



Cost-effectiveness of TAVI versus sutureless in low-medium risk patients

Miceli A, MD, PhD

**Istituto Clinico Sant'Ambrogio
Gruppo Ospedaliero San Donato**



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Transcatheter or Surgical Aortic-Valve Replacement in Intermediate-Risk Patients

Martin B. Leon, M.D., Craig R. Smith, M.D., Michael J. Mack, M.D., Raj R. Makkar, M.D.,
Lars G. Svensson, M.D., Ph.D., Susheel K. Kodali, M.D., Vinod H. Thourani, M.D., E. Murat Tuzcu, M.D.,
D. Craig Miller, M.D., Howard C. Herrmann, M.D., Darshan Doshi, M.D., David J. Cohen, M.D.,
Augusto D. Pichard, M.D., Samir Kapadia, M.D., Todd Dewey, M.D., Vasilis Babaliaros, M.D.,
Wilson Y. Szeto, M.D., Mathew R. Williams, M.D., Dean Kereiakes, M.D., Alan Zajarias, M.D.,
Kevin L. Greason, M.D., Brian K. Whisenant, M.D., Robert W. Hodson, M.D., Jeffrey W. Moses, M.D.,
Alfredo Trento, M.D., David L. Brown, M.D., William F. Fearon, M.D., Philippe Pibarot, D.V.M., Ph.D.,
Rebecca T. Hahn, M.D., Wael A. Jaber, M.D., William N. Anderson, Ph.D., Maria C. Alu, M.M.,
and John G. Webb, M.D., for the PARTNER 2 Investigators*

CONCLUSIONS

In intermediate-risk patients, TAVR was similar to surgical AVR with respect to the primary end point of **death or disabling stroke**”



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Transcatheter versus surgical aortic valve replacement in patients with severe aortic stenosis at low and intermediate risk: systematic review and meta-analysis

Reed A Siemieniuk,^{1,2} Thomas Agoritsas,^{1,3} Veena Manja,^{1,4,5} Tahira Devji,¹ Yaping Chang,¹ Malgorzata M Bala,⁶ Lehana Thabane,¹ Gordon H Guyatt¹

STUDY SELECTION:

Randomized trials of TAVI with SAVR in patients with a mean perioperative risk of death <8%

Trial	No randomized	Longest follow-up (months)	TAVI valve	Mean (SD) risk score*
STACCATO	72	3	Edwards SAPIEN balloon expanding	3.3 (1.4)
US Pivotal	795	36	Medtronic CoreValve self expanding	7.4 (3.1)
NOTION	280	24	Medtronic CoreValve self expanding	3.0 (1.6)
PARTNER 2A	2032	24	Edwards SAPIEN XT balloon expanding	5.8 (2.0)



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thebmj | BMJ 2016;354:i5130 | doi: 10.1136/bmj.i5130



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Transcatheter versus surgical aortic valve replacement in patients with severe aortic stenosis at low and intermediate risk: systematic review and meta-analysis

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Outcomes favoring SAVR

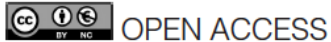
Symptoms of heart failure
Aortic valve reintervention
Pacemaker insertion
Paravalvular Leakage

Outcomes favouring TAVI (TA-TF)

Bleeding
Atrial Fibrillation
Recovery time



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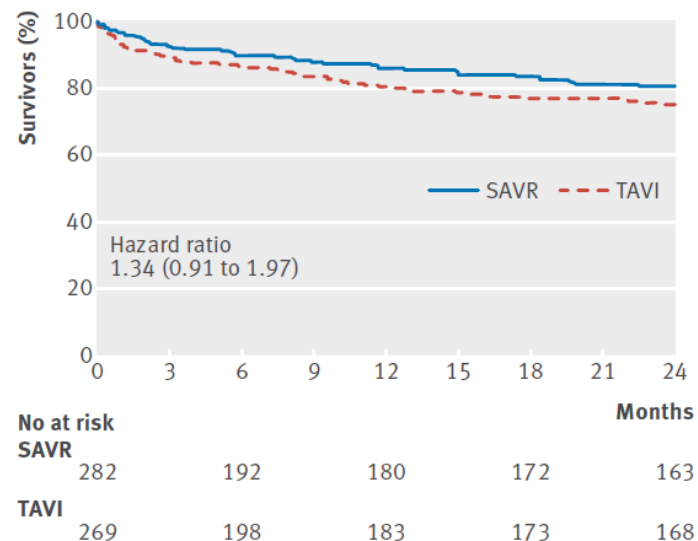


Transcatheter versus surgical aortic valve replacement in patients with severe aortic stenosis at low and intermediate risk: systematic review and meta-analysis

Reed A Siemieniuk,^{1,2} Thomas Agoritsas,^{1,3} Veena Manja,^{1,4,5} Tahira Devji,¹ Yaping Chang,¹ Malgorzata M Bala,⁶ Lehana Thabane,¹ Gordon H Guyatt¹

Outcomes favoring TF
over SAVR

Survival
Acute Kidney injury



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Patients at intermediate surgical risk undergoing isolated interventional or surgical aortic valve replacement for severe symptomatic aortic valve stenosis. One year results from the German Aortic Valve Registry (GARY).

Nicolas Werner, Ralf Zahn, Andreas Beckmann, Timm Bauer, Christian W. Hamm, Friedrich W. Mohr, Alexander Berkowitsch, Sandra Landwehr, Stephan Ensminger, Christian Frerker, Helge Möllmann, Thomas Walther, Steffen Schneider and Rüdiger Lange

on behalf of the GARY Executive Board.



Deutsches
Aortenklappenregister

Nicolas Werner

Medical Clinic B, Klinikum Ludwigshafen, Germany.

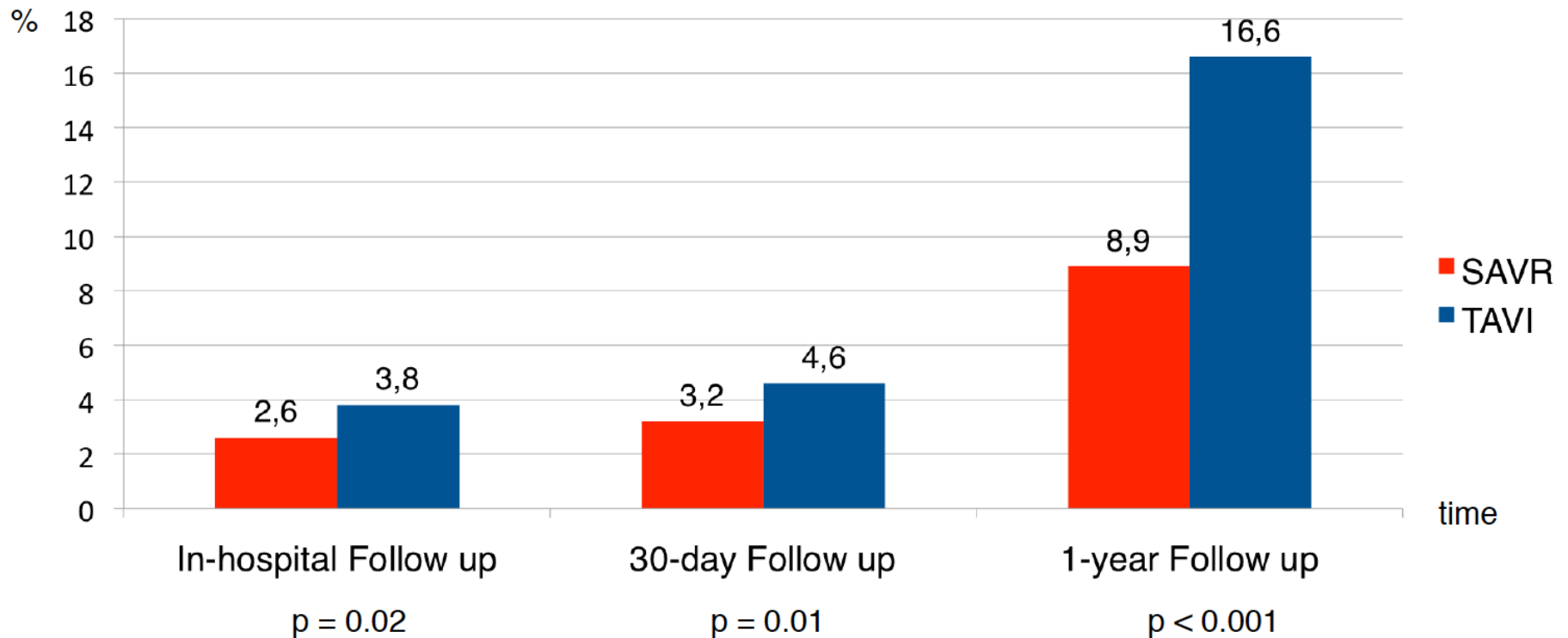
AHA's Scientific Sessions, Monday, November 14, 2016



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Results III – Clinical outcome (all-cause mortality)



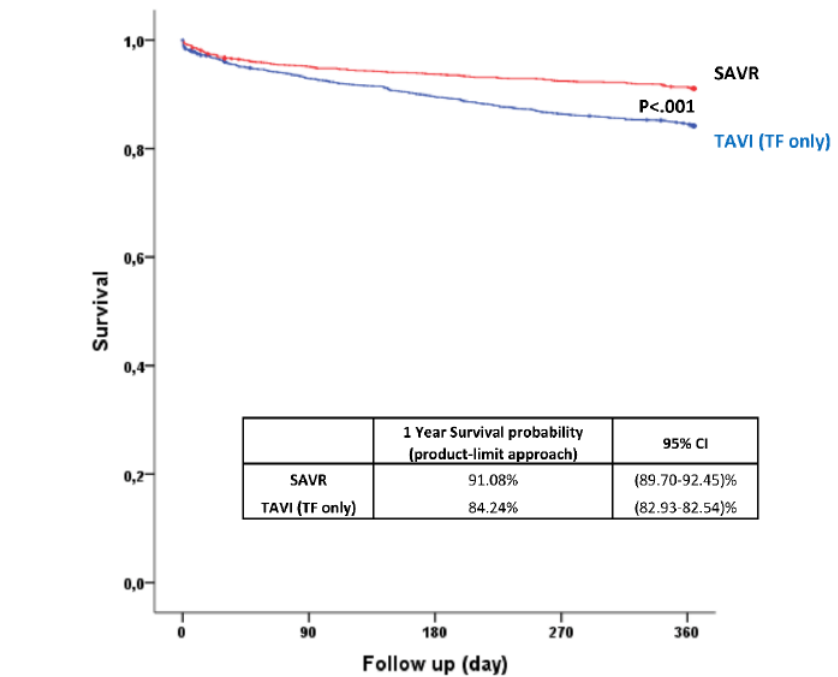
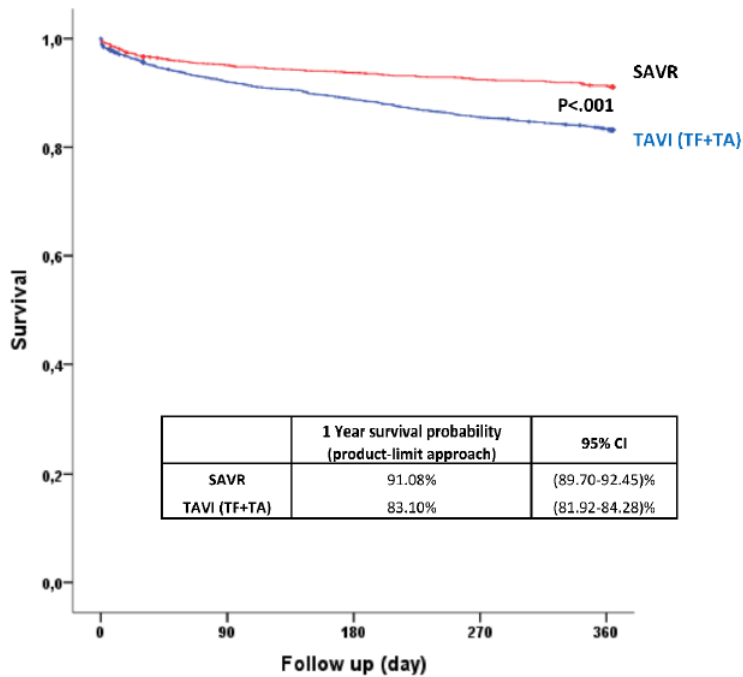
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Unadjusted all-cause mortality (1-year FU)

(Completeness of data: TAVI 97.5%; SAVR 98.9%)



Deutsches
Aortenklappenregister



Pts on risk

1896	1783	1757	1734	1706
4101	3676	3546	3415	3227

Pts on risk

1896	1783	1757	1734	1706
3074	2776	2674	2581	2499



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Propensity Score analysis

All cause one-year mortality rates for SAVR and TAVI according to propensity score quintile

SAVR vs. TAVI (transfemoral and transapical)

Stratified estimate for whole population	SAVR		TAVI		Difference; (95% CI)	p-value
	Counts (n/N)	Mortality (%)	Counts (n/N)	Mortality (%)		
Quintile 1	65/875	7.43%	14/326	12.58%	5.15%; (1.44-9.48)%	.004
Quintile 2	47/551	8.53%	77/647	11.90%	3.37%; (-0.10-6.78)%	.067
Quintile 3	33/289	11.42%	134/910	14.73%	3.31%; (-1.40-7.31)%	.158
Quintile 4	17/141	12.06%	191/1059	18.04%	5.98%; (-0.79-11.00)%	.100
Quintile 5	6/40	15.00%	236/1159	20.36%	5.36%; (-8.88-13.66)%	.379
Stratified estimate		10.89%		15.52%	4.63%; (1.75-7.52)%	.002

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Propensity Score analysis

All cause one-year mortality rates for SAVR and TAVI according to propensity score quintile

SAVR vs. TAVI (transfemoral, only)

	SAVR		TAVI (transfemoral only)		Difference; (95% CI)	p-value
	Counts (n/N)	Mortality (%)	Counts (n/N)	Mortality (%)		
Quintile 1	65/875	7.43%	25/218	11.47%	4.04% (-0.03-9.19)%	.043
Quintile 2	47/551	8.53%	56/471	11.89%	3.36% (-0.35-7.19)%	.088
Quintile 3	33/289	11.42%	86/661	13.01%	1.59% (-3.21-5.81)%	.489
Quintile 4	17/141	12.06%	130/769	16.91%	4.85% (-2.02-10.06)%	.182
Quintile 5	6/40	15.00%	177/955	18.53%	3.53% (-10.73-11.88)%	.533
Stratified estimate		10.78%		14.26%	3.48%; (0.53-6.43)%	.021

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Sutureless, rapid deployment valves and stented bioprosthesis in aortic valve replacement: recommendations of an International Expert Consensus Panel

Borut Gersak^{a,*}, Theodor Fischlein^b, Thierry A. Folliguet^c, Bart Meuris^d, Kevin H.T. Teoh^e, Simon C. Moten^f, Marco Solinas^g, Antonio Miceli^h, Peter J. Oberwalderⁱ, Manfredo Rambaldini^j, Gopal Bhatnagar^k, Michael A. Borger^l, Denis Bouchard^m, Olivier Bouchotⁿ, Stephen C. Clark^o, Otto E. Dapuntⁱ, Matteo Ferrarini^p, Guenther Laufer^q, Carmelo Mignosa^r, Russell Millner^s, Philippe Noirhomme^t, Steffen Pfeiffer^b, Xavier Ruyra-Baliarda^u, Malakh Shrestha^v, Rakesh M. Suri^w, Giovanni Troise^x, Anno Diegeler^y, Francois Laborde^z, Marc Laskar^{aa}, Hani K. Najm^{ab} and Mattia Glauber^p



A.



B.



C.

Sutureless aortic valve replacement: a systematic review and meta-analysis

Kevin Phan¹, Yi-Chin Tsai², Nithya Niranjani¹, Denis Bouchard³, Thierry P. Carrel⁴, Otto E. Dapunt⁵, Harald C. Eichstaedt⁶, Theodor Fischlein⁷, Borut Gersak⁸, Mattia Glauber⁹, Axel Haverich¹⁰, Martin Misfeld¹¹, Peter J. Oberwalder⁵, Giuseppe Santarpino⁷, Malakh Lal Shrestha¹⁰, Marco Solinas⁹, Marco Vola¹², Tristan D. Yan¹, Marco Di Eusanio¹³

Parameter	Events/total	N	Weighted pooled proportion (%) or estimate (95% CI)	Heterogeneity	
				I ²	P value
Early outcomes					
30 day mortality	22/940	10	2.1 (1.1-3.3)	11	0.341
Strokes	12/562	7	1.9 (0.8-3.4)	0	0.632
Valve degeneration/dislocation	12/504	6	2.3 (0.5-5.1)	52	0.062
Paravalvular leak	41/940	10	4.3 (2.2-6.9)	60	0.007
Renal failure	8/244	4	3.1 (1.0-6.0)	0	0.856
Up to 1-year follow-up					
All-cause mortality	57/926	10	4.9 (2.7-7.7)	59	0.007
Strokes	16/844	8	1.5 (0.4-3.1)	43	0.092
Valve degeneration/dislocation	1/438	4	0.4 (0-1.4)	0	0.79
Paravalvular leak	33/960	10	3.0 (1.0-5.8)	72	<0.001
Permanent pacemaker	38/627	5	5.6 (3.5-8.0)	25	0.256
Renal failure	3/260	2	1.2 (0-4.1)	52	0.012
Endocarditis	26/1,032	10	2.2 (0.8-4.1)	58	0.012

CPB, cardiopulmonary bypass; AVR, aortic valve replacement; N, number of studies; CI, confidence interval.

• 12 Studies included
• 1037 patients

SUTURELESS VS STENTED

Aortic Valve Replacement Through Right Anterior Minithoracotomy: Can Sutureless Technology Improve Clinical Outcomes?

Daniyar Gilmanov, MD, Antonio Miceli, MD, Matteo Ferrarini, MD, Pierandrea Farneti, MD, Michele Murzi, MD, Marco Solinas, MD, and Mattia Glauber, MD

Department of Adult Cardiac Surgery, G. Pasquucci Heart Hospital, Gabriele Monasterio Foundation, Massa; and Humanitas Clinical and Research Center, Rozzano, Italy

A Randomized Multicenter Trial of Minimally Invasive Rapid Deployment Versus Conventional Full Sternotomy Aortic Valve Replacement

Michael A. Borger, MD, PhD, Vadim Moustafine, MD, Lenard Conradi, MD, Christoph Knosalla, MD, PhD, Markus Richter, MD, PhD, Denis R. Merk, MD, Torsten Doenst, MD, PhD, Robert Hammerschmidt, MD, Hendrik Treede, MD, PhD, Pascal Dohmen, MD, PhD, and Justus T. Strauch, MD

University of Leipzig, Leipzig; University Hospital of the Ruhr University of Bochum, North Rhine-Westphalia; University Heart Center Hamburg, Hamburg; German Heart Institute Berlin, Berlin; and Jena University Hospital, Jena, Germany

The Perceval S Aortic Valve Has the Potential of Shortening Surgical Time: Does It Also Result in Improved Outcome?

Giuseppe Santarpino, MD, Steffen Pfeiffer, MD, Giovanni Concistré, MD, Irena Grossmann, MD, Martin Hinzmann, MD, and Theodor Fischlein, MD

Departments of Cardiac Surgery and Anaesthesiology, Klinikum Nürnberg, Nuremberg, Germany

Better Short-Term Outcome by Using Sutureless Valves: A Propensity-Matched Score Analysis

Francesco Pollari, MD,* Giuseppe Santarpino, MD,* Angelo Maria Dell'Aquila, MD, Laszlo Gazdag, MD, Husam Alnahas, MD, Ferdinand Vogt, MD, Steffen Pfeiffer, MD, and Theodor Fischlein, MD

Department of Cardiac Surgery, Klinikum Nürnberg, Paracelsus Medizinischen Privatuniversität, Nuremberg; and Department of Cardiac Surgery, Universitätsklinikum Münster, Münster, Germany

Aortic valve replacement through full sternotomy with a stented bioprosthesis versus minimally invasive sternotomy with a sutureless bioprosthesis

Magnus Dalén^{ab*}, Fausto Biancari^c, Antonino S. Rubino^d, Giuseppe Santarpino^e, Natalie Glaser^{ab}, Herbert De Praetere^f, Keiichiro Kasama^g, Tatu Juvonen^g, Wanda Deste^d, Francesco Pollari^e, Bart Meuris^f, Theodor Fischlein^g, Carmelo Mignosa^d, Giuseppe Gatti^g, Aniello Pappalardo^g, Peter Svenarud^{ab*} and Ulrik Sartipy^{ab*}

Sutureless Perceval Aortic Valve in Comparison with the Stented Carpentier-Edwards Perimount Aortic Valve

Karl Christian König, Thorsten Wahlers, Maximilian Scherner, Jens Wippermann

Klinik für Herz- und Thoraxchirurgie, Herzzentrum, Universitätsklinik Köln, Cologne, Germany

REDUCTION OF CROSS CLAMP TIME AND CPB TIMES

KEY POINTS

COST-EFFECTIVENESS analysis:

- is a form of economic analysis that compares the relative costs and outcomes (effects) of different courses of action.
- How to evaluate the COST- EFFECTIVENESS ?
 - TAVI
 - Sutureless



Intermediate / low risk Patients

1. Effectiveness

- **Mortality and Adverse event rates**



EFFECTIVENESS: Outcomes

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journal homepage: www.elsevier.com/locate/jjcc



Original article

Sutureless aortic valve replacement may improve early mortality compared with transcatheter aortic valve implantation: A meta-analysis of comparative studies

Hisato Takagi (MD, PhD)*, Takuya Umemoto (MD, PhD) for the ALICE (All-Literature Investigation of Cardiovascular Evidence) Group

Department of Cardiovascular Surgery, Shizuoka Medical Center, Shizuoka, Japan



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EFFECTIVENESS: Outcomes

Study	Predicted mortality (%)			
	Score	Sutureless AVR	TAVI	<i>p</i> value
Miceli 2015* [5]	Logistic EuroSCORE I	16.1 ± 11	15.7 ± 8.5	<0.0001
Kamperidis 2015 [6]	Logistic EuroSCORE I	15.9 ± 10.6	15.5 ± 8.4	0.85
Biancari 2015* [7]	Logistic EuroSCORE II	4.1 ± 3.2	3.6 ± 2.6	0.117
D'Onofrio 2012 [8]	Logistic EuroSCORE I	13.7 ± 7.2	14.8 ± 7.5	0.47
Doss 2012 [9]	Logistic EuroSCORE I	13.7 ± 6.3	35.3 ± 4.2	<0.004
Muneretto 2015 [10]	Logistic EuroSCORE I/ STS-PROM	16 ± 11.7/ 5.4 ± 6.8	20.4 ± 12.7/ 6 ± 3.6	N/R
Santarpino 2014 [11]	Logistic EuroSCORE I	18.1 ± 1.9	20.6 ± 2.2	0.81



EFFECTIVENESS: Outcomes

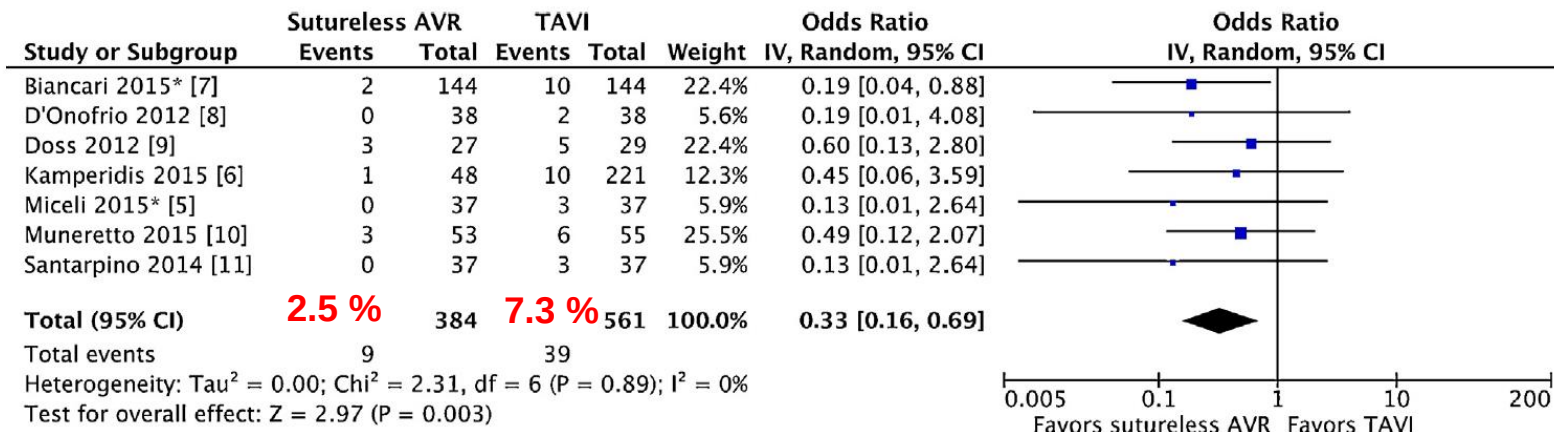
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Department of Cardiovascular Surgery, Shizuoka Medical Center, Shizuoka, Japan



EARLY MORTALITY



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EFFECTIVENESS: Outcomes

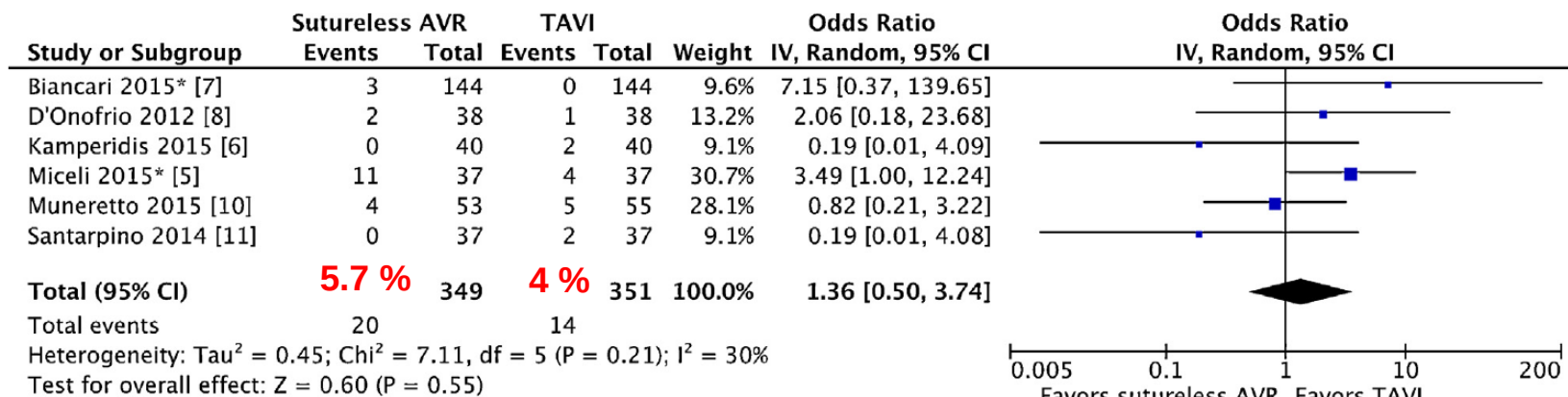
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Department of Cardiovascular Surgery, Shizuoka Medical Center, Shizuoka, Japan



BLEEDING



EFFECTIVENESS: Outcomes

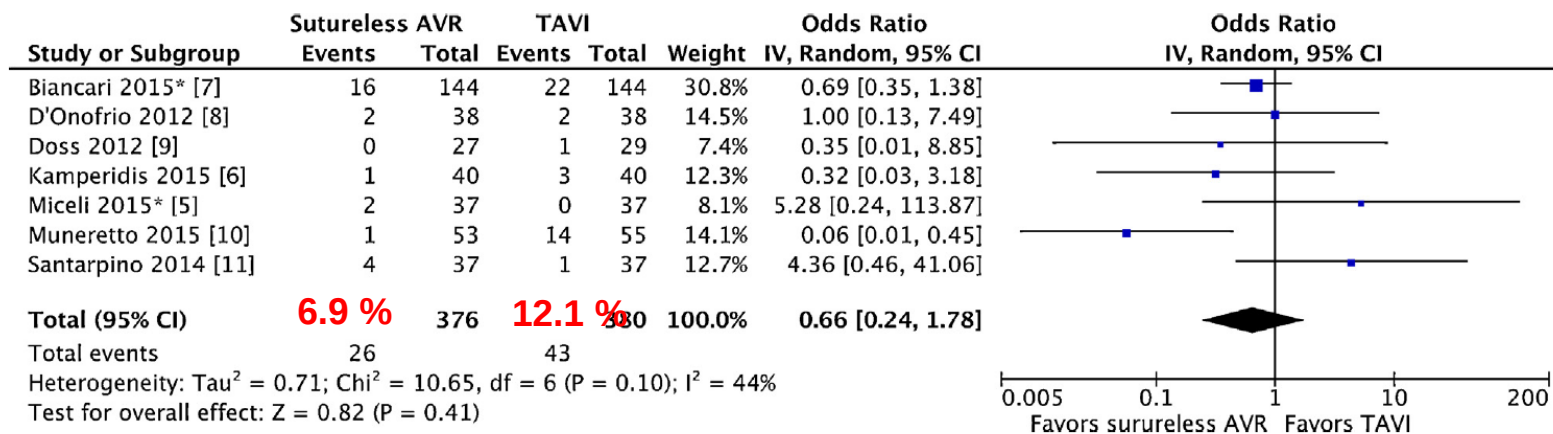
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Department of Cardiovascular Surgery, Shizuoka Medical Center, Shizuoka, Japan



POSTOPERATIVE CONDUCTION DISTURBANCE



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EFFECTIVENESS: Outcomes

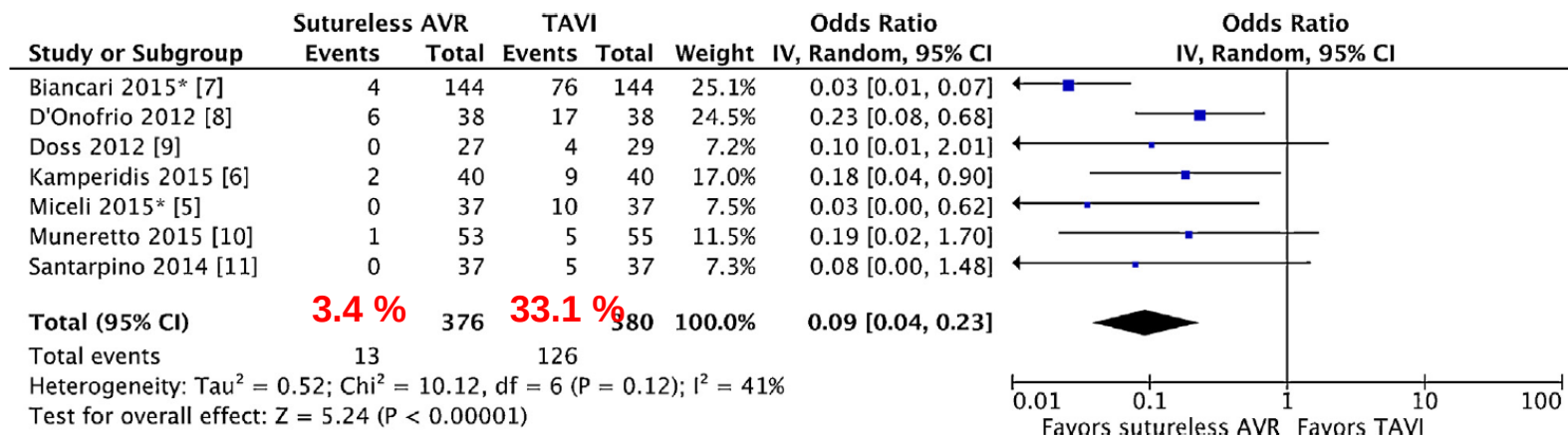
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Sutureless aortic valve replacement may improve early mortality compared with transcatheter aortic valve implantation: A meta-analysis of comparative studies



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Department of Cardiovascular Surgery, Shizuoka Medical Center, Shizuoka, Japan



MODERATE PARAVALVULAR LEAKAGE



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KEY POINTS

COST-EFFECTIVENESS analysis:

- is a form of economic analysis that compares the relative costs and outcomes (effects) of different courses of action.
- How to evaluate the COST- EFFECTIVENESS ?
 - TAVI
 - Sutureless



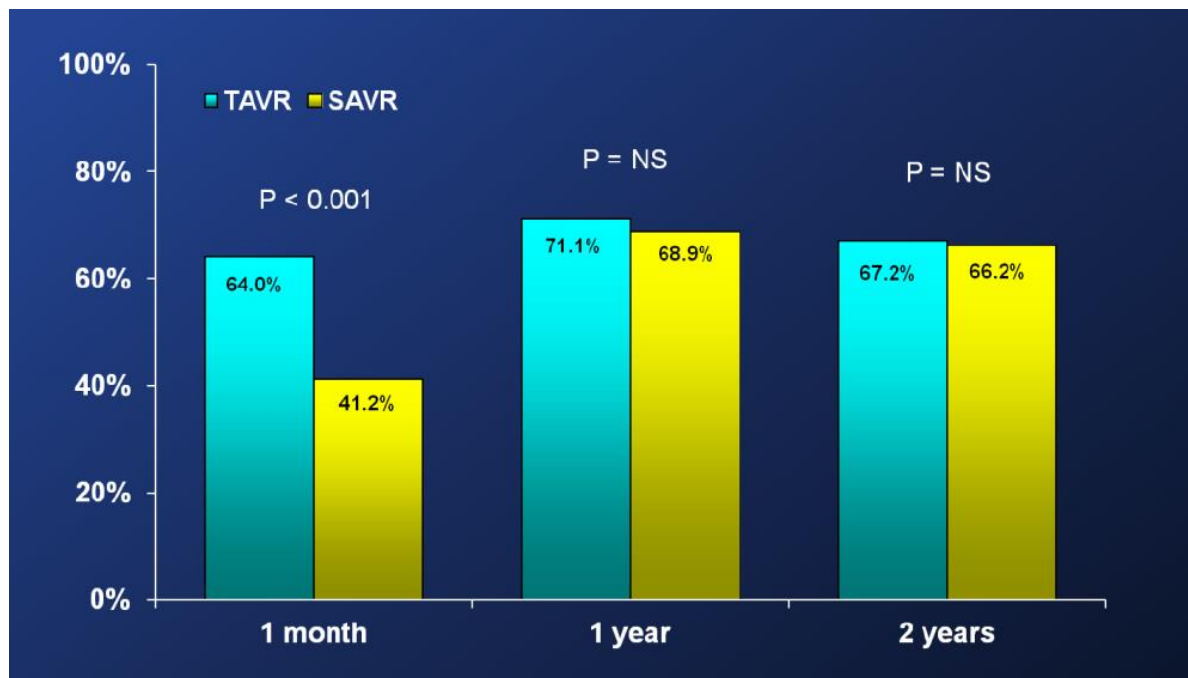
Intermediate / low risk Patients

1. Effectiveness

- Mortality and Adverse event rates
- **Quality of Life**



EFFECTIVENESS: Quality of life



Quality of Life
measured with KCCQ
(Kansas City Cardiomyopathy
Questionnaire)

No difference TAVI and SAVR at 1 and 2-year in Intermediate - risk patients

KEY POINTS

COST-EFFECTIVENESS analysis:

- is a form of economic analysis that compares the relative costs and outcomes (effects) of different courses of action.
- How to evaluate the COST- EFFECTIVENESS ?

- TAVI
- Sutureless



Intermediate / low risk Patients

1. Effectiveness

2. Cost

- Costs
- Quality Adjusted life Year (QALY), Life Year Gained (LYG)
- Incremental cost effectiveness ratio (ICER)



COSTS

Clinical Outcome and Cost Analysis of Sutureless Versus Transcatheter Aortic Valve Implantation With Propensity Score Matching Analysis

Giuseppe Santarpino, MD^{a,*}, Steffen Pfeiffer, MD^a, Jürgen Jössl, MD^b, Angelo Dell'Aquila, MD^c, Ferdinand Vogt, MD^a, Che von Wardenburg, MD^a, Johannes Schwab, MD^b, Joachim Sirch, MD^a, Matthias Pauschinger, MD^b, and Theodor Fischlein, MD^a

Patients in the sutureless group endure more hospital complications, but TAVI entails a higher follow-up mortality (*PVL occurred more frequently in patients from the TAVI group $p < 0.001$ with an impact on follow-up survival rate*)

Table 3
Mean costs (Euro) per patient at discharge for Sutureless and TAVI

Variable mean (SD)	Sutureless (n=102)	TAVI (n=102)	P value
OR costs including anaesthesia	* 5,076 ± 1,399	4,312 ± 1,362	0.004
Hospital stay costs including ICU	* 9,188 ± 9,590	5,714 ± 4,055	0.009
Diagnostics*	1,883 ± 1,887	* 4,137 ± 3,128	<0.001
Total costs - excluding the device	16,148 ± 11,704	14,164 ± 6,148	0.217
Mean cost of the device (<i>min; max</i>)	6,303 (3,600 - 7,214)	18,712 (17,050 - 22,015)	
Total costs - including the device	22,451 ± 11,704	32,877 ± 6,148	<0.001

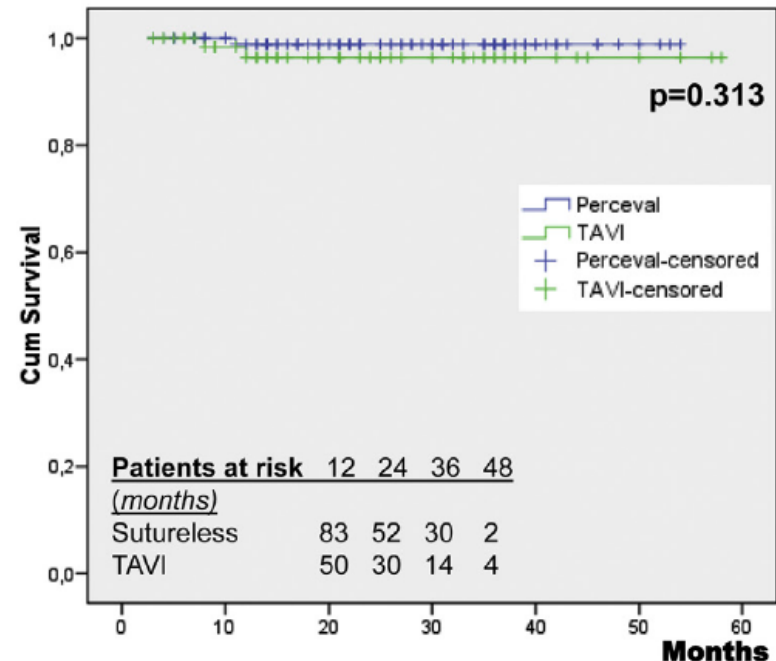
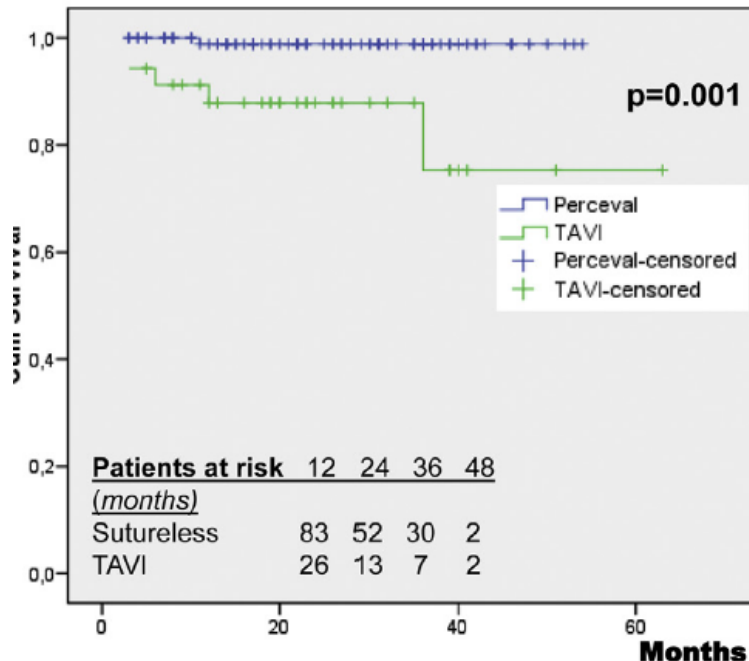
* Diagnostics includes radiology laboratory, cardiac diagnostic therapy, endoscopic diagnostics, and other diagnostics.

COSTS

Clinical Outcome and Cost Analysis of Sutureless Versus Transcatheter Aortic Valve Implantation With Propensity Score Matching Analysis

Giuseppe Santarpino, MD^{a,*}, Steffen Pfeiffer, MD^a, Jürgen Jössl, MD^b, Angelo Dell'Aquila, MD^c, Ferdinand Vogt, MD^a, Che von Wardenburg, MD^a, Johannes Schwab, MD^b, Joachim Sirch, MD^a, Matthias Pauschinger, MD^b, and Theodor Fischlein, MD^a

Sutureless vs TAVI with para-valvular insufficiency Sutureless vs TAVI without para-valvular insufficiency



A cost-utility analysis of transcatheter aortic valve implantation in Belgium: focusing on a well-defined and identifiable population

Mattias Neyt, Hans Van Brabandt, Stephan Devriese, Stefaan Van De Sande

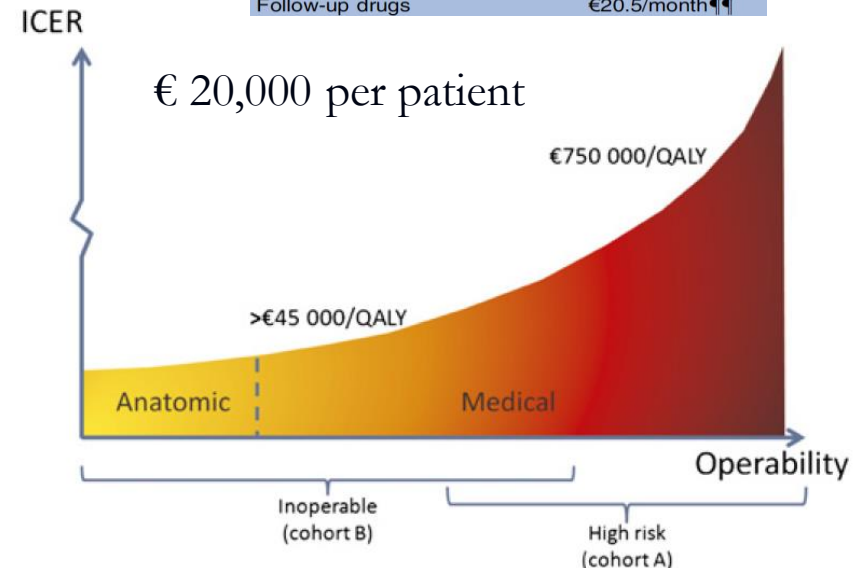
Similar Mortality

2 fold increased risk of Stroke

Conclusions: It is inappropriate to consider reimbursement of TAVI for high-risk operable patients. Reimbursing TAVI in inoperable patients in essence is a political decision. From an economic perspective, it would be prudent to first target patients that are inoperable because of anatomical prohibitive conditions. In the search for evidence, the authors identified non-published negative results from a randomised controlled TAVI trial. The study sponsor should be more willing to share this information to allow balanced evaluations and policy recommendations. Payers should require these data before taking reimbursement decisions.

Table 2 Overview of cost data

Variable	Mean
TAVI (high-risk operable patients)	
TF	€40 917
TA	€49 799
All	€43 571†
TAVI (inoperable patients)	€40 057‡
Standard therapy	€3170§
AVR	€23 749¶
Balloon aortic valvuloplasty	€489††
Repeat hospitalisation	€5983
Stroke	
Minor	€4679‡‡
Major	€12 493‡‡
TIA	€3946
Follow-up fees	€43.2/month§§
Follow-up drugs	€20.5/month¶¶



Systematic review of the cost-effectiveness of transcatheter aortic valve implantation

Praveen Indraratna, MBBS,^{a,b} Su C. Ang, MBBS,^{a,b} Hemal Gada, MD,^a Tristan D. Yan, MBBS, PhD,^{a,c} Con Manganas, MBBS,^b Paul Bannon, MBBS, PhD,^{a,c} and Christopher Cao, MBBS, BSc (Med)^{a,b}

ICER: Incremental cost effectiveness ratio → cost required to gain 1 additional **QALY**

TABLE 3. Projected raw costs of incremental cost-effectiveness ratio of transcatheter aortic valve implantation versus surgical aortic valve replacement

Investigator	QALYs gained by TAVI	Projected mean raw cost		Discounting rate (%)	ICER (local currency PQG)	ICER (\$US PQG)*	WTPT (\$US PQG)*	Probability of cost-effectiveness
		TAVI	AVR					
Neyt et al ⁴	0.03	EUR 43,571	EUR 23,749	3.0	EUR 750,000	975,697	47,141	NR
Doble et al ⁷	−0.102	CAD 85,755	CAD 74,602	5.0	Dominated by AVR	NA	48,672	0.116
Gada et al ⁸	0.06	USD 59,503	USD 56,339	5.0	USD 52,773	52,773	100,000	NR
	(reference case)							
Gada et al ⁸	0.01 (PARTNER scenario)	USD 85,513	USD 82,989	5.0	USD 252,400	252,400	100,000	NR
Gada et al ⁸	0.06 (combined)	USD 81,446	USD 79,526	5.0	USD 32,000	32,000	100,000	NR
Osnabrugge et al ⁹	0.068†	EUR 46,217	EUR 35,511	NA	EUR 157,441	204,819	NR	NR
Reynolds et al ¹⁰	0.027 (TF- and TA)	USD 100,504	USD 98,434	NA	USD 76,877	76,877	50,000	0.438

Conclusions: Depending on the ICER threshold selected, TAVI is potentially justified on both medical and economic grounds compared with medical therapy for patients deemed to be surgically inoperable. However, in the high-risk surgical patient cohort, the evidence is currently insufficient to economically justify the use of TAVI in preference to AVR. (J Thorac Cardiovasc Surg 2014;148:509-14)

reported; CAD, Canadian dollars; NA, not applicable; USD, US dollars; PARTNER, Placement of Aortic Transcatheter Valve trial; TF, transfemoral; TA, transapical. *Converted to USD using exchange rates from www.xe.com, September 19, 2012. †The study did not evaluate quality of life, and a value of 0.06 was used to calculate the ICER.

Cost-Effectiveness of Transcatheter Aortic Valve Replacement With a Self-Expanding Prosthesis Versus Surgical Aortic Valve Replacement



The economic impact of patient recovery

ICU and Hospital stay

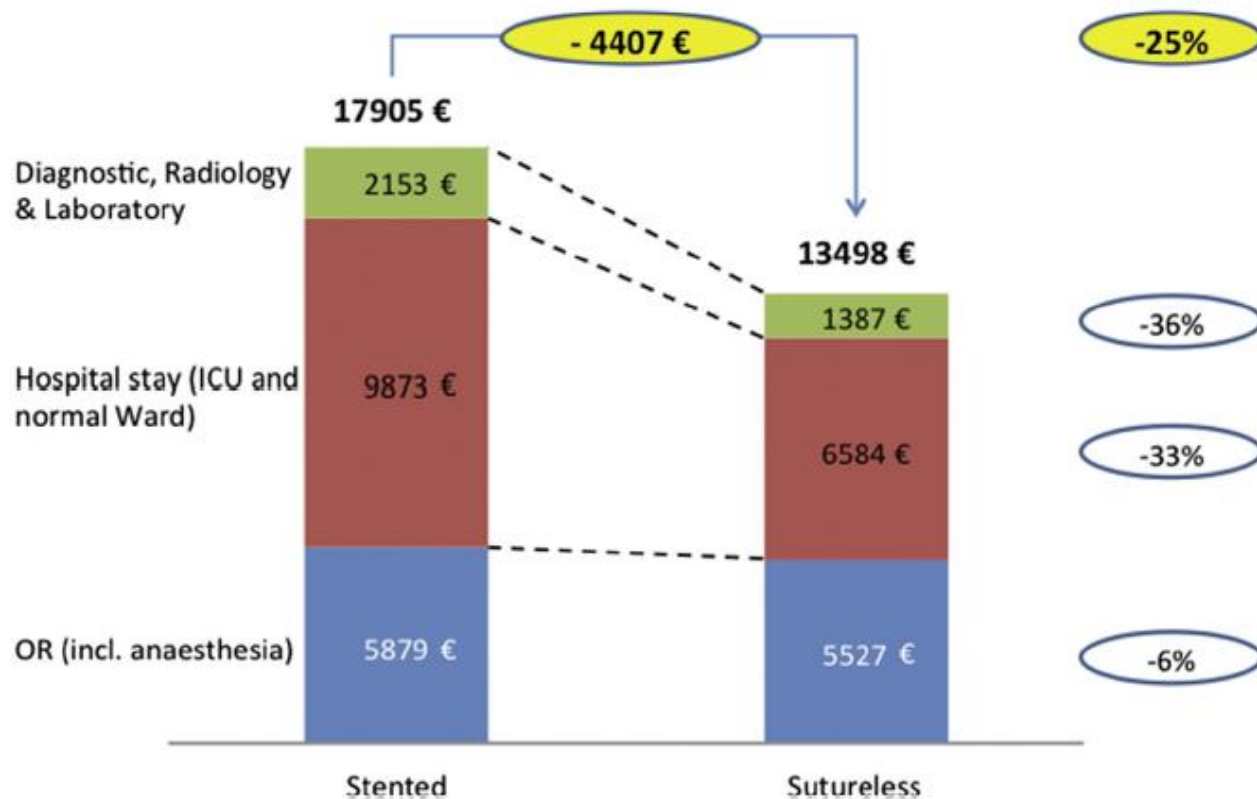
Matthew R. Reynolds, MD, MSc,*† Yang Lei, MSc,‡§ Kaijun Wang, PhD,‡ Khaja Chinnakondapalli, MS,‡ Katherine A. Vilain, MPH,‡ Elizabeth A. Magnuson, ScD,‡|| Benjamin Z. Galper, MD, MPH,¶ Christopher U. Meduri, MD, MPH,# Suzanne V. Arnold, MD, MHA,‡|| Suzanne J. Baron, MD, MSc,‡|| Michael J. Reardon, MD,** David H. Adams, MD,†† Jeffrey J. Popma, MD,†† David J. Cohen, MD, MSc,‡|| on behalf of the CoreValve U.S. High Risk Pivotal Trial Investigators

As expected, we found that procedural costs were substantially higher with TAVR than with SAVR, and that those costs were offset by savings from shortened hospital length of stay and a reduced need for post-discharge residential care. In this trial, those offsets were not sufficient for TAVR to achieve overall cost neutrality relative to SAVR, either in the short- or long-term. The conclusion that TAVR is nonetheless a reasonable value consequently hinges on the observed clinical benefits. These findings have important implications, as TAVR is evaluated in lower-risk AS patients. At current valve prices, length of stay would likely need to be at least 5 to 6 days shorter with TAVR than with SAVR in order to approach cost neutrality.

Better Short-Term Outcome by Using Sutureless Valves: A Propensity-Matched Score Analysis

Francesco Pollari, MD,* Giuseppe Santarpino, MD,* Angelo Maria Dell'Aquila, MD, Laszlo Gazdag, MD, Husam Alnahas, MD, Ferdinand Vogt, MD, Steffen Pfeiffer, MD, and Theodor Fischlein, MD

Department of Cardiac Surgery, Klinikum Nürnberg, Paracelsus Medizinischen Privatuniversität, Nuremberg; and Department of Cardiac Surgery, Universitätsklinikum Münster, Münster, Germany



MINIMALLY INVASIVE AVR

Minimal Access Aortic Valve Replacement: Is It Worth It?

Bari Murtuza, PhD, FRCS, John R. Pepper, FRCS, Rex DeL Stanbridge, FRCS, Catherine Jones, BSc, MBBS, Christopher Rao, MBBS, Ara Darzi, KBE, FRCS, and Thanos Athanasiou, PhD, FETCS

Departments of Cardiothoracic Surgery and Surgical Oncology and Technology, St. Mary's Hospital, Faculty of Medicine, Imperial College, and Department of Cardiothoracic Surgery, Royal Brompton Hospital, Faculty of Medicine, Imperial College, London, England

Controversy surrounds the use of minimal access aortic valve replacement (AVR). This meta-analytical study quantified the effects of minimal access AVR on morbidity and mortality compared with conventional AVR and evaluated study heterogeneity and robustness of the findings using sensitivity analysis. Overall, meta-analysis suggested marginal benefits in perioperative mortality (4,667 patients; odds ratio, 0.72; 95% confidence interval, 0.51-1.00; $p = 0.05$), intensive care unit stay, total hospital stay, and ventilation time in the minimal access

AVR group, although cross-clamp, cardiopulmonary bypass, and total operation times were longer. Study heterogeneity and apparent benefits in perioperative mortality were related to study quality, although results for intensive care unit and hospital stay were maintained according to the sensitivity analysis. This suggests that minimal access AVR can be offered on the basis of patient choice and cosmesis rather than evident clinical benefit.

(Ann Thorac Surg 2008;85:1121-31)

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HOW TO INCREASE COST EFFECTIVENES



EFFECTIVENESS

- Better clinical outcomes
- Less Pain
- Faster recovery

MIAVR AND SUTURELESS



COST

- Reduce Hospital stay
- Reduce complications



Minimally invasive aortic valve replacement with Perceval S sutureless valve: Early outcomes and one-year survival from two European centers

Antonio Miceli, MD, PhD,^{a,b} Giuseppe Santarpino, MD,^c Steffen Pfeiffer, MD,^c Michele Murzi, MD,^a Daniyar Gilmanov, MD,^a Giovanni Concistré, MD,^c Eugenio Ouaini, MD,^a Marco Solinas, MD,^a



CPB - 40%
Xclamp - 38 %



- 35%
- 43%

Cite this article as: Miceli A, Gilmanov D, Murzi M, Marchi F, Ferrarini M, Cerillo AG *et al.* Minimally invasive aortic valve replacement with a sutureless valve through a right anterior mini-thoracotomy versus transcatheter aortic valve implantation in high-risk patients. *Eur J Cardiothorac Surg* 2015; doi:10.1093/ejcts/ezv210.

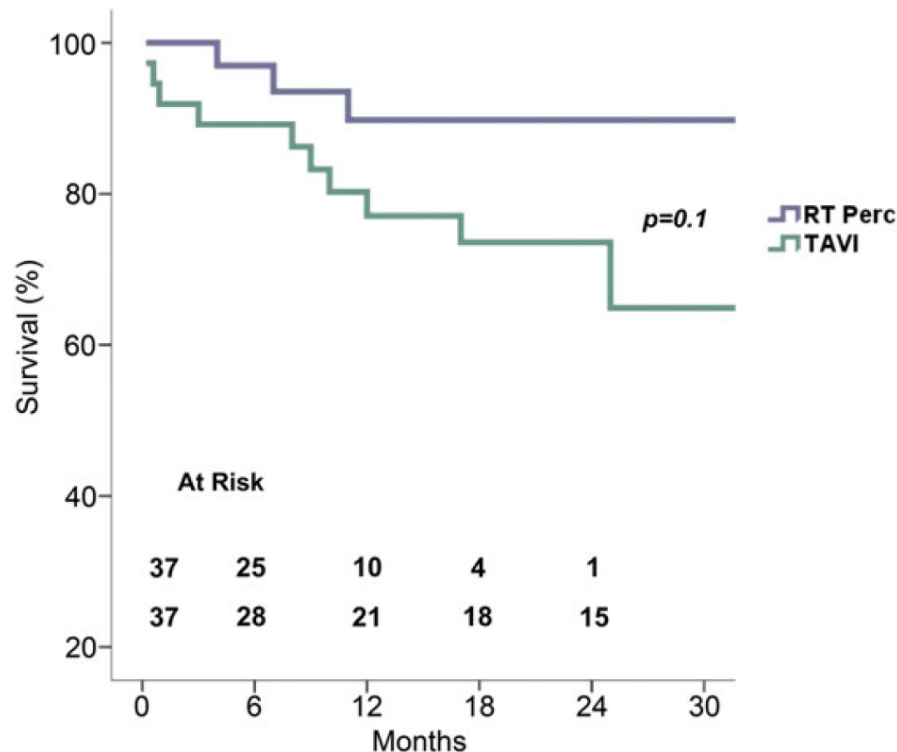
Minimally invasive aortic valve replacement with a sutureless valve through a right anterior mini-thoracotomy versus transcatheter aortic

Table 3: Outcomes

Variables

Mortality [patients, *n*]
Stroke [patients, *n* (%)]
Conversion to sternotomy [patients, *n* (%)]
Major bleeding [patients, *n* (%)]
Acute kidney injury [patients, *n* (%)]
Intensive care unit stay (day, range)
Ward stay (median day, range)

TAVI: transcatheter aortic valve implantation; mini-thoracotomy.



ts, rate of pacemaker
ackage in the matched

	TAVI (<i>n</i> = 37)	<i>P</i>
9	19.7 ± 5.4	0.26
7	10.1 ± 3.4	0.17
0		0.5
30 (81.1)		<0.001
6 (12.2)		
14 (37.8)		
10 (27)		
0		

I: transcatheter aortic valve
omy; SD: standard deviation.

EDITORIAL: ACQUIRED: AORTIC VALVE

Minimally invasive aortic valve replacement with sutureless valve is the appropriate treatment option for high-risk patients and the “real alternative” to transcatheter aortic valve implantation

Mattia Glauber, MD, and Antonio Miceli, MD, PhD

From the Centro Cardiotoracico, Istituto Clinico Sant’Ambrogio, Gruppo Ospedaliero San Donato, Milan, Italy.
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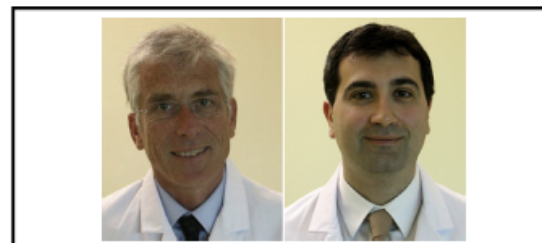
Address for reprints: Antonio Miceli, MD, PhD, Centro Cardiotoracico Istituto, Clinico Sant’Ambrogio, Gruppo Ospedaliero San Donato, Via Faravelli 16 20149, Milan, Italy (E-mail: antoniomiceli79@alice.it).

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Mattia Glauber, MD, and Antonio Miceli, MD, PhD

Central Message

Minimally invasive aortic valve replacement with a sutureless valve is the first-line treatment option for operable high-risk patients.



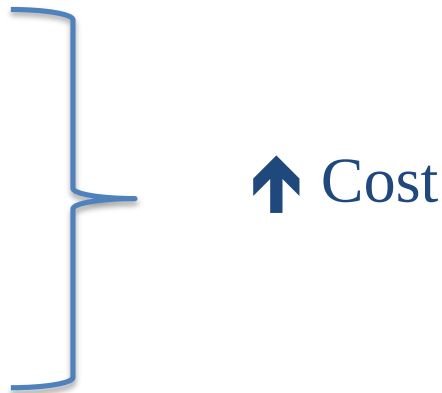
Heart Team for a Tailored approach



UNIVERSITY & RESEARCH
HOSPITALS

CONCLUSIONS

- TAVI is a cost effectiveness procedure in inoperable patients
- There is no evidence that TAVI is a cost effectiveness procedure compared to conventional AVR in high risk operable patients (trend of benefit in Trans femoral approach)
- No data is reported in medium-low risk patients on cost effectiveness
- Major issues:
 - Stroke
 - Paravalvular leakage
 - Pacemaker implantation
 - Durability
 - Thrombosis



CONCLUSIONS

- Sutureless Valves have shown excellent clinical results
- Sutureless valves in combination with minimally invasive approach might be the real cost effectiveness procedure in medium –low risk patients
- Randomized trials are required!

THANK YOU

