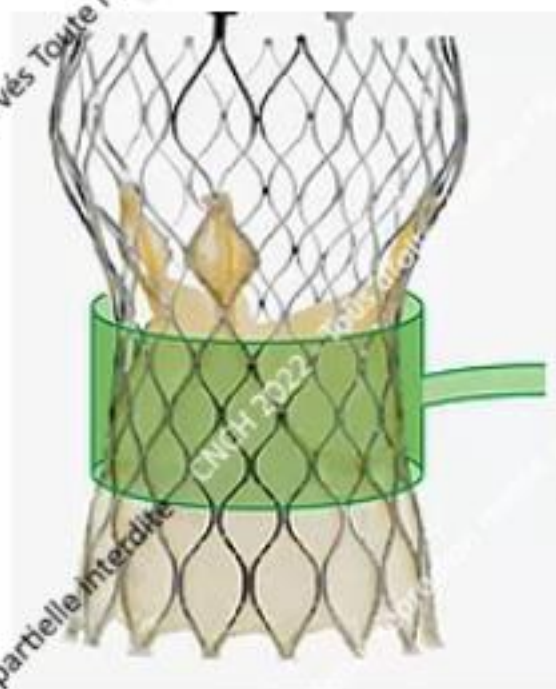
# Durabilité



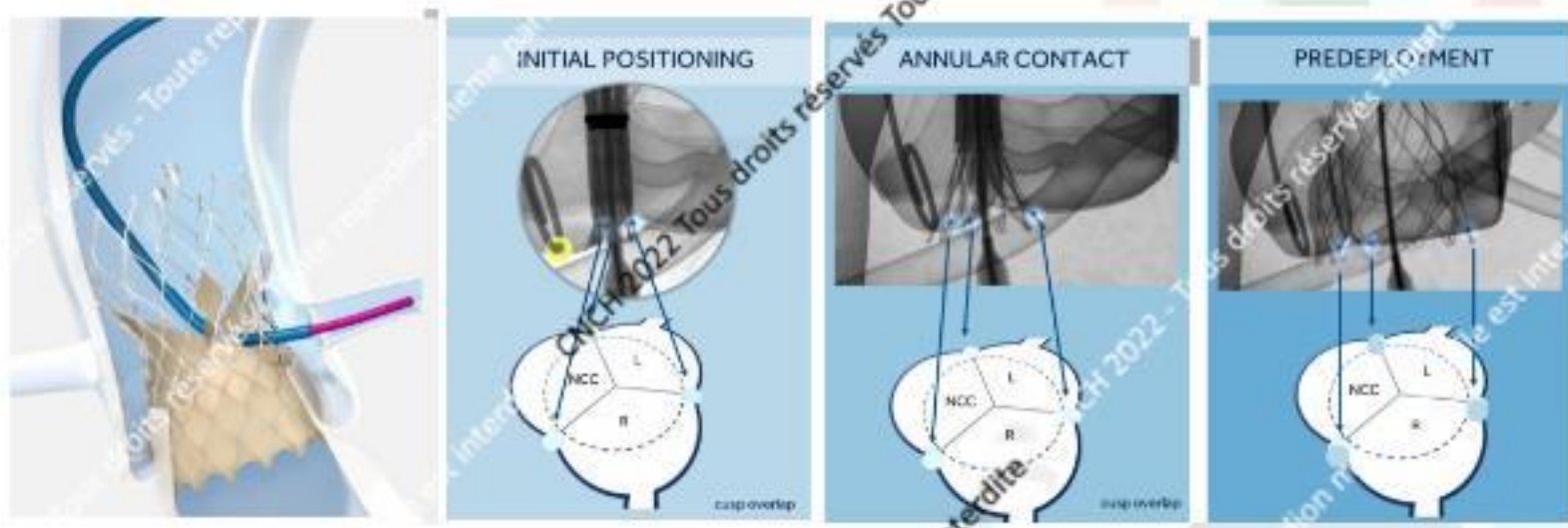
## REINTERVENTION? M H 53 ans



# REINTERVENTION?



# L'alignement comissural





# BASILICA : Shortcut Catheter (Pi Medical)



Splitting element activated



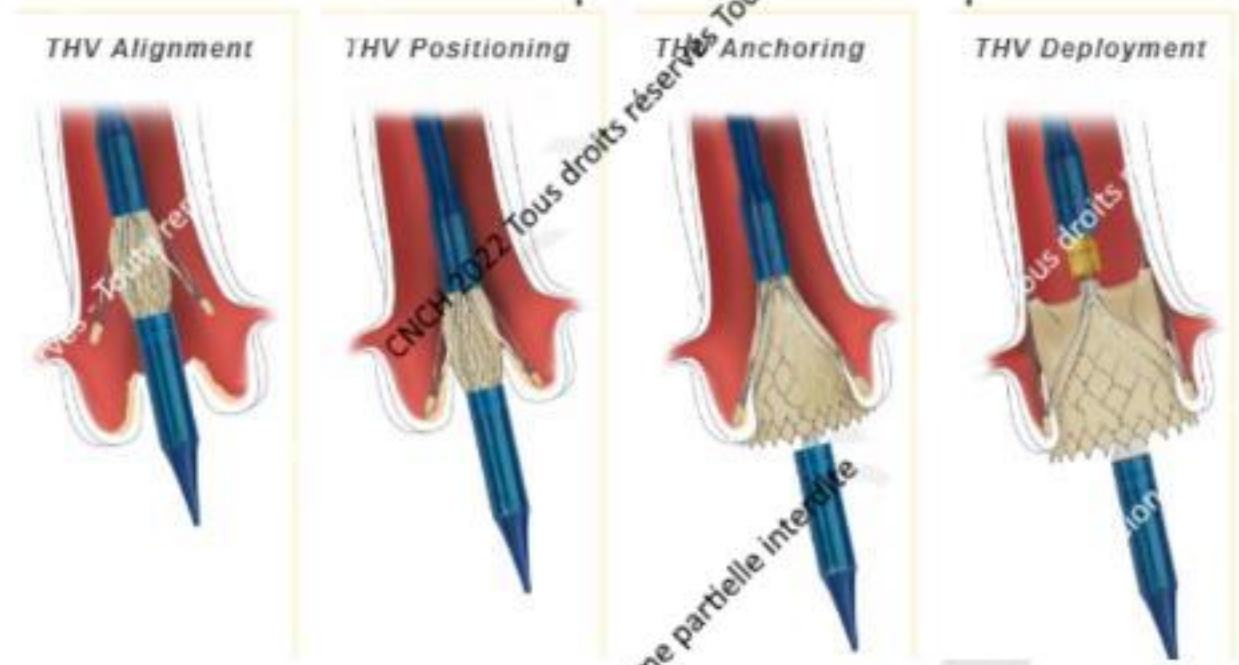
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# Traitement de l'insuffisance aortique

HERASITRUM  
Universitätsklinik Halle (Saale)

## JenaValve Pericardial THV

### Transfemoral Implantation Sequence



# Extension des indications?

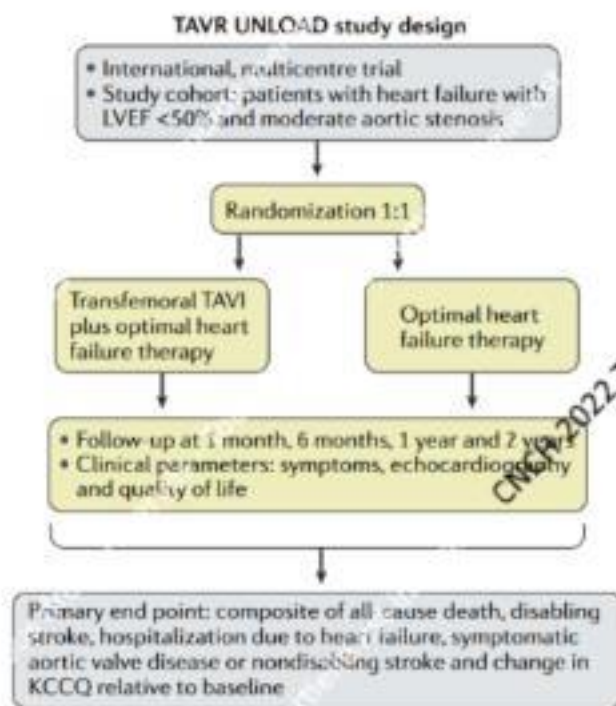


Fig. 4 | Design of the TAVR UNLOAD trial. TAVR UNLOAD is an ongoing trial in patients with heart failure with moderate aortic stenosis who will be randomly assigned 1:1 to optimal heart failure therapy plus transfemoral

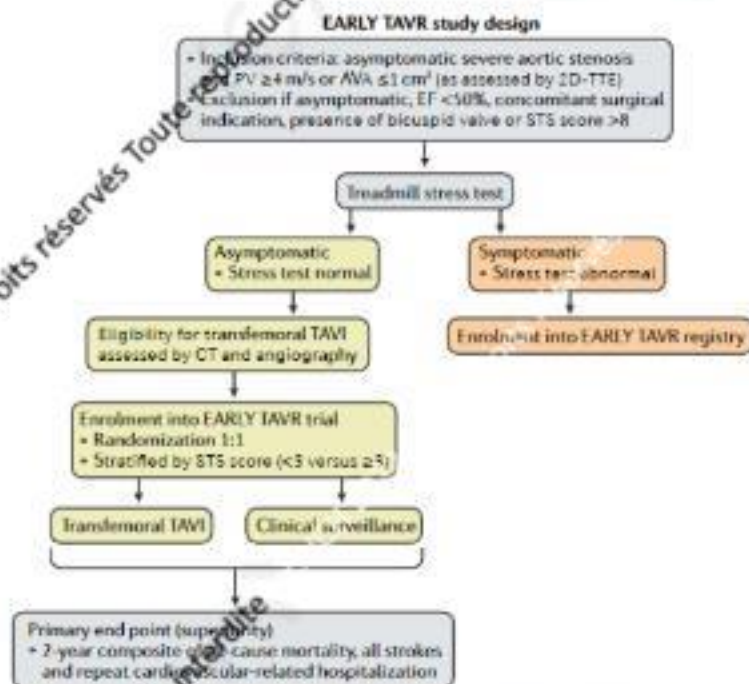
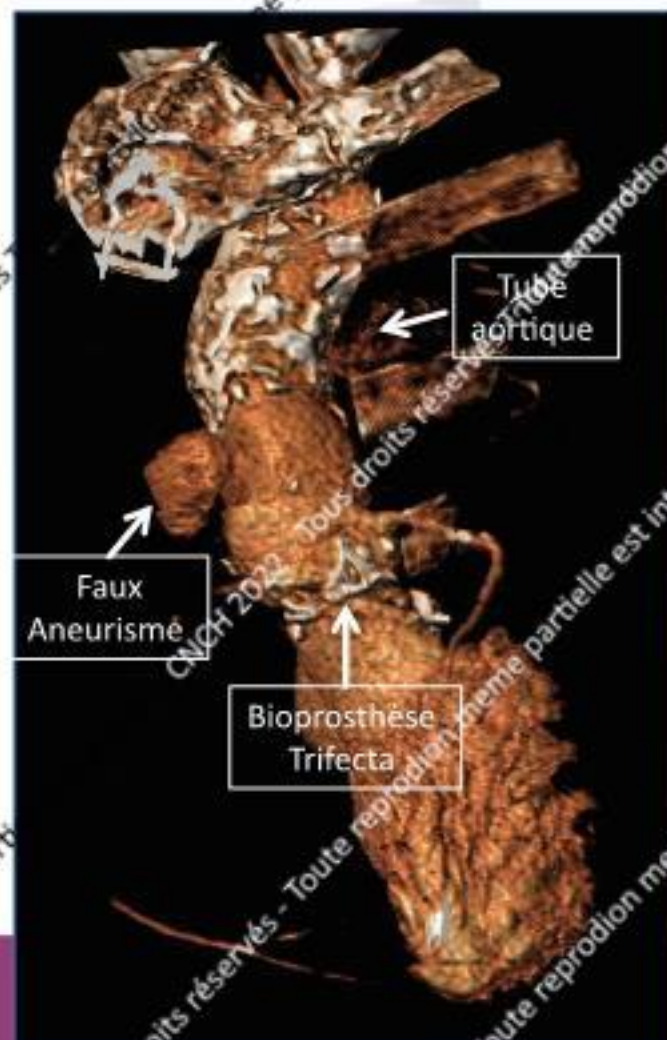
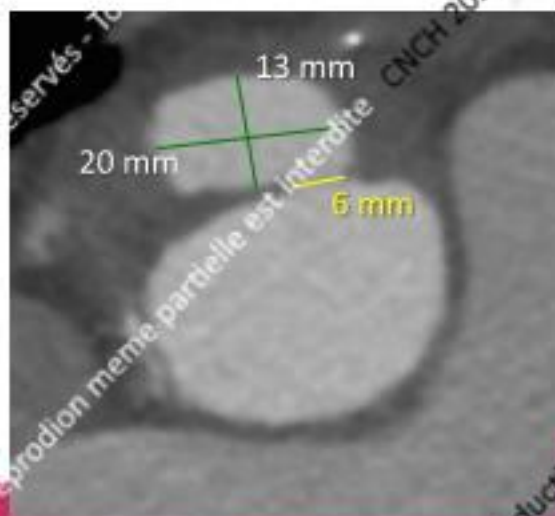


Fig. 3 | Flowchart of the design of the EARLY TAVR study. The EARLY TAVR study is an ongoing randomized (1:1) controlled trial to compare transcatheter aortic valve implantation (TAVI) with clinical surveillance in patients with truly asymptomatic severe aortic stenosis, as confirmed by treadmill stress test. AVA, aortic valve area; EF, ejection fraction; PV, peak velocity; STS, Society of Thoracic Surgeons; TTE, transthoracic echocardiography.

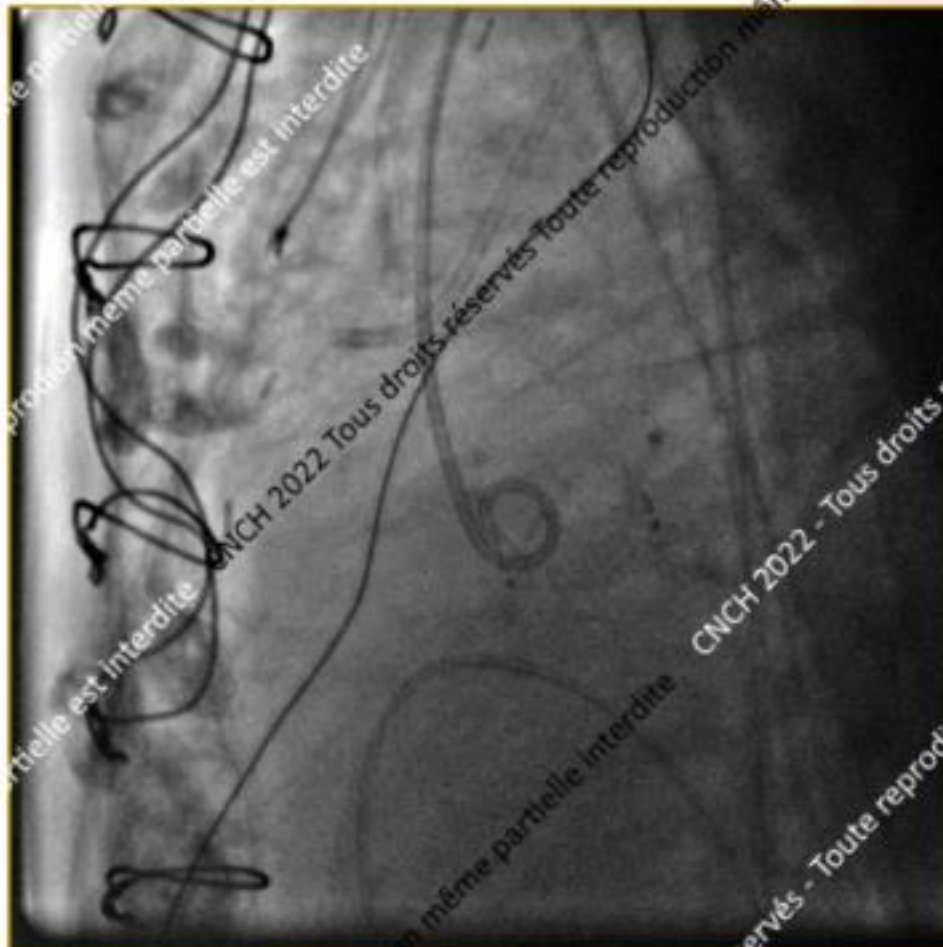
## Les procédures complexes

### Pre-TAVI CT scan :

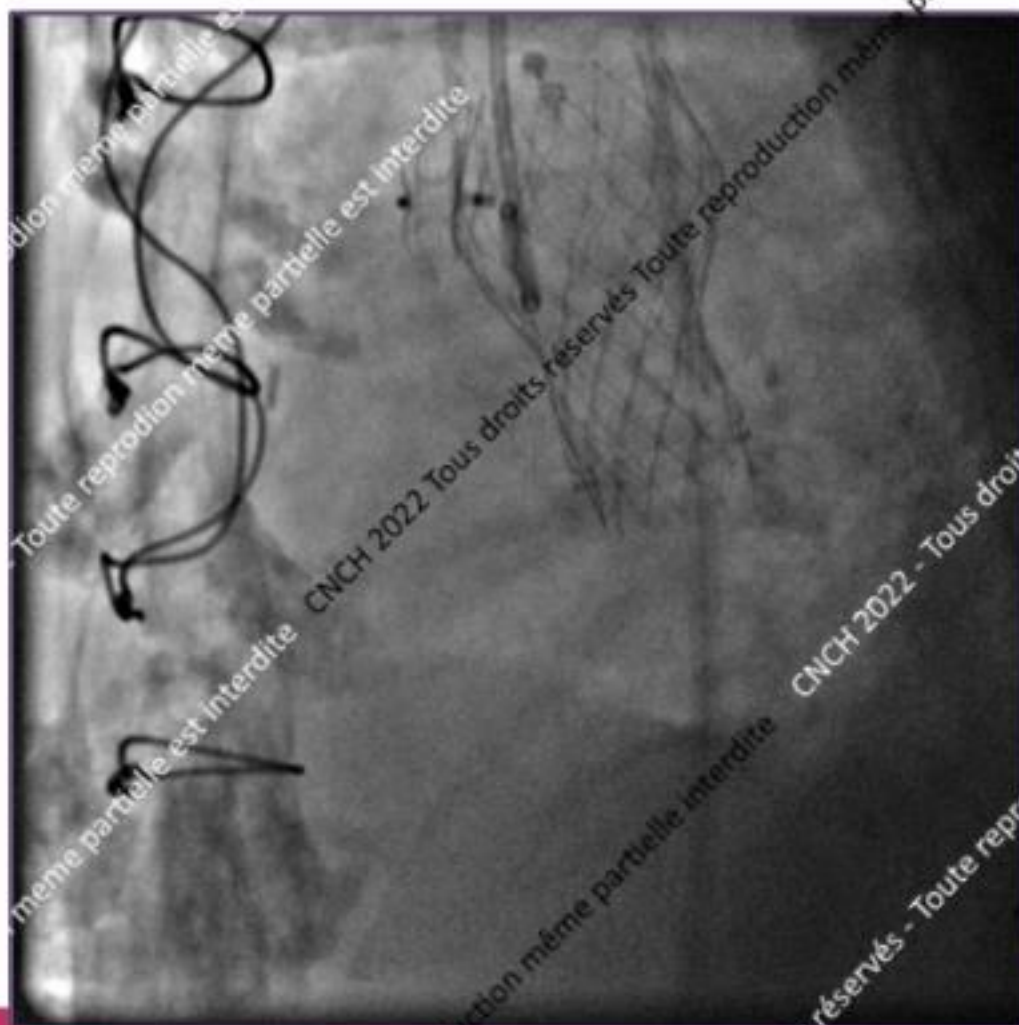
- Présence d'un anévrisme de l'aorte ascendante à la jonction aorte & tube graft.



## Cathétérization du faux anévrisme



# Resultat final



### Procédure JANUS:

- Dieu Romain des passages, des portes et des clés
- Double tête: une tournée vers le passé, l'autre vers le futur
- Maître des procédures structurelles multiples



FIG. 42.—JANUS.

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