

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

Alain Cribier, Helene Eltchaninoff, Assaf Bash, Nicolas Borenstein, Christophe Tron, Fabrice Bauer, Genevieve Derumeaux, Frederic Anselme, François Laborde and Martin B. Leon



13 YEARS OF DEVELOPMENT

THE PROCEDURE

2015

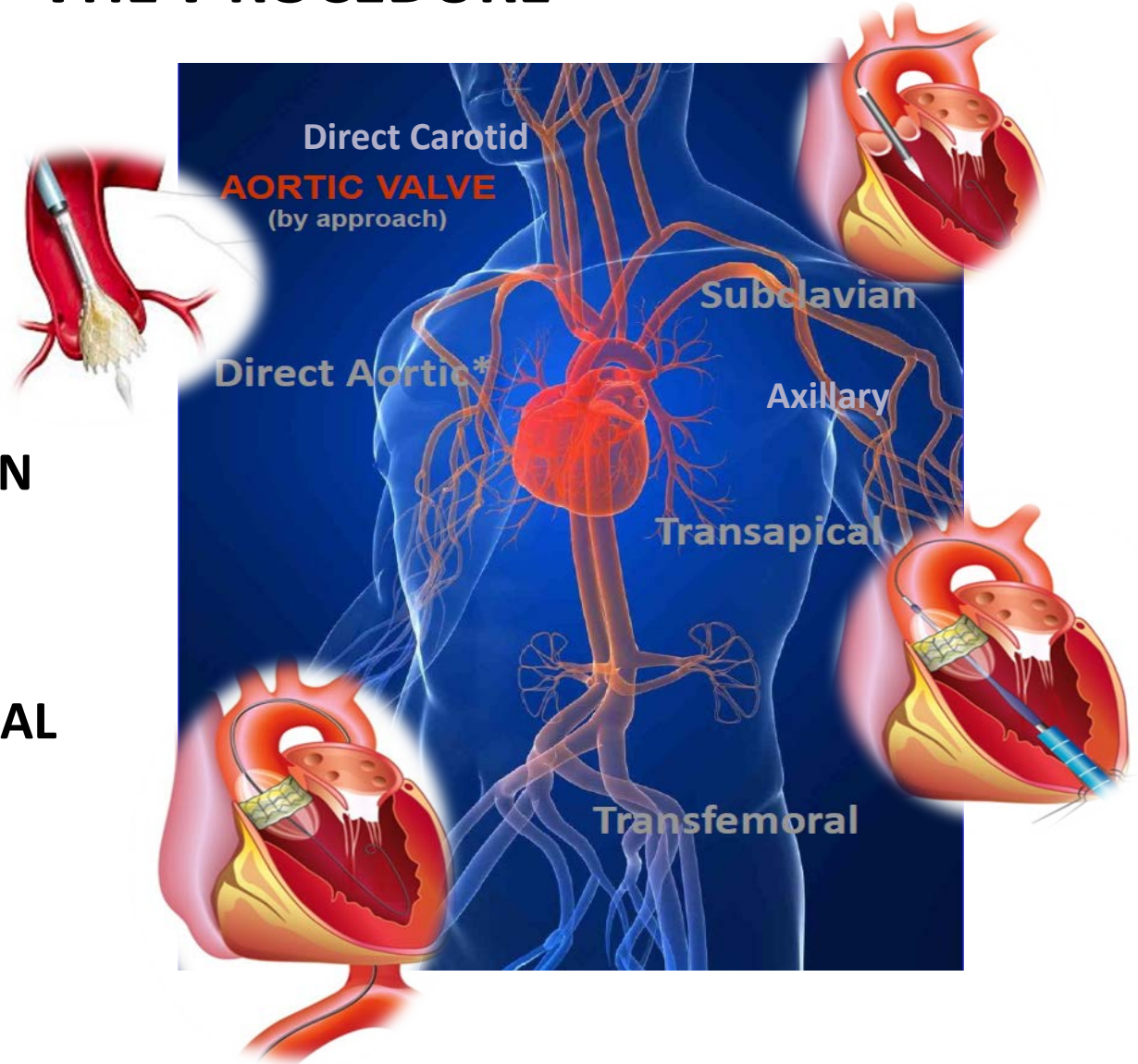
PATIENT - ADAPTED

ACCESS SITE SELECTION

ACCORDING TO

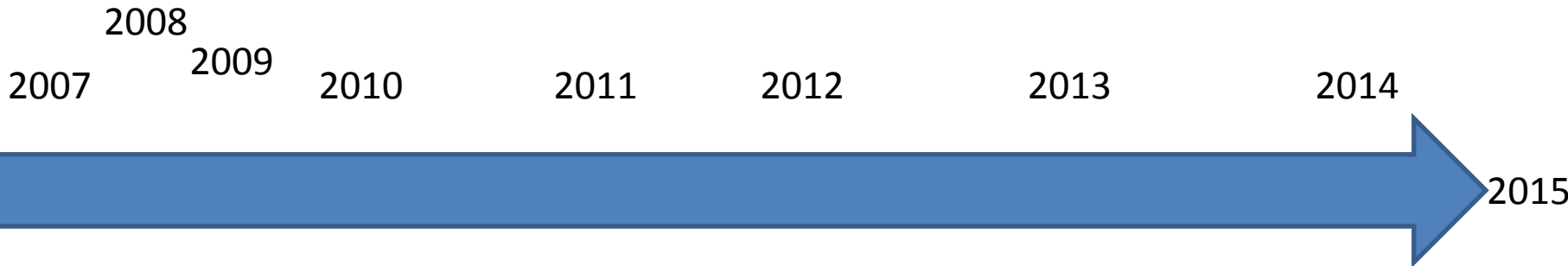
INDIVIDUAL ANATOMICAL

CHARACTERISTICS



13 YEARS OF TAVI (2002 – 2015)

PROSTHESIS WITH CE – MARK APPROVAL

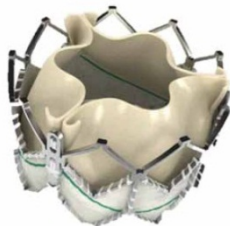


EDWARDS SAPIEN THV



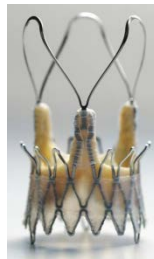
TF, TA

EDWARDS SAPIEN XT



TF, TA

SYMETIS ACURATE TA



TA

SJM PORTICO



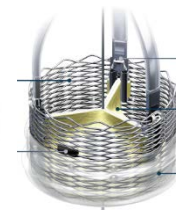
TF

DIRECT FLOW MEDICAL



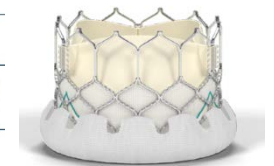
TF

BSC LOTUS



TF

EDWARDS SAPIEN 3



MEDTRONIC COREVALVE



TF, TS, DA

JENAVALVE



TA

MEDTRONIC ENGAGER



TA

TF

2012 ESC/EACTS Guidelines

2014 AHA/ACC Guidelines

*“In the absence of a perfect quantitative score, **the risk assessment should mostly rely on the clinical judgment of the ‘heart team’**, in addition to the combination of scores.”*

Recommendations	Class ^a	Level ^b
TAVI should only be undertaken with a multidisciplinary ‘heart team’ including cardiologists and cardiac surgeons and other specialists if necessary.	I	C

Recommendations	COR	LOE
For patients in whom TAVR or high-risk surgical AVR is being considered, members of a Heart Valve Team should collaborate to provide optimal patient care	I	C

CO-MORBIDITIES

Porcelain aorta

- Heavy circumferential calcification or severe atheromatous plaques

Frailty

- Slowness, weakness, exhaustion, wasting and malnutrition, low energy, loss of independence

Hostile chest

- Abnormal anatomy, complications of prior surgery, severe radiation, adhesions by pleural effusions

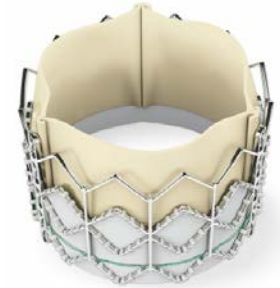
IMA adherent to sternum

- A patent IMA graft adherent to sternum such that injury during surgery is likely

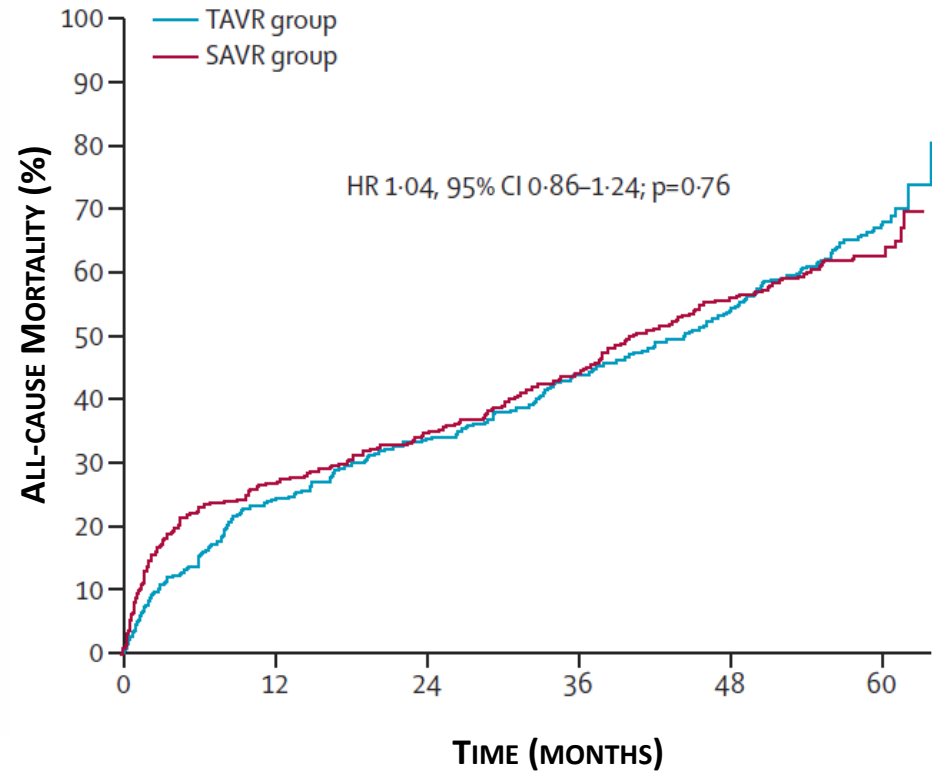
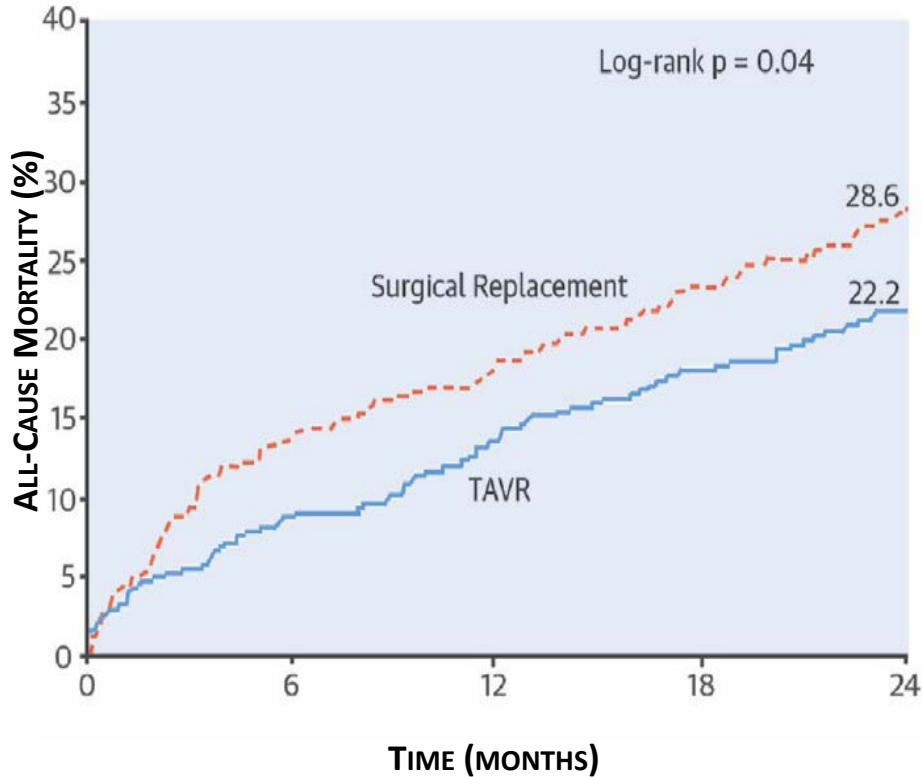
CLINICAL OUTCOMES AFTER TAVI AND SAVR IN HIGH-RISK PATIENTS



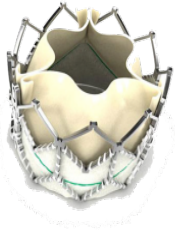
**COREVALVE
HIGH RISK**



PARTNER A



TAVI IN INTERMEDIATE RISK PATIENTS



PARTNER IIA

Heart Team Assessment

INTERMEDIATE RISK

Assessment:
Transfemoral Access

Transfemoral (TF)

Transapical (TA)

Randomization 1:1

Randomization 1:1

TF TAVI
Sapien XT

AVR

TA TAVI
Ascendra 2

AVR



SURTAVI

PREDICTIVE RISK OF
OPERATIVE MORTALITY
≥3% at 30days

HEART TEAM EVALUATION
Confirm Inclusion/Exclusion &
Intermediate Risk Classification

RANDOMIZATION
Stratified by need for
revascularization

N = ~2,500 patients
115 sites

TAVI
Medtronic CoreValve

SAVR

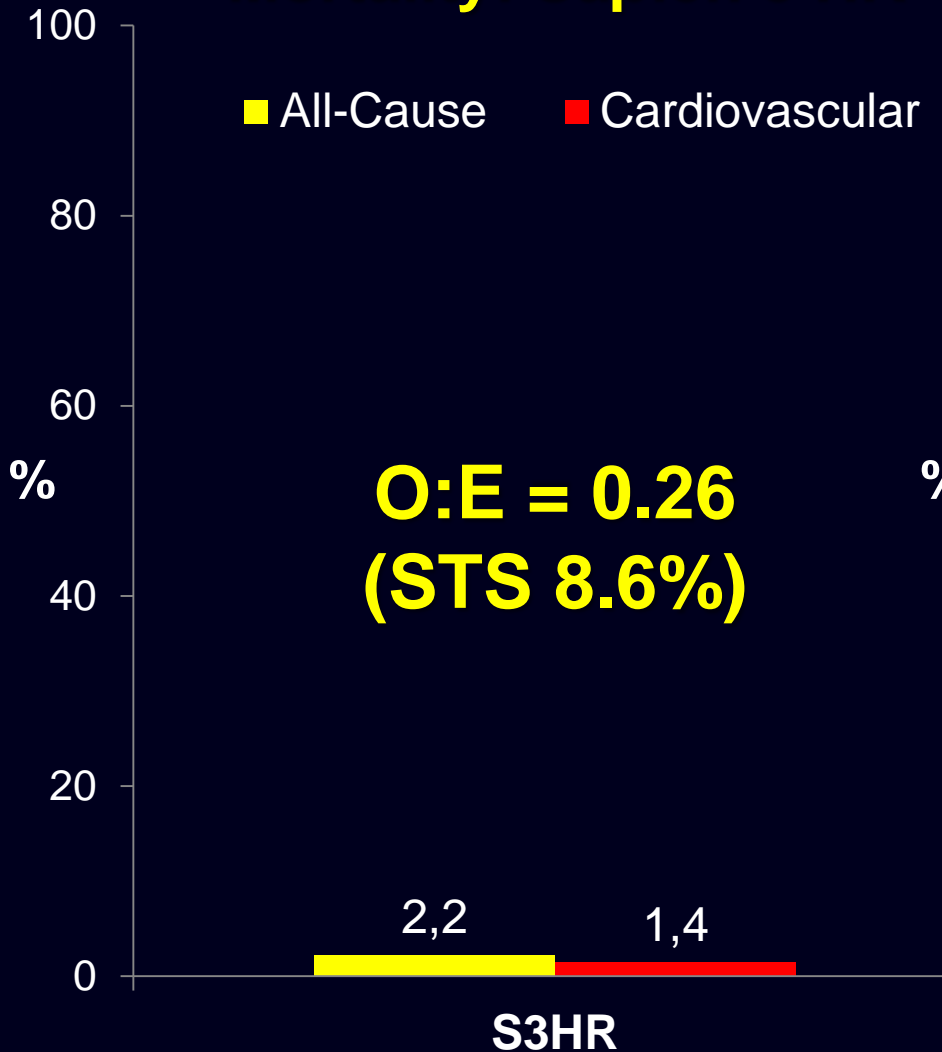


ALL-CAUSE MORTALITY AT 30 DAYS

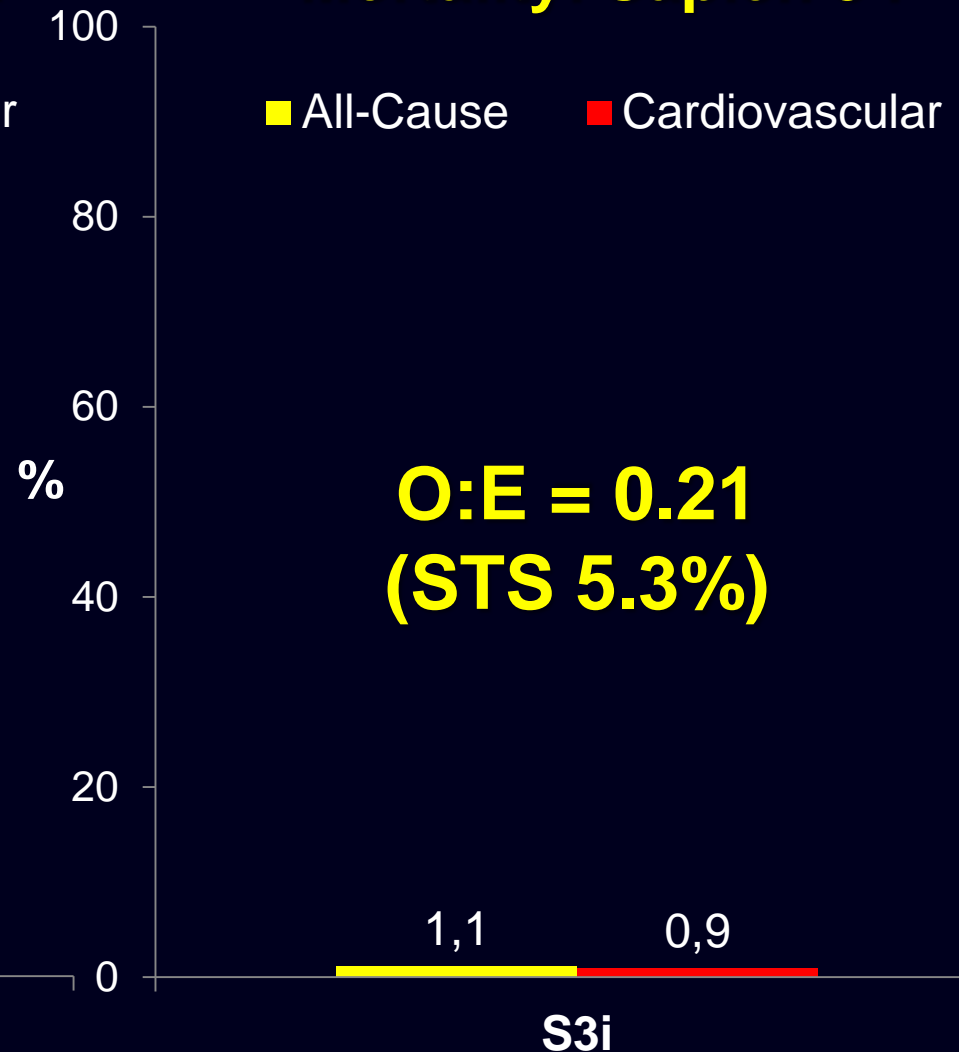
(AS TREATED PATIENTS)



Mortality: Sapien 3 HR



Mortality: Sapien 3 i

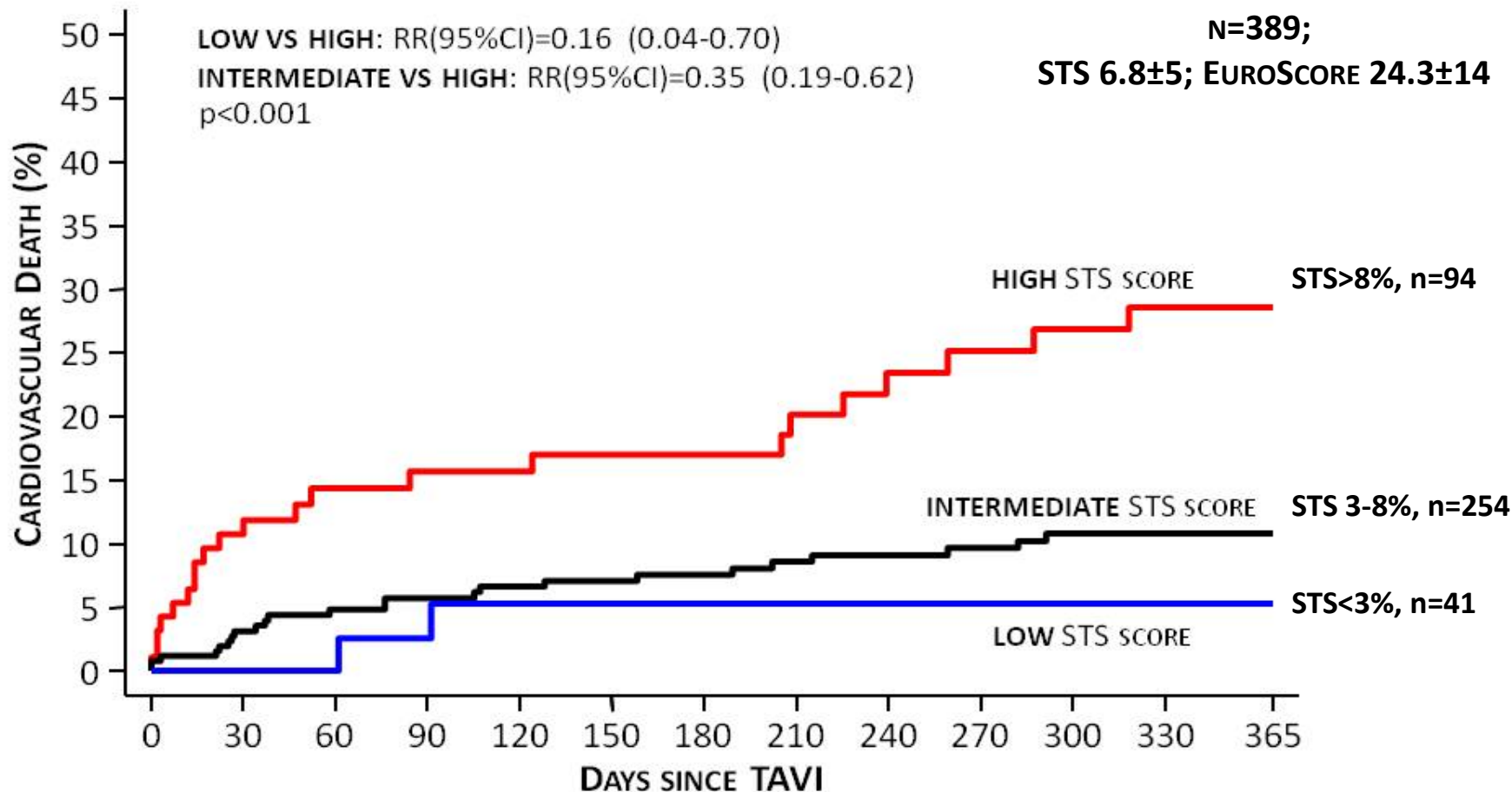


TRANSCATHETER AORTIC VALVE IMPLANTATION IN LOW AND INTERMEDIATE RISK PATIENTS



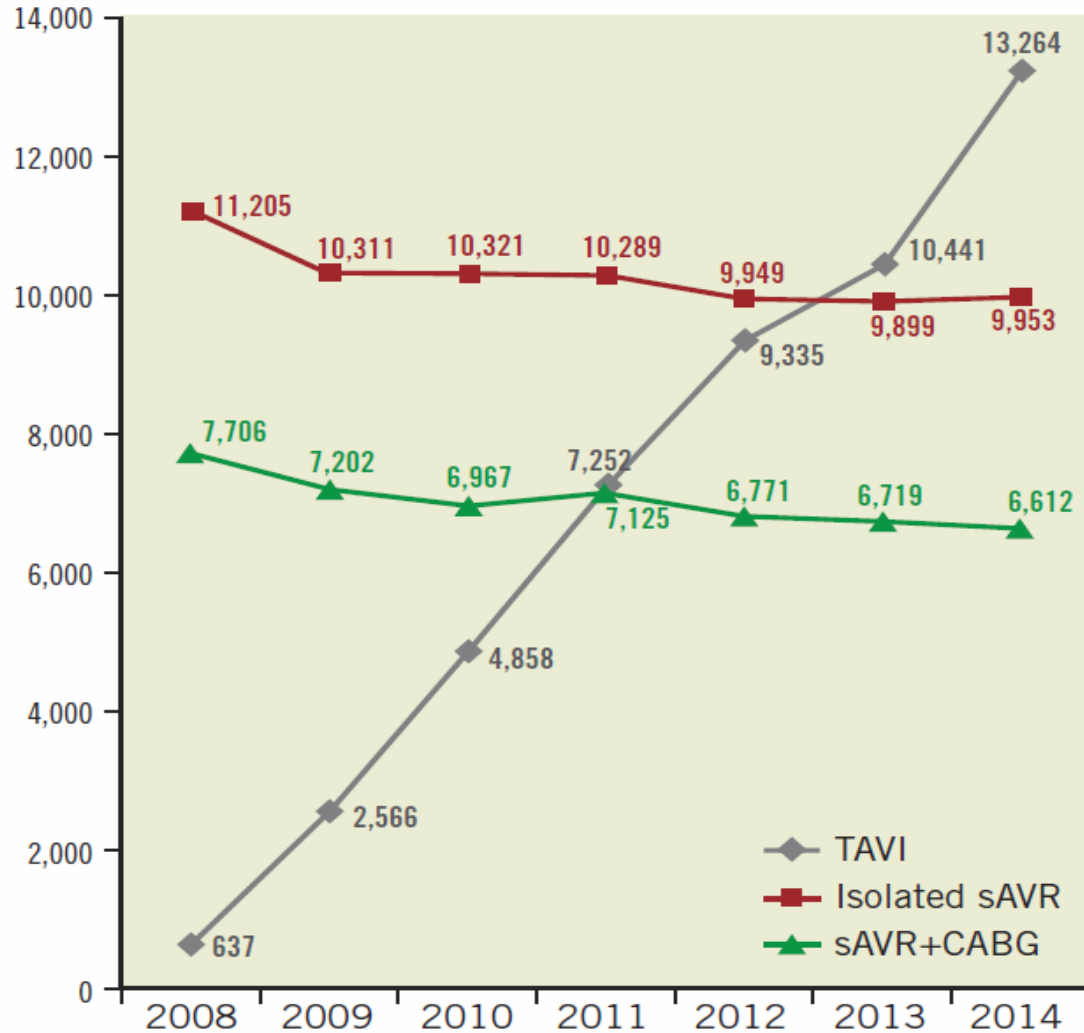
WENAWESER P ET AL. EUR HEART J. 2013; 34:1894-905

CARDIOVASCULAR MORTALITY AT 12 MONTH FOLLOW-UP



TRENDS IN TAVI, SAVR AND SAVR+CABG IN GERMANY

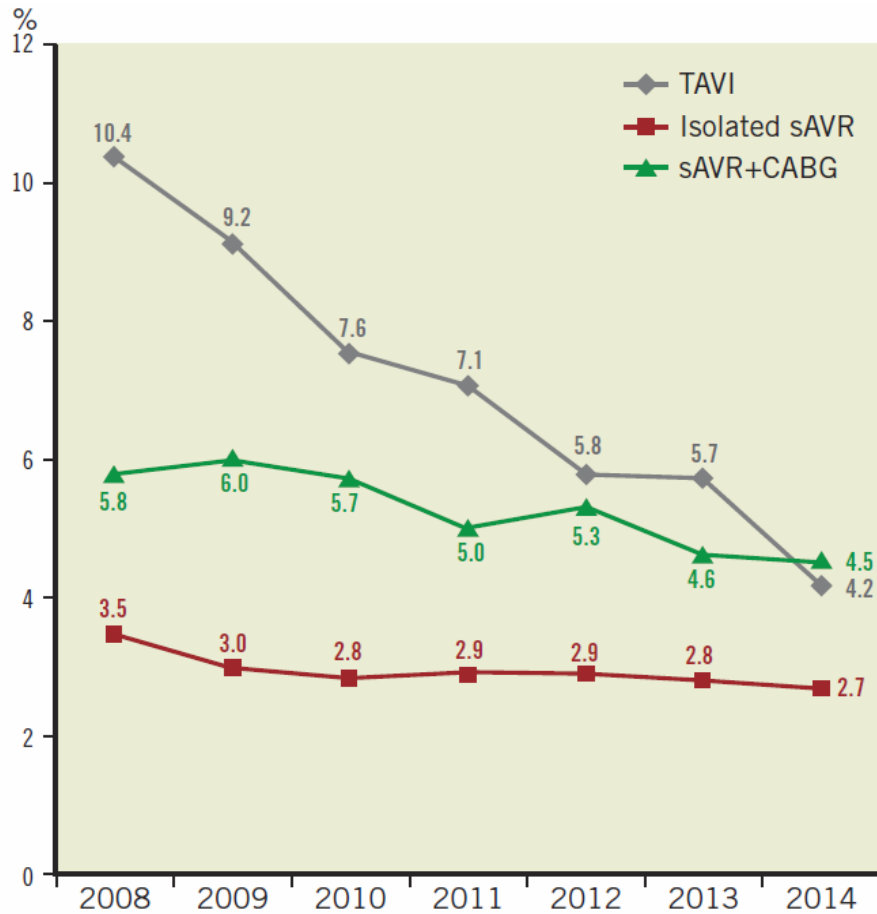
NUMBER OF PATIENTS 2008 - 2014



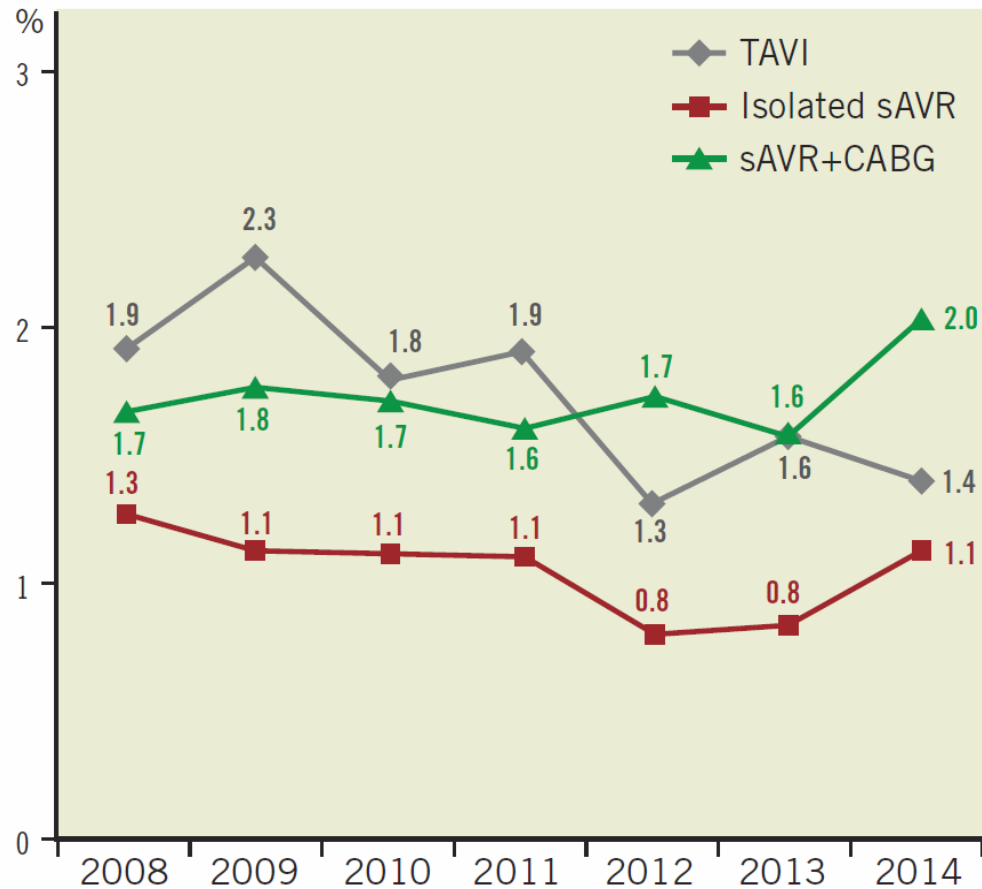
TRENDS IN TAVI, SAVR AND SAVR+CABG IN GERMANY

2008 - 2014

**UNADJUSTED
IN-HOSPITAL MORTALITY**



NEUROLOGIC COMPLICATIONS



INVASIVENESS

PATIENT-
PROSTHESIS
MISMATCH

**Will TAVI
REPLACE SAVR?**

AORTIC
REGURGITATION

ATRIAL
FIBRILLATION
AND STROKE

PERMANENT
PACEMAKER

Impact of Access on TAVI Procedural and Midterm Follow-Up: A Meta-Analysis of 13 Studies and 10,468 Patients

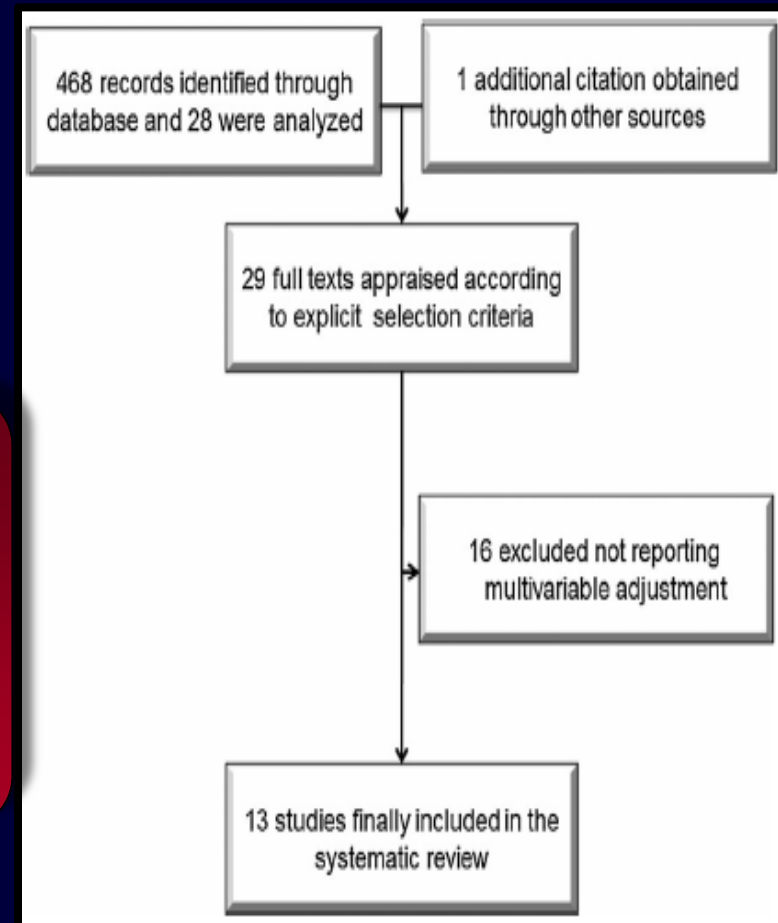
J Interven Cardiol 2014;27:500

FEDERICO CONROTTO, M.D.,¹ FABRIZIO D'ASCENZO, M.D.,¹ GIORDANA FRANCESCA, M.D.,¹
CHIARA COLACI, M.D.,¹ PAOLO SACCIATELLA, M.D.,¹ GIUSEPPE BIONDI-ZOCCAI, M.D.,²
CLAUDIO MORETTI, M.D.,¹ MAURIZIO D'AMICO, M.D.,¹ FIORENZO GAITA, M.D.,¹ and
SEBASTIANO MARRA, M.D.¹

10468 pts
Median age: 82
years
50% male
Studies from 2005-

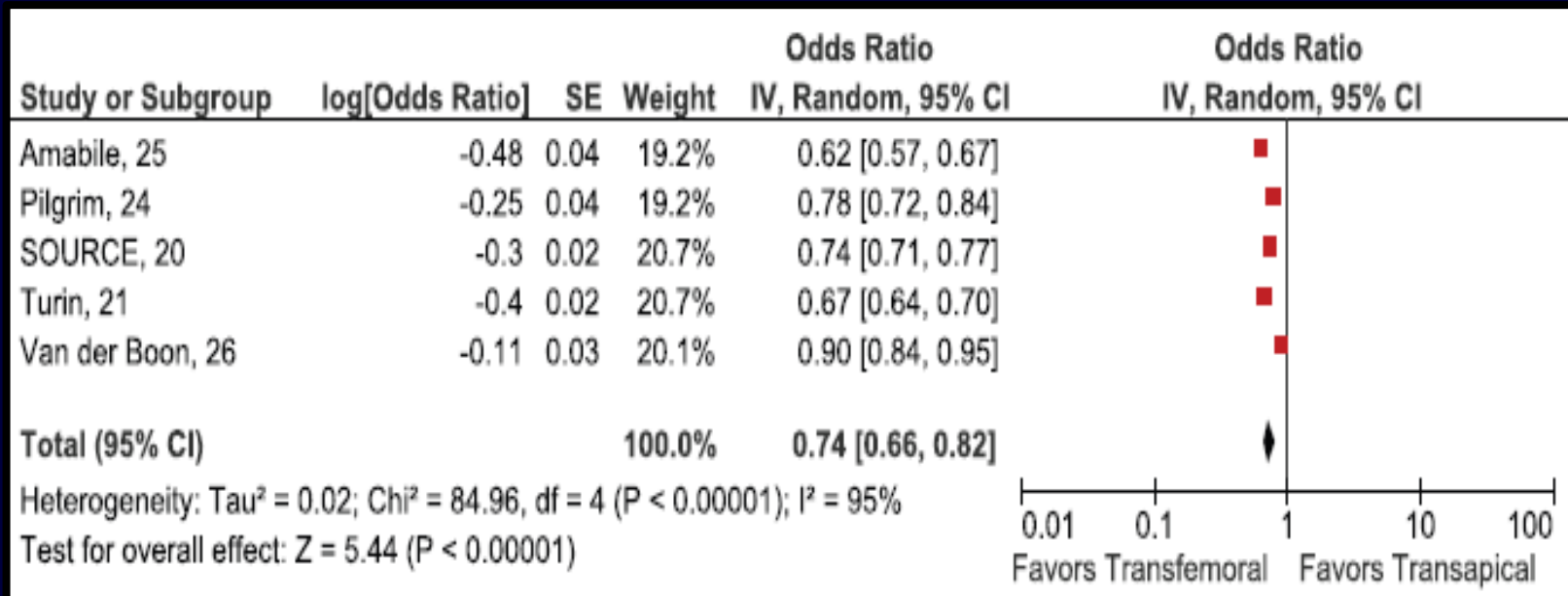
Mean Logistic EuroSCORE more than
20% in all the studies, except for one
(18.5%),
Logistic EUROSCORE higher in TA
patients if compared to TF patients in the

Mean STS score >
5%



Impact of Access on TAVI Procedural and Midterm Follow-Up: A Meta-Analysis of 13 Studies and 10,468 Patients

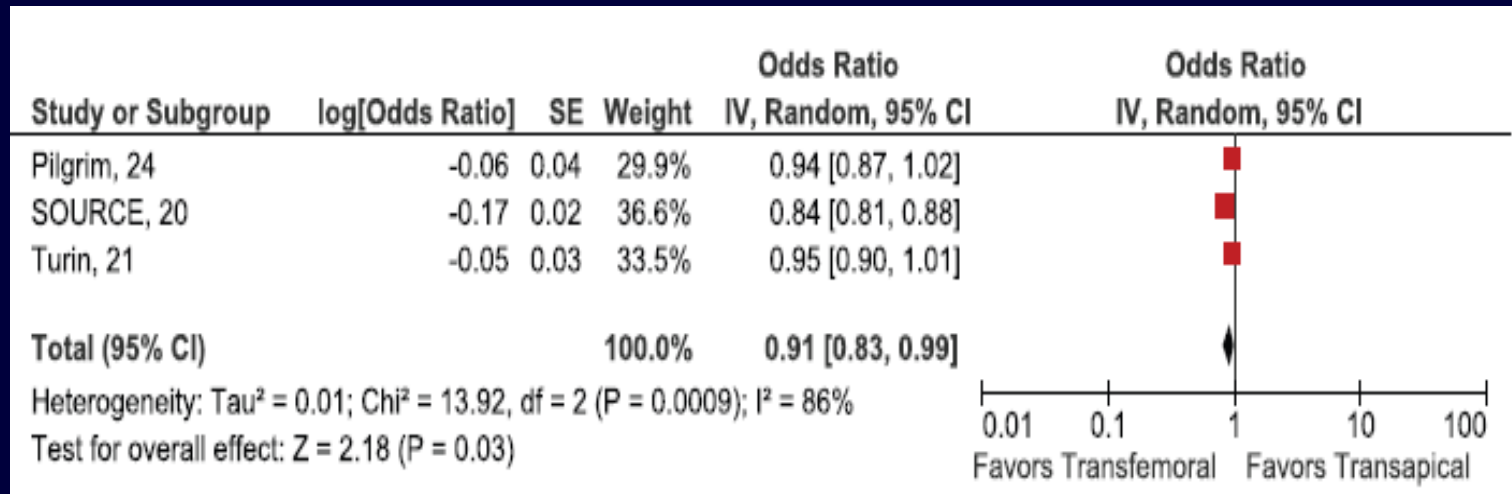
J Interven Cardiol 2014;27:500–50



Pooled adjusted odds ratio for peri-procedural bleedings

Impact of Access on TAVI Procedural and Midterm Follow-Up: A Meta-Analysis of 13 Studies and 10,468 Patients

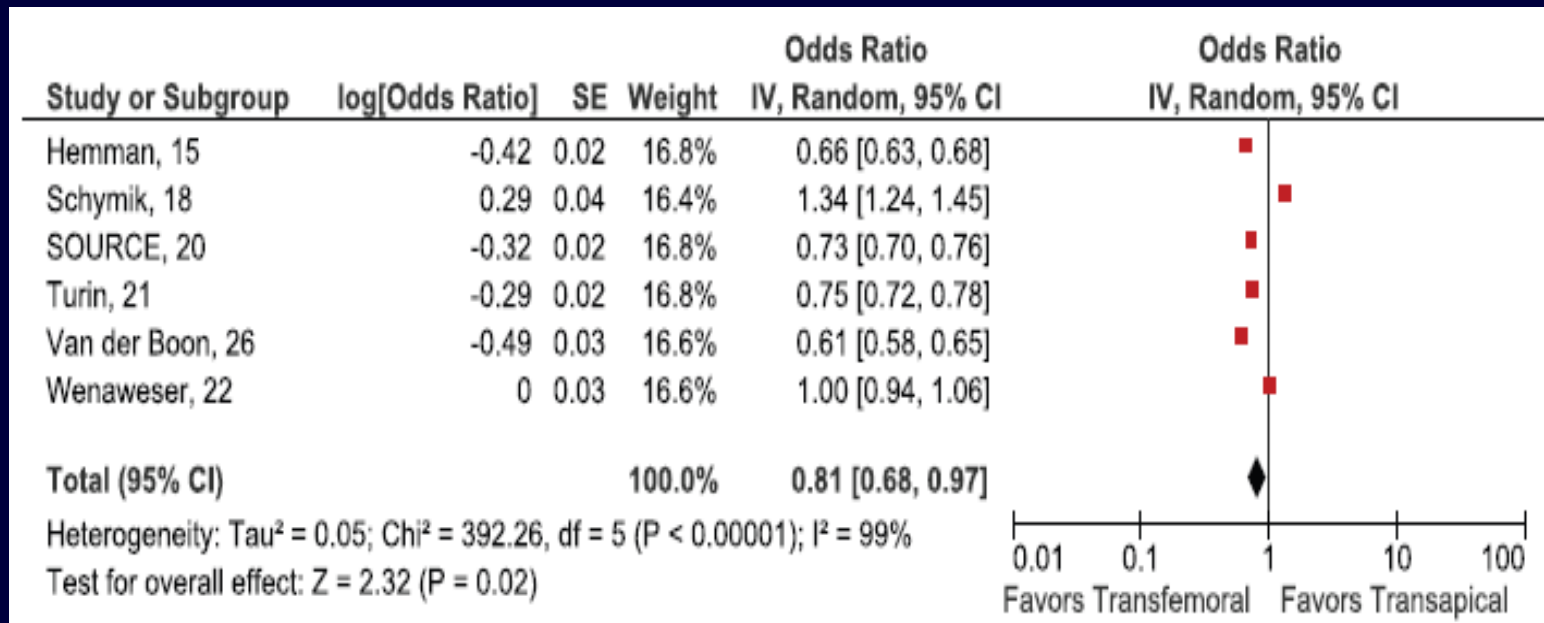
J Interven Cardiol 2014;27:500–50



Pooled adjusted odds ratio for peri-procedural stroke

Impact of Access on TAVI Procedural and Midterm Follow-Up: A Meta-Analysis of 13 Studies and 10,468 Patients

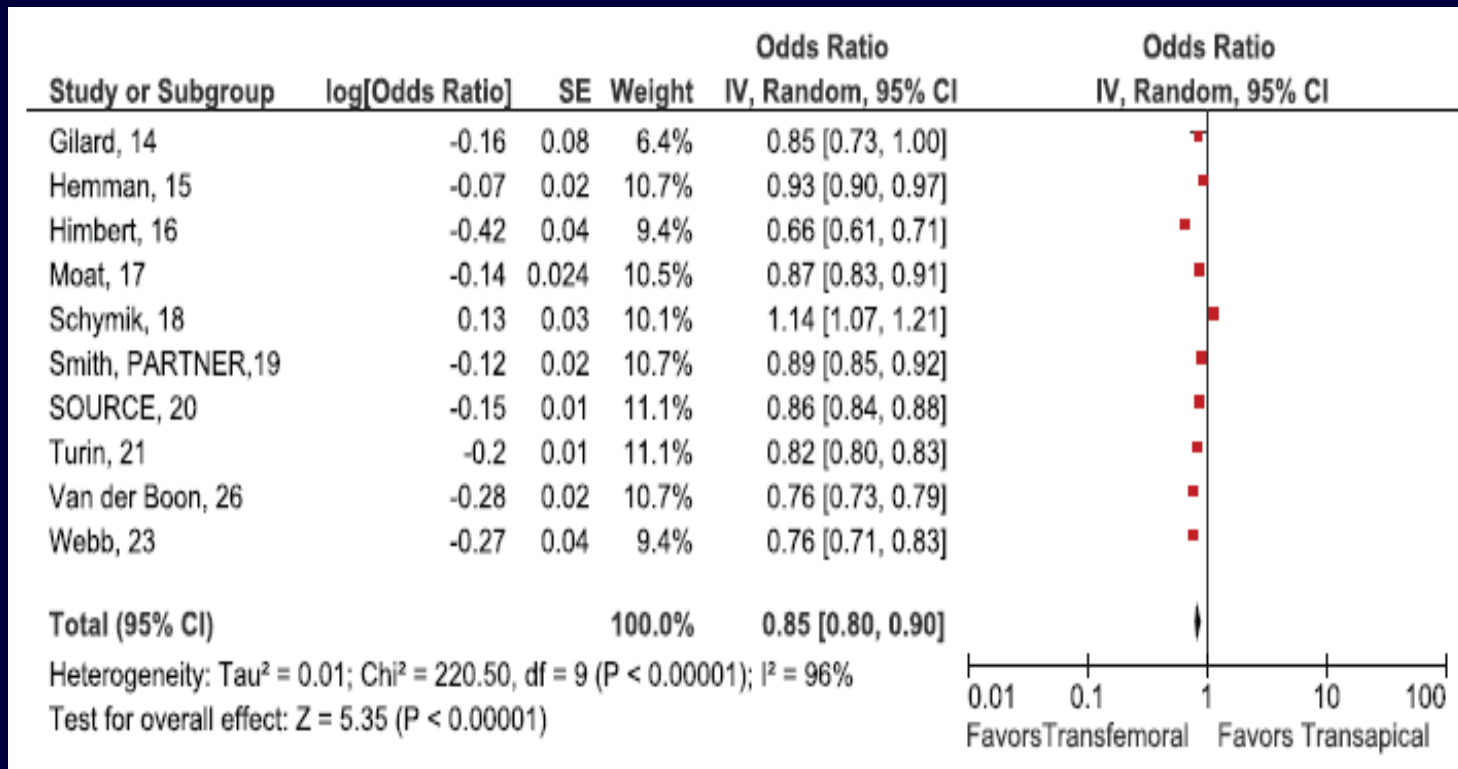
J Interven Cardiol 2014;27:500–50



Pooled adjusted odds ratio for 30-days mortality

Impact of Access on TAVI Procedural and Midterm Follow-Up: A Meta-Analysis of 13 Studies and 10,468 Patients

J Interven Cardiol 2014;27:500–50



Pooled adjusted odds ratio for mid-term mortality
(1 y)