



**FUNDACIÓN
FAVALORO**
HOSPITAL UNIVERSITARIO

TAVI

Complicaciones periprocedimiento. Impacto en la evolución

Dr. León Valdivieso
Staff. Dpto de Cardiología Intervencionista

Conflictos de Intereses:

Ninguno relacionado a esta presentación.



LBBB

Stroke

Vascular Complications

Mitral Regurgitation

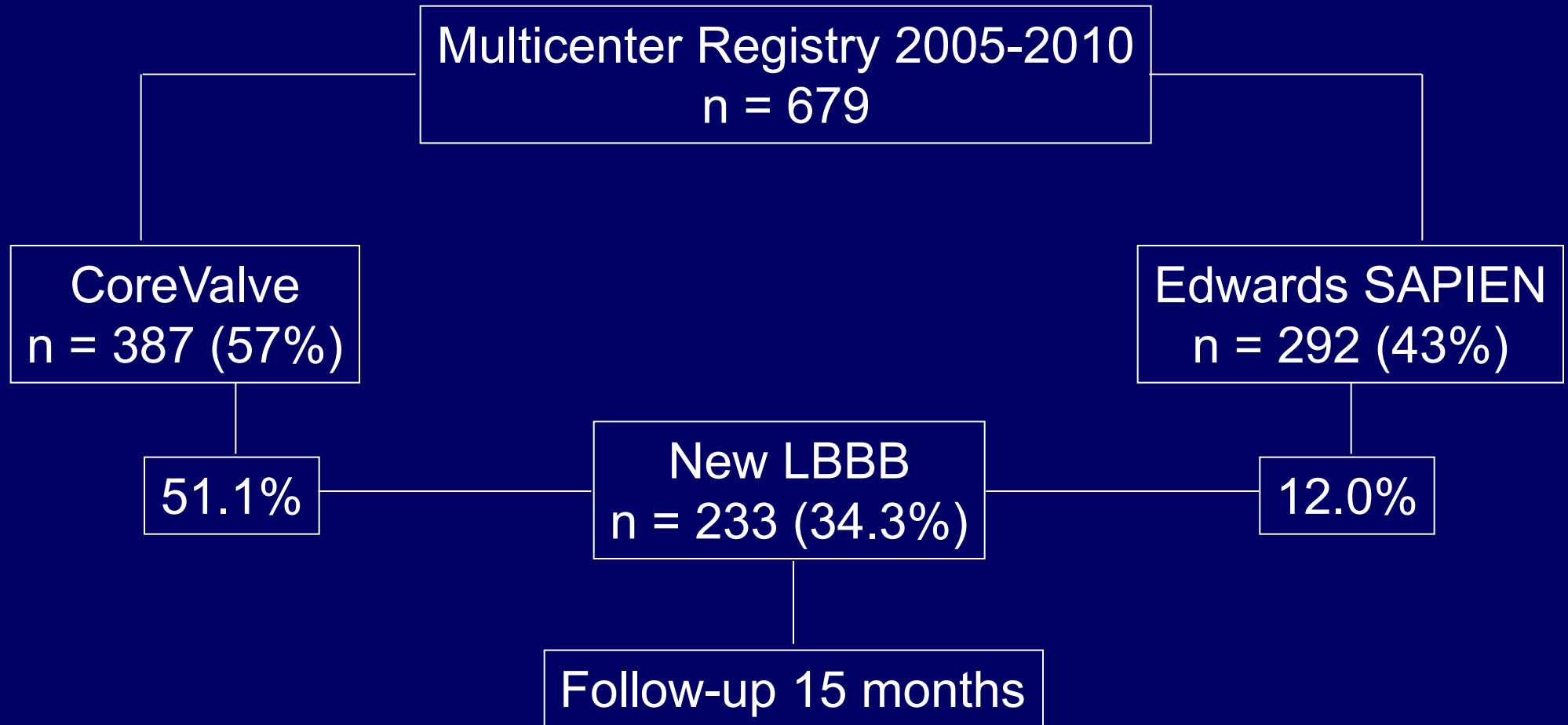
SRIS

Aortic Regurgitation

Myocardial Injury

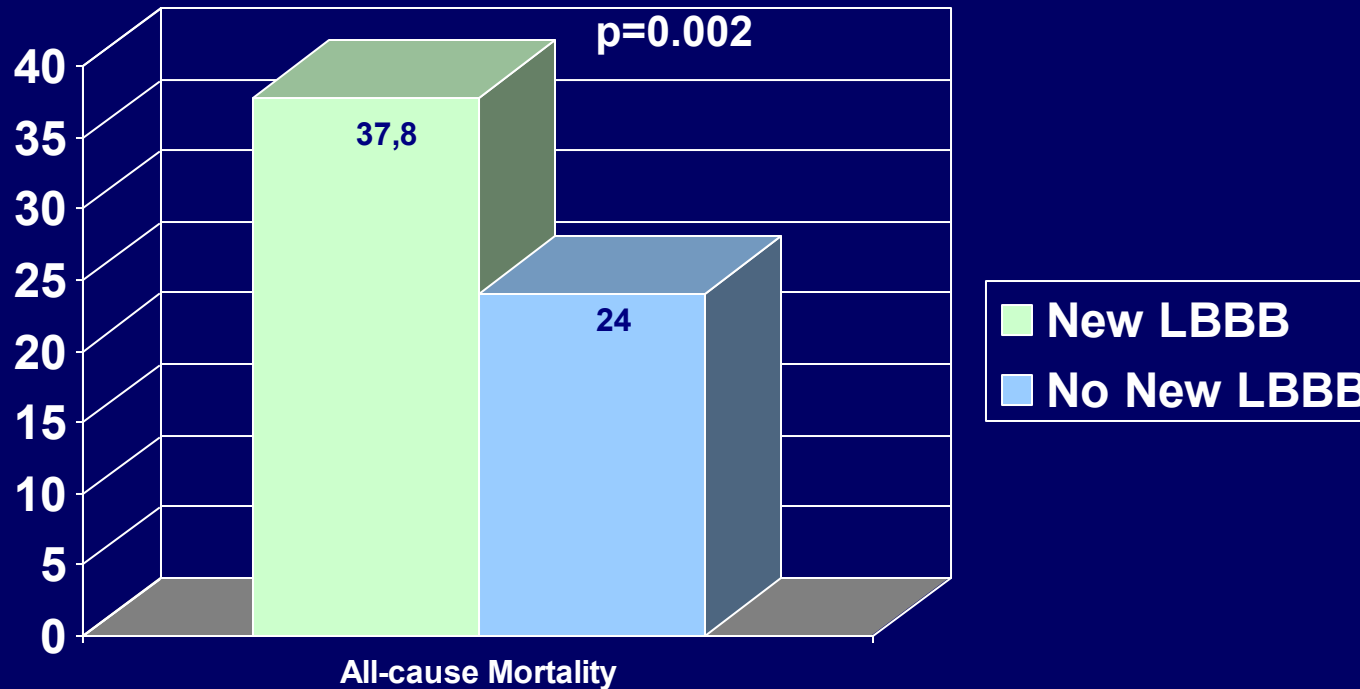


Left bundle-branch block induced by transcatheter aortic valve implantation increases risk of death.



Left bundle-branch block induced by transcatheter aortic valve implantation increases risk of death.

Mortality According to the Development of New LBBB



Left bundle-branch block induced by transcatheter aortic valve implantation increases risk of death.

Independent predictors of all-cause mortality

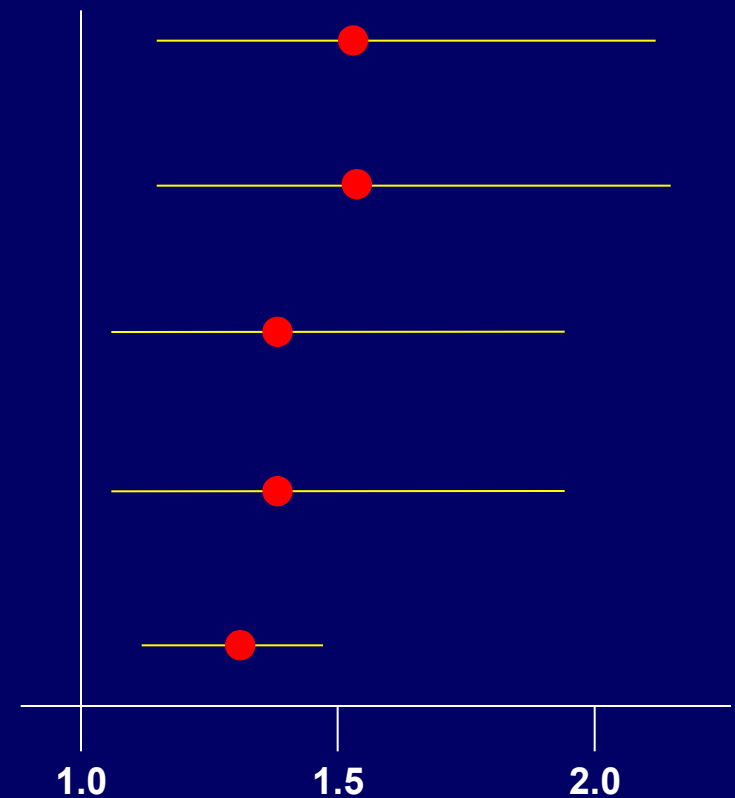
New LBBB (HR: 1.54; CI: 1.12-2.10)

COPD (HR: 1.56; CI: 1.15-2.10)

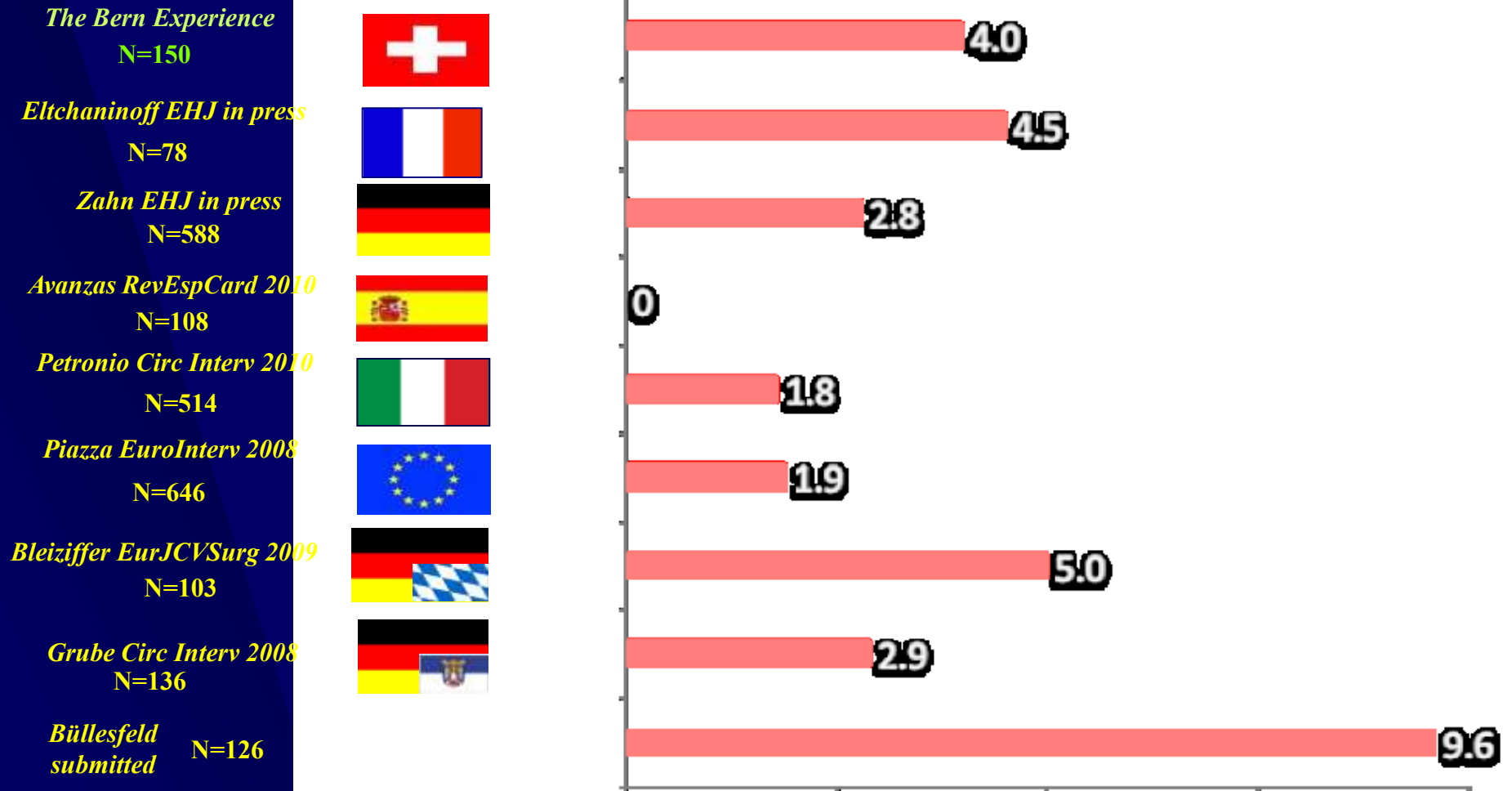
Female (HR: 1.39; CI: 1.04-1.85)

LVEF \leq 50% (HR: 1.38; CI: 1.02-1.86)

Baseline Creat. (HR, 1.32; CI, 1.19-1.43)

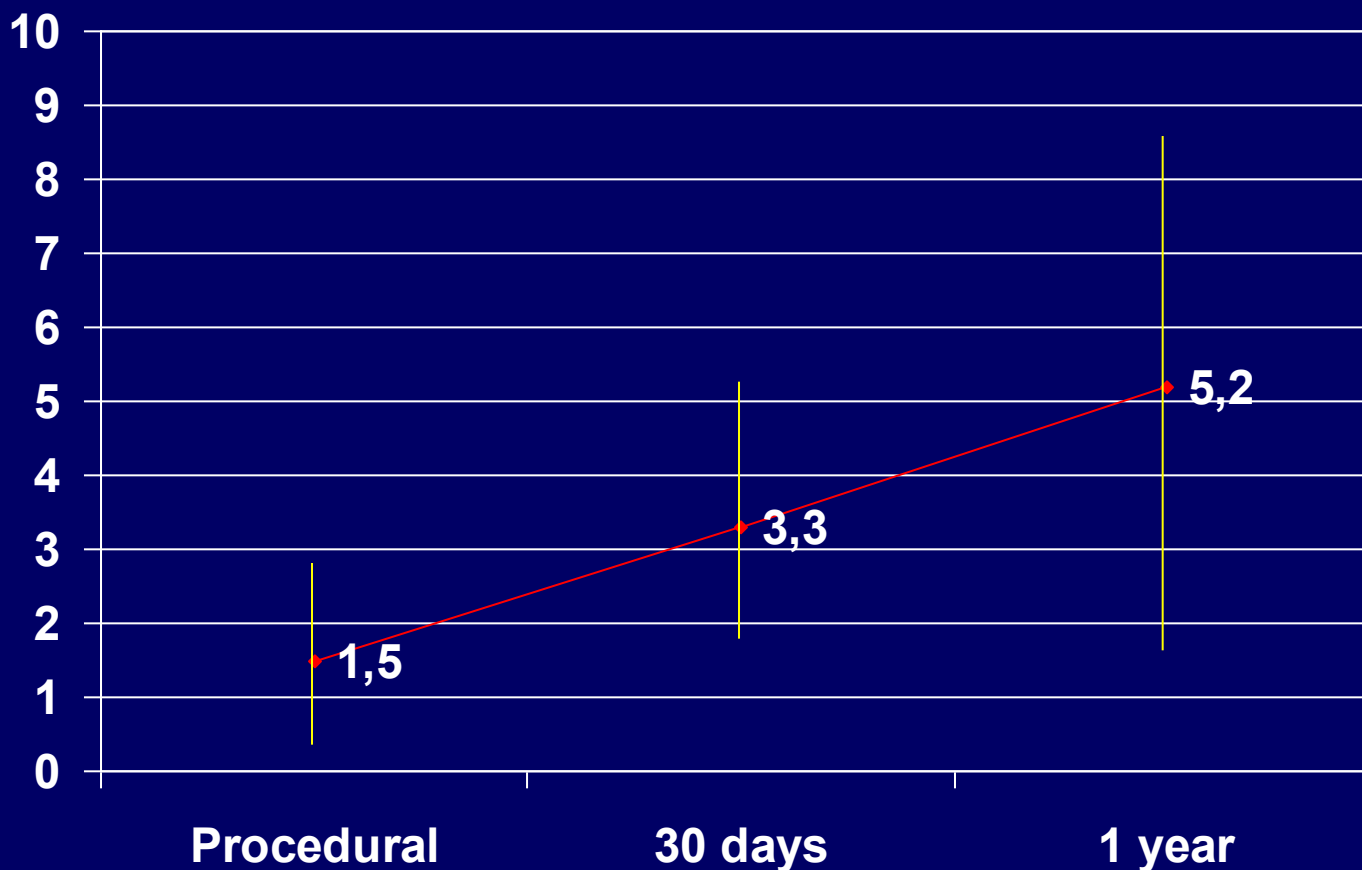


Stroke @ 30 Days - CoreValve

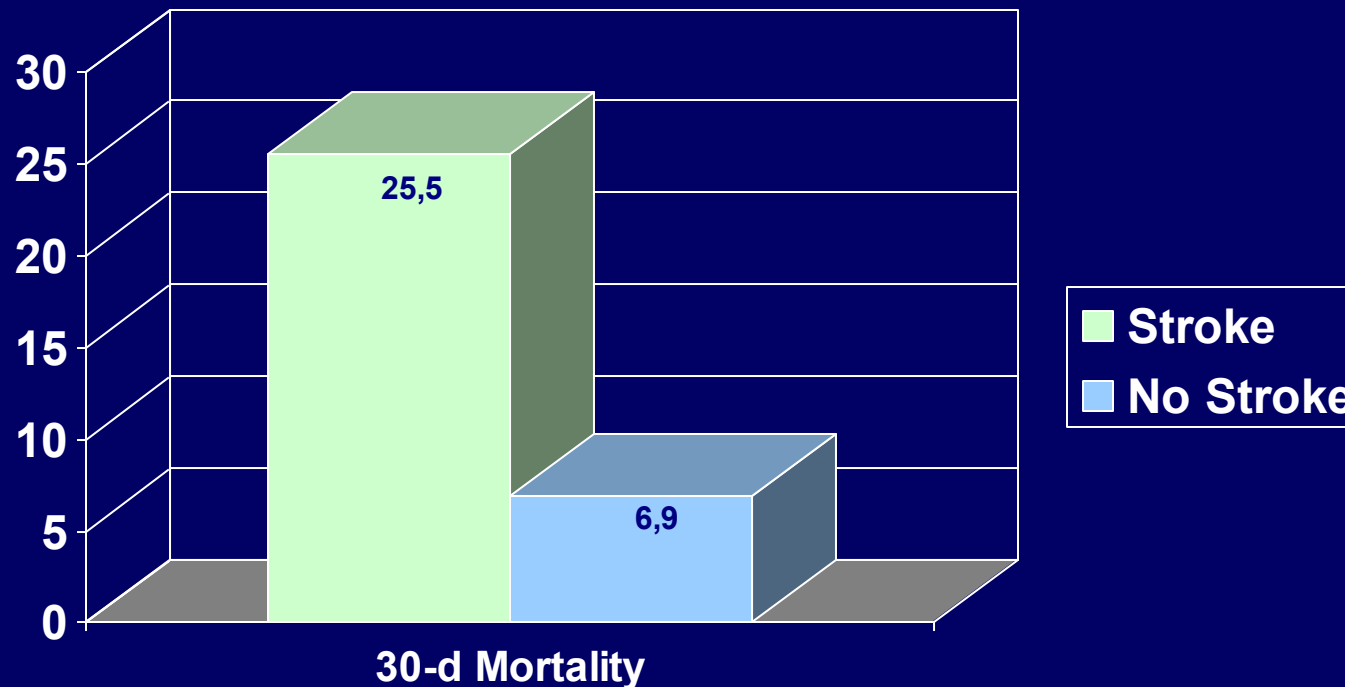


Risk of Stroke After Transcatheter Aortic Valve Implantation (TAVI): A Meta-Analysis of 10,037 Published Patients.

Meta-analysis of 53 studies (2004-2011) with 10,037 TAVI patients

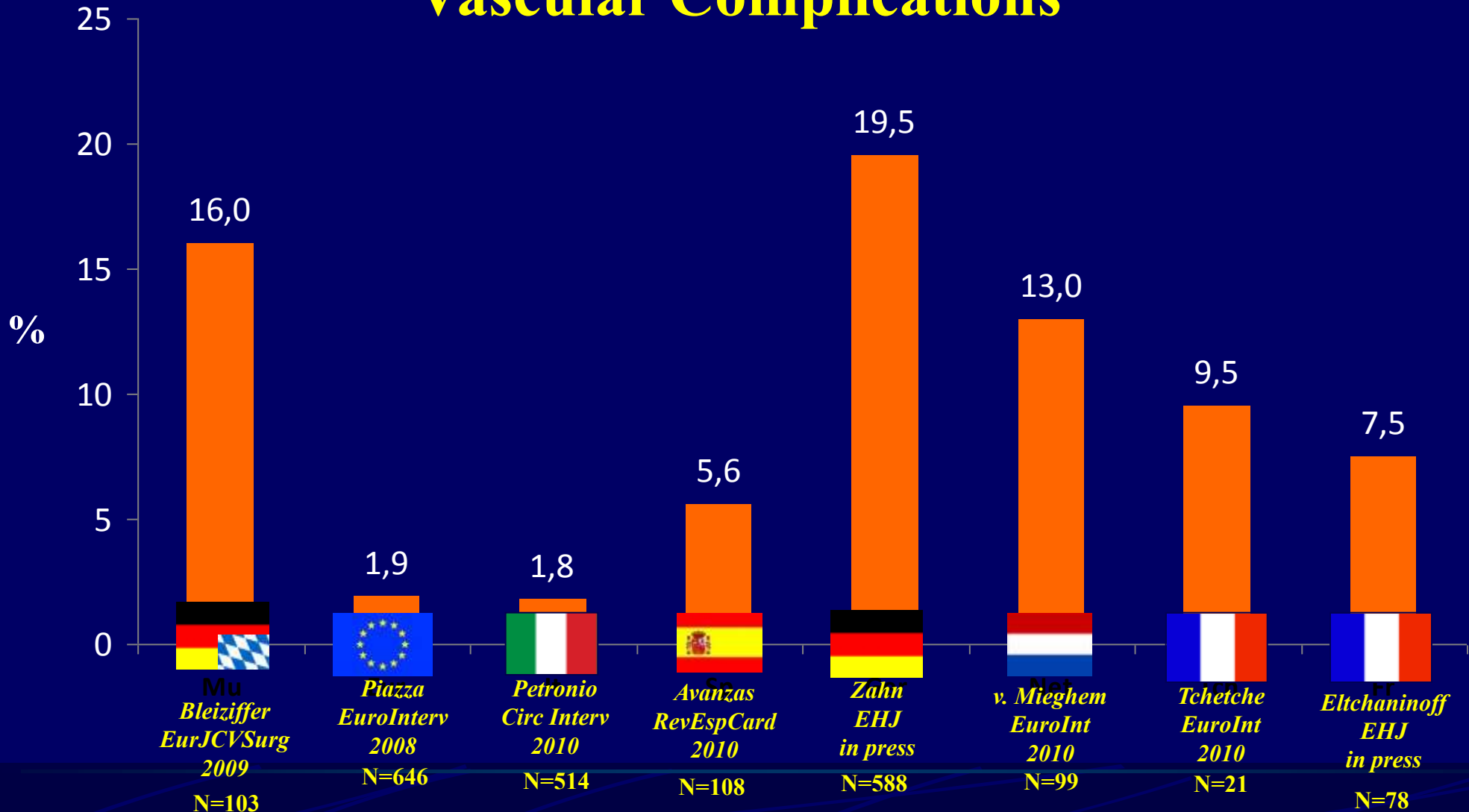


Risk of Stroke After Transcatheter Aortic Valve Implantation (TAVI): A Meta-Analysis of 10,037 Published Patients.

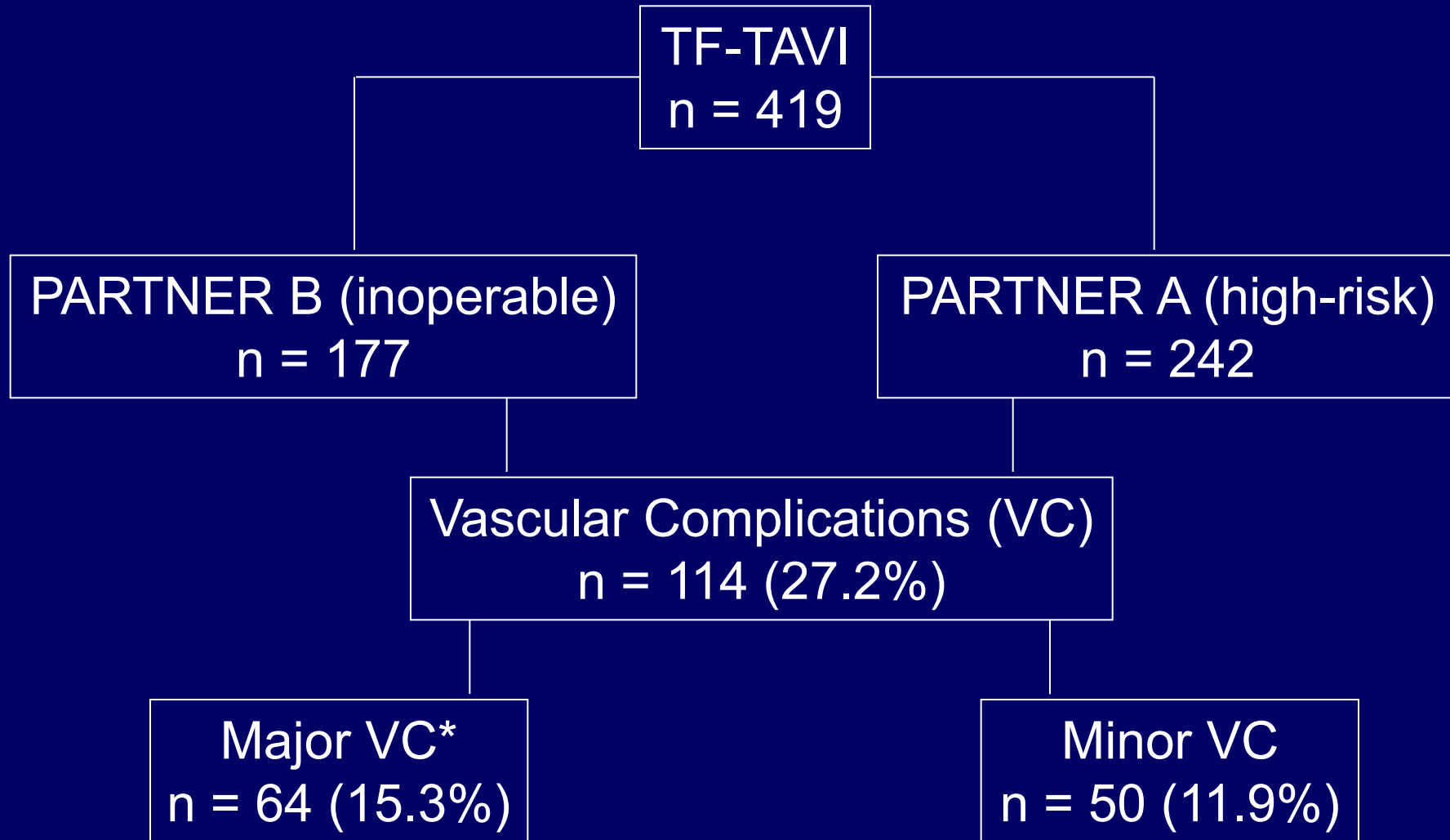


Peri-procedural Complications - CoreValve

Vascular Complications



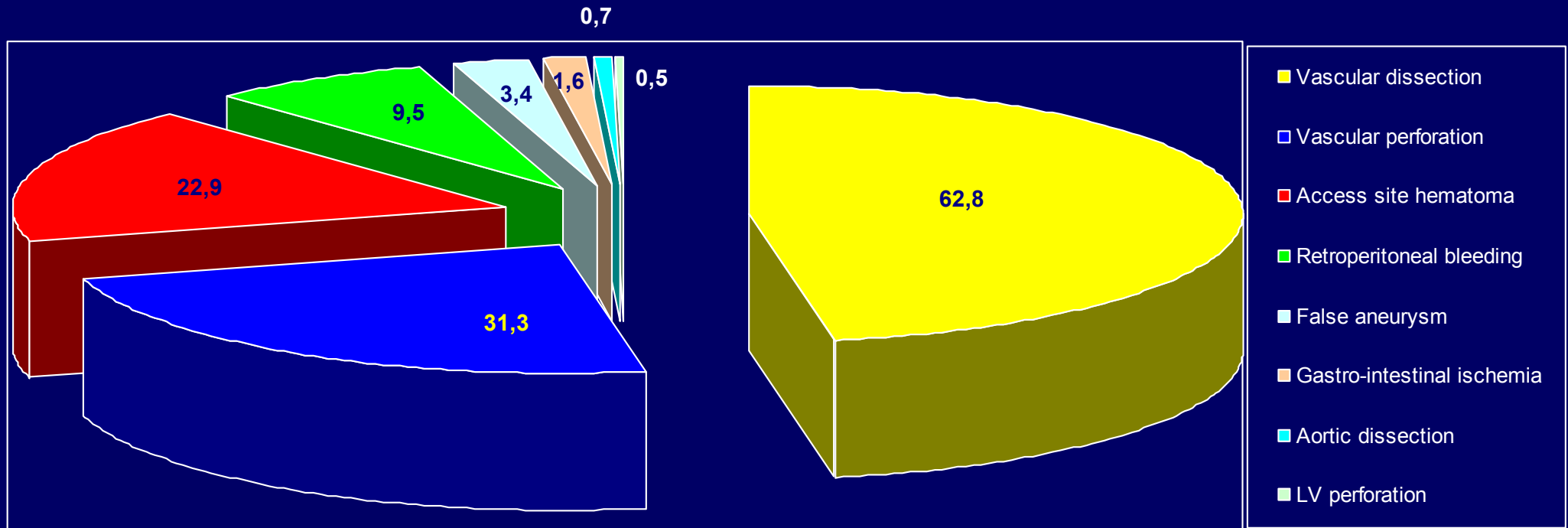
Vascular Complications After Transcatheter Aortic Valve Replacement



* female gender was the only independent predictor of major VC

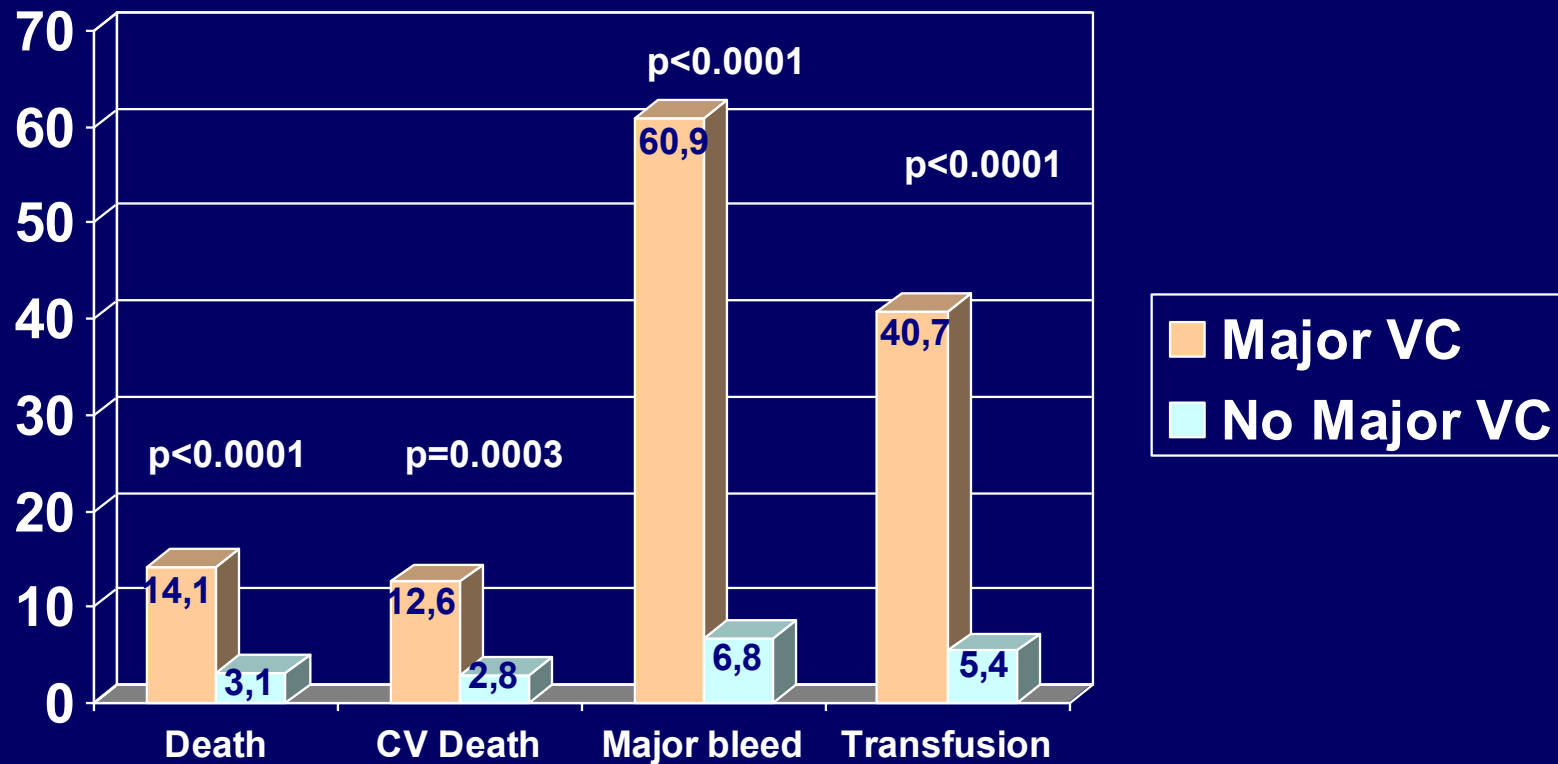
Vascular Complications After Transcatheter Aortic Valve Replacement

30-d MAJOR VASCULAR COMPLICATIONS



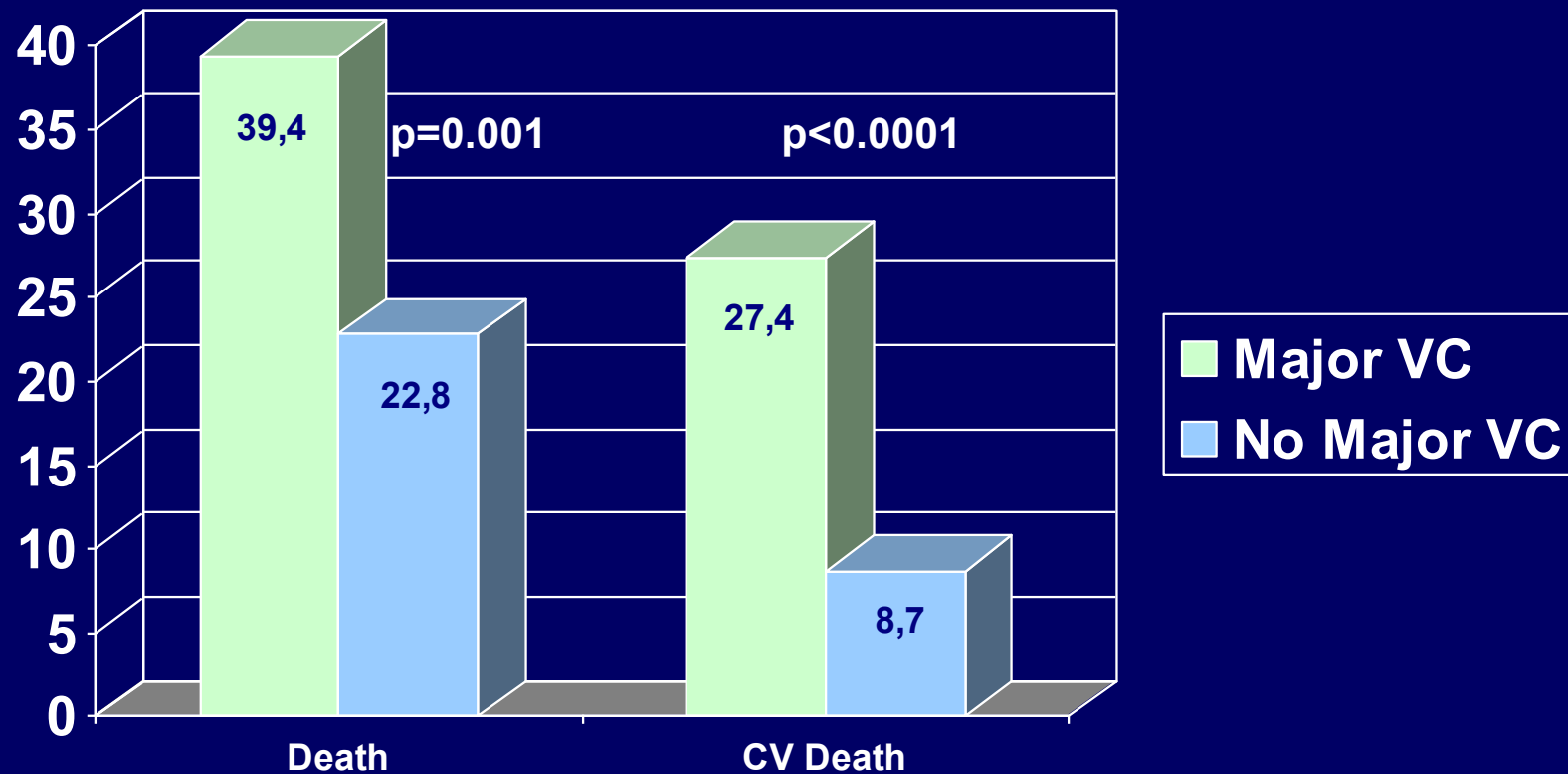
Vascular Complications After Transcatheter Aortic Valve Replacement

30-d Events According to the Occurrence of Major VC



Vascular Complications After Transcatheter Aortic Valve Replacement

1-y Events According to the Occurrence of Major VC



Transcatheter Aortic Valve Replacement: Outcomes of Patients With Moderate or Severe Mitral Regurgitation.

451 TAVI patients stratified by MR status (71% ≤ mild, 29% mod/sev)

	Mejor*		Sin Cambio		Peor	
	Inicial	1 año	Inicial	1 año	Inicial	1 año
Moderada n=89	62%	58%	27%	17%	5%	1%
Severa n=43	60%	49%	33%	16%	-	-

- * - Gradiente aórtico medio \geq 40 mmHg
- Funcional MR
- Ausencia de HTTP
- Ausencia de FA

Transcatheter Aortic Valve Replacement: Outcomes of Patients With Moderate or Severe Mitral Regurgitation.

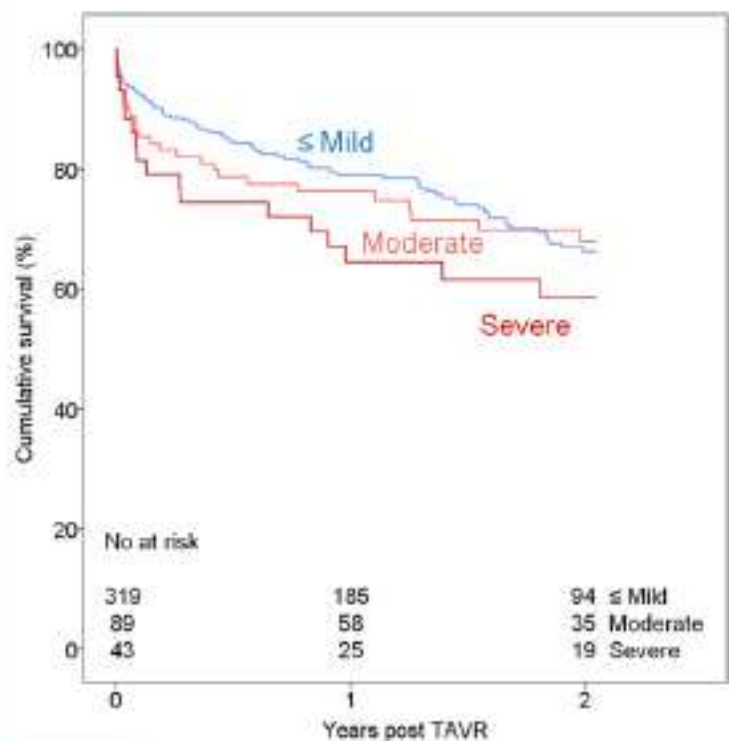


Figure 1 Kaplan-Meier Curves for All-Cause Mortality in Patients With Mild or Less, Moderate, and Severe MR at Baseline

Survival in patients with mild or less, moderate, and severe mitral regurgitation (MR) at baseline was 92.5%, 86.5%, and 83.7% at 30 days; 79.0%, 76.2%, and 64.5% at 1 year; and 66.2%, 67.9%, and 58.5% at 2 years, respectively. TAVR = transcatheter aortic valve replacement.

Table 3 HRs for Moderate or Severe Versus Mild or Less MR

	HR (95% CI)	p Value
Unadjusted		
≤30 days	2.04 (1.11-3.74)	0.02
>30 days	0.94 (0.58-1.51)	0.94
Risk adjusted		
≤30 days	2.10 (1.12-3.94)	0.02
>30 days	0.82 (0.50-1.34)	0.42

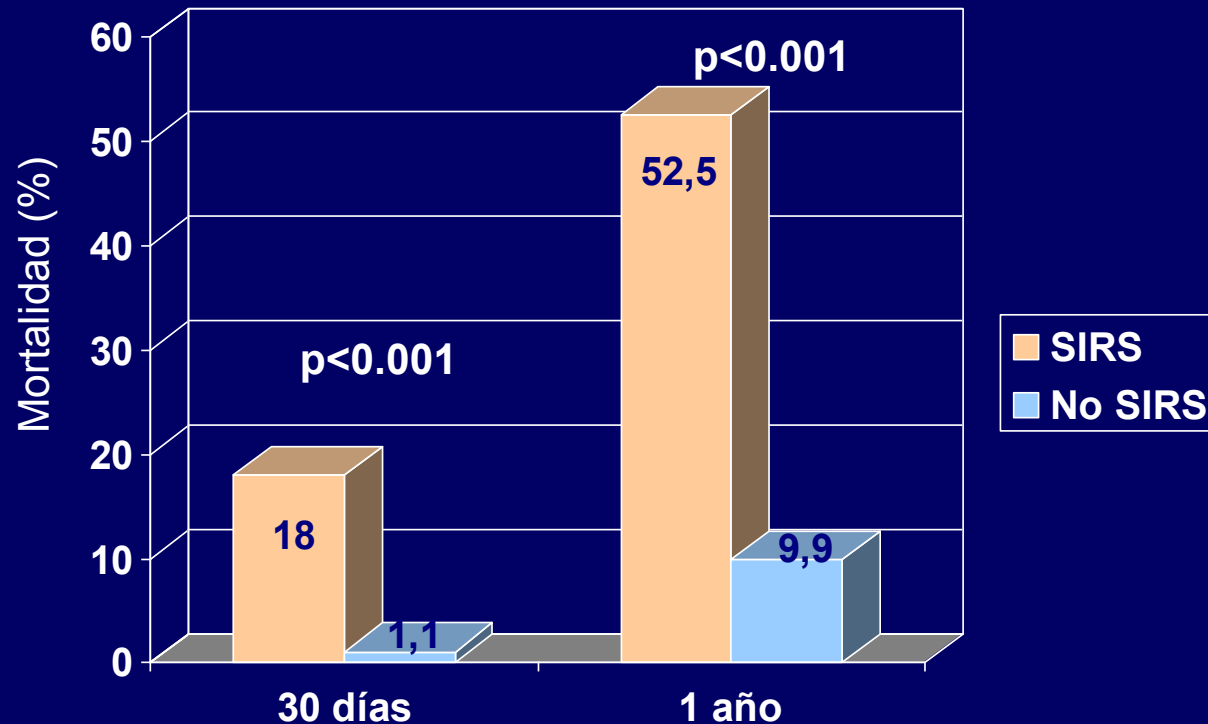
Systemic Inflammatory Response Syndrome Predicts Increased Mortality in Patients After TAVR

Single-center study of 152 high-risk pts with symptomatic severe aortic stenosis
January 2008 to June 2011.

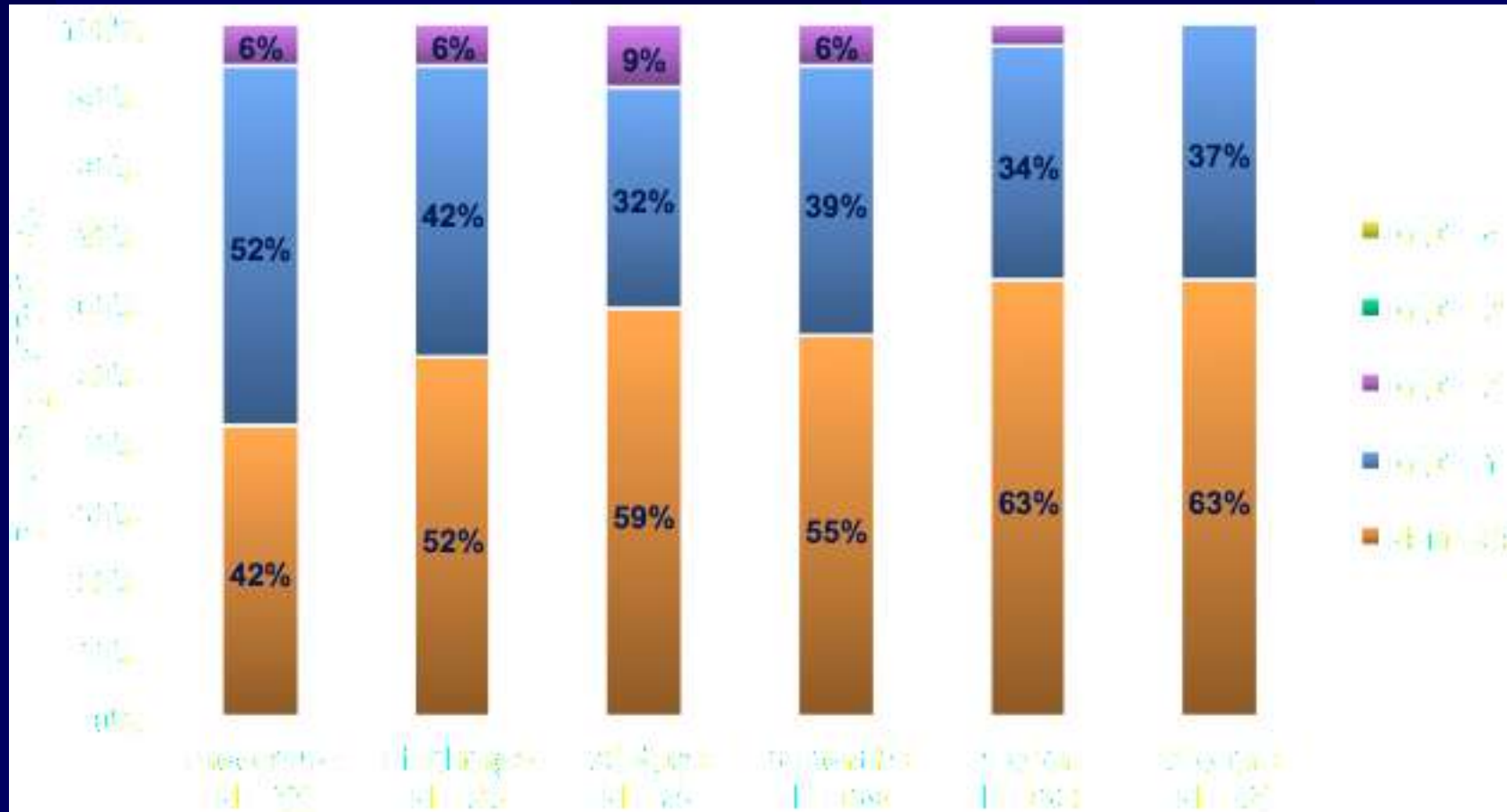
SIRS in 40.1%

2 de los siguientes:

- Fiebre > 38°C o Hipotermia
- Taquipnea (< 20 x') o PaCO₂ < 32
- Taquicardia > 90 lpm
- Leucocitos > 12.00 o < 4000 o neutrófilos inmaduros > 10%
- TAS < 90 o TAD < 60 mmHg



Aortic Regurgitation @ 2 Year



Impact of Paravalvular Leakage on Outcome in Patients After Transcatheter Aortic Valve Implantation

122 TAVI ptes (CoreValve 79.5%, Edwards SAPIEN 20.5%)

Severity of periAR was evaluated by:

Echocardiography

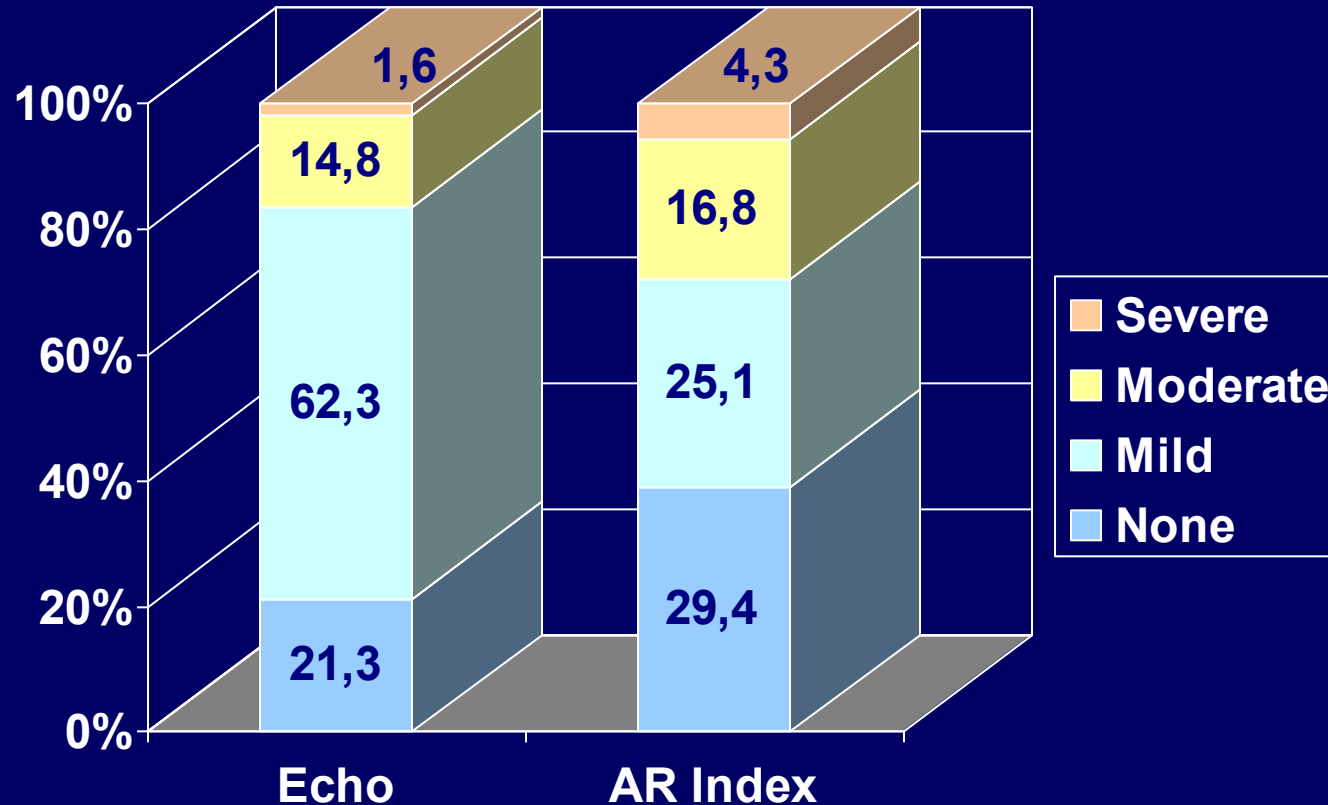
Angiography

Periprocedural measurement of the dimensionless AR index:

$$\frac{\text{diastolic blood pressure} - \text{left ventricular end-diastolic pressure}}{\text{systolic blood pressure}} \times 100$$

A cutoff value of 25 was used to identify patients at risk.

Impact of Paravalvular Leakage on Outcome in Patients After Transcatheter Aortic Valve Implantation



Impact of Paravalvular Leakage on Outcome in Patients After Transcatheter Aortic Valve Implantation

	1-y Mortality %	p
Echo No/Mild	19.6	<0.001
Echo Mod/Sev	60.0	
AR Index \geq 25	14.3	<0.001
AR Index < 25	43.3	
Echo No/Mild AR Index \geq 25	14.3	0.04
Echo No/Mild AR Index < 25	31.3	

Incidence, Predictive Factors, and Prognostic Value of Myocardial Injury Following Uncomplicated Transcatheter Aortic Valve Implantation

101 TAVI ptes (TF 38, TA 63). TnT and CKmb at 6, 12, 24, 48 and 72 hs.

MORTALIDAD

30 días:

6 muertes TnT 0.98 (0.38-1.33)

p=0.19

95 vivos TnT 0.48 (0.23-0.82)

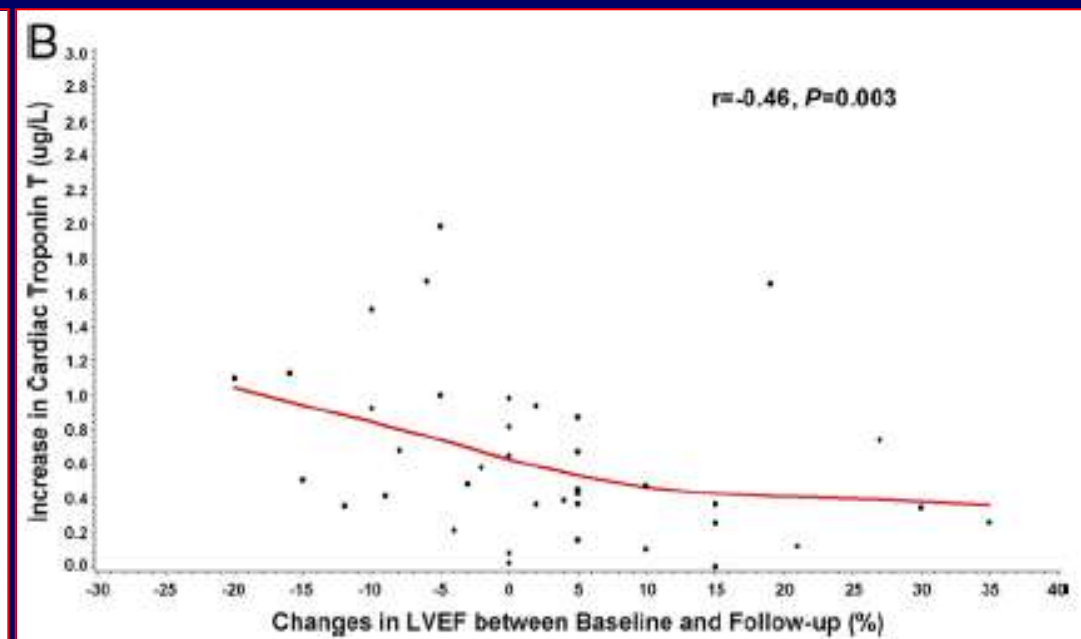
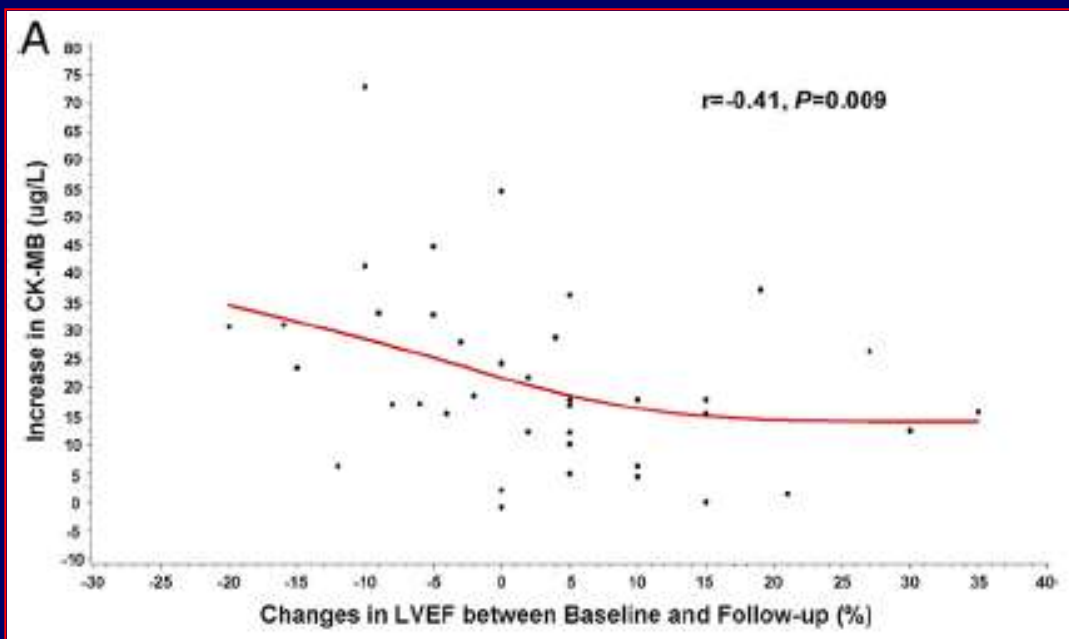
9 meses:

HR 1.14 (1.02-1.28) por cada \uparrow 0.1 ug/l p=0.028

Cutoff > 0.6 ug/l S 67%, E 62%

Incidence, Predictive Factors, and Prognostic Value of Myocardial Injury Following Uncomplicated Transcatheter Aortic Valve Implantation

LVEF decrease according changes in cardiac biomarkers



Cutoff: > 26 ug/l
S 72%
E 64%

> 0.48 ug/l
S 64%
E 79%



Conclusiones:

Las complicaciones de TAVI, que impactan en forma adversa en la evolución son frecuentes, ocurren independientemente de las otras y por ende, puede esperarse que un porcentaje significativo de estos pacientes presenten al menos una de ellas.

Todo esfuerzo farmacológico, endovascular y quirúrgico encaminado a prevenir, atenuar y/o corregir estas complicaciones deberá probar su eficacia en disminuir el impacto negativo de las mismas.

Disminuyendo los factores adversos haremos de TAVI un procedimiento cada vez más seguro y efectivo.





Thank you for your attention

