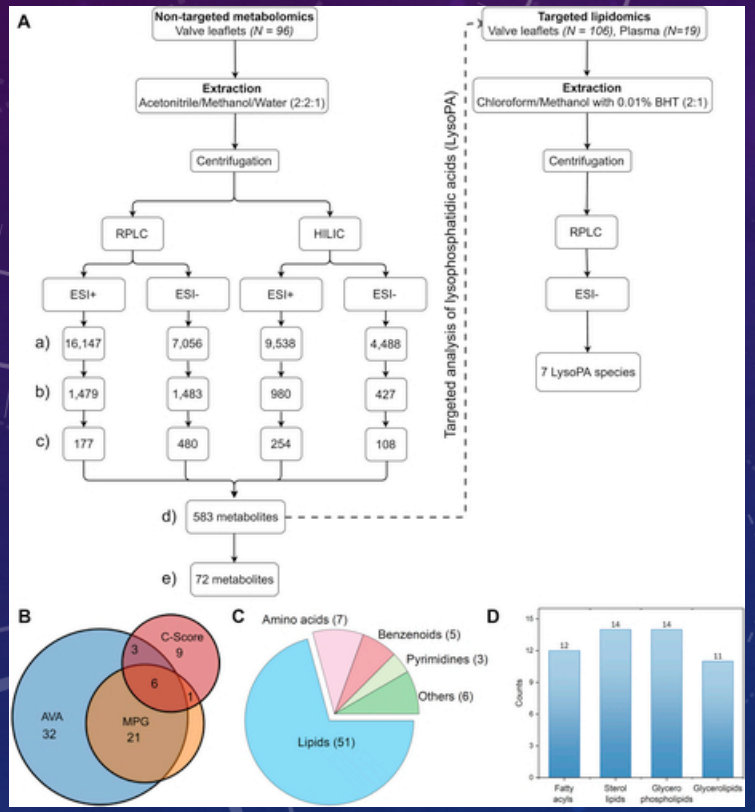
CLOSING THE GAP
DIAGNOSIS AND MANAGEMENT OF AORTIC STENOSIS IN WOMEN: THE ROLE OF TAVR IN IMPROVING OUTCOMES



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CONFLUENCE HEALTH WASHINGTON

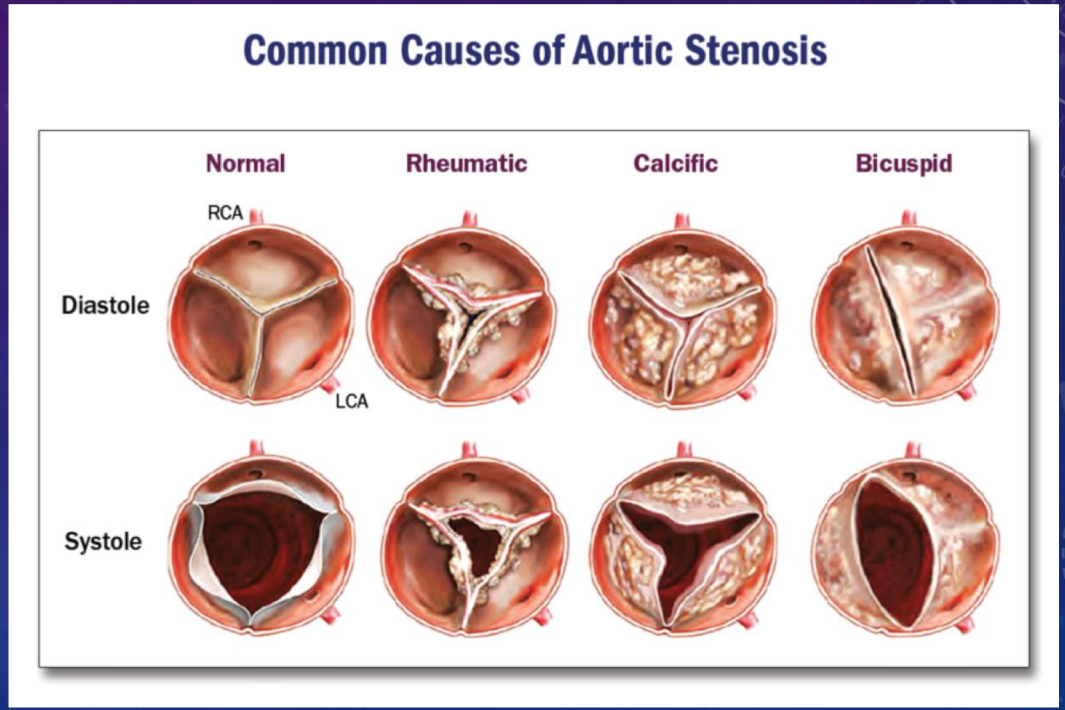
Arun Surendran et al. *J Am Coll Cardiol Basic Trans Science* 2020; 5:1163-1177.

DISCLOSURES

I have a consulting relationship with Medtronic.

AORTIC STENOSIS

- Most common type of adult valve disease
- Progressive
- 12.4% of the elderly are affected by some degree
- Most common is calcification of bicuspid or tricuspid valve



Otto CM Textbook of Clinical Echocardiography[4]

Saad M et al J Am Coll Cardiol Intv 2018;11:24-35.

BURDEN OF DISEASE: CUMULATIVE FREQUENCY OF PROBABLY OR DEFINITE SEVERE AS OVERALL BY SEX AND RACE

		Sex		Race	
Prevalent or incident cases	**Overall**	**Men**	**Women**	**Non-Black**	**Black**
Clinically significant AS					
Cases/sample	213/5778	98/2438	115/3340	198/4949	15/829
Cumulative frequency, %	3.69	4.02	3.44	4.00	1.81
95% CI	(3.23 to 4.21)	(3.31 to 4.88)	(2.88 to 4.12)	(3.49 to 4.59)	(1.10 to 2.99)
AS procedure					
Cases/sample	94/5778	49/2438	45/3340	89/4949	5/829
Cumulative frequency, %	1.63	2.01	1.35	1.80	0.60
95% CI	(1.33 to 1.99)	(1.52 to 2.65)	(1.01 to 1.80)	(1.46 to 2.21)	(0.25 to 1.45)
Moderate or severe AS					
Cases/sample	348/5778	159/2438	189/3340	319/4949	29/829
Cumulative frequency, %	6.02	6.52	5.66	6.45	3.50
95% CI	(5.44 to 6.67)	(5.61 to 7.58)	(4.93 to 6.50)	(5.80 to 7.17)	(2.45 to 5.00)
Death					
Cases/sample	5084/5778	2247/2438	2837/3340	4391/4949	693/829
Cumulative frequency, %	87.99	92.17	84.94	88.73	83.60
95% CI	(87.16 to 88.83)	(91.11 to 93.24)	(83.74 to 86.16)	(87.85 to 89.61)	(81.11 to 86.16)

*Over the entire 25-year follow-up period.
AS, aortic stenosis.

Owens DS, *et al*. *Heart* 2021;**107**:1493–1502. doi:10.1136/heartjnl-2021-319025

DIAGNOSIS

- Echo

	Aortic Sclerosis	Mild	Moderate	Severe	Very Severe
Peak AV velocity (m/s)	<2.0 m/s	2.0-2.9	3.0-3.9	≥4.0	≥5.0
Mean Gradient (mm Hg)	—	<20	20-39	≥40	≥60
AVA (cm^2)	—	>1.5	>1.0-1.5	≤1.0	≤0.60
Indexed AVA (cm^2/m^2)	—	>0.85	>0.60-0.85	≤0.60	
Velocity Ratio	—	>0.50	>0.25-0.50	≤0.25	

- Increasing data that for women we should lower the threshold to 32 from 40

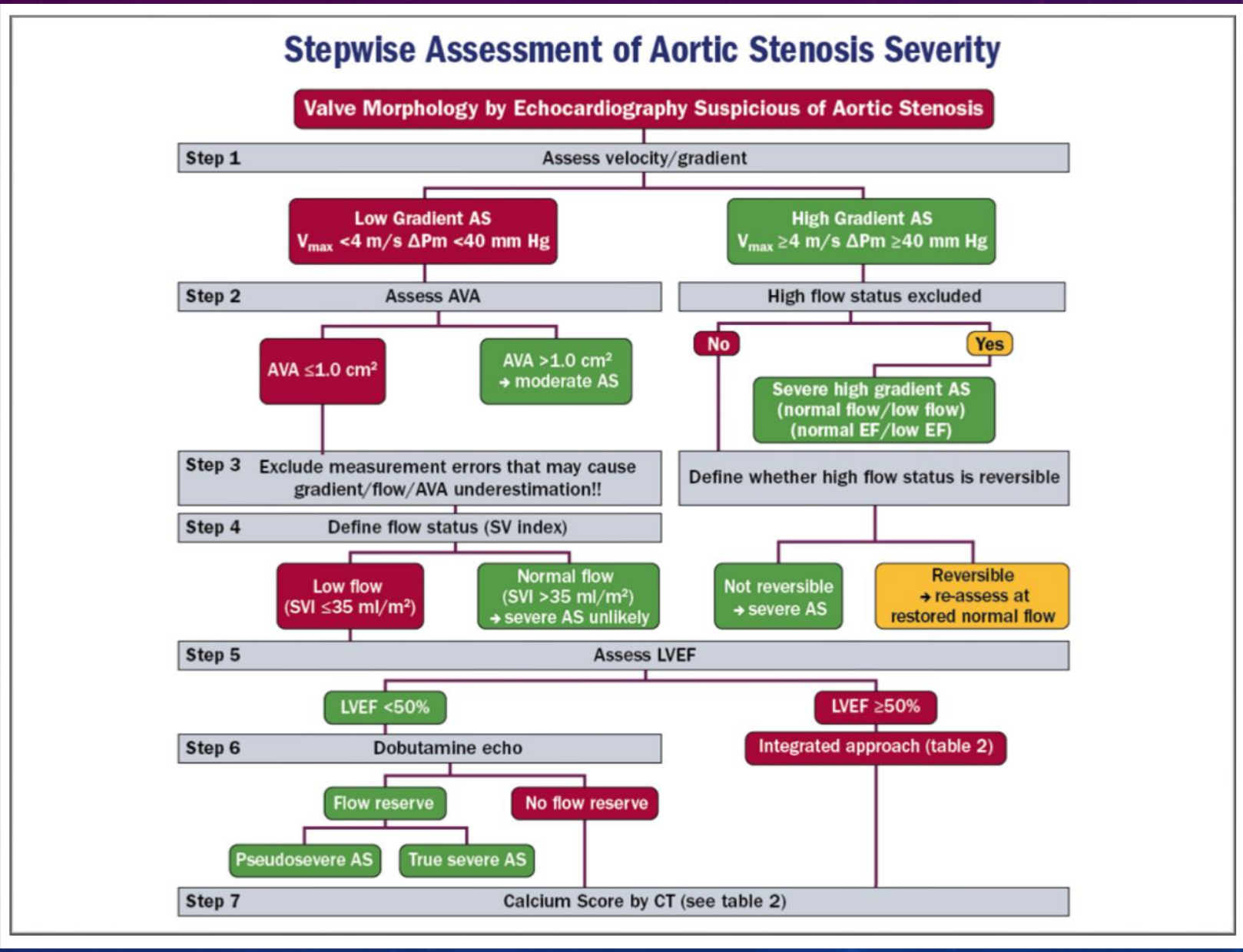
- CT
  - Calcium >1200 in women and >2000 in men

- Physical Exam
  - Murmur gets louder
  - Murmur peaks later in systole
  - A2 diminishes or is absent
  - Carotid pulse parvus and tardus
  - Symptoms present- most common is decrease in exercise capacity or exertional dyspnea
- Exercise testing
  - For seemingly asymptomatic patients
  - Any symptoms should be considered symptomatic
    - Dyspnea, dizziness, limited functional capacity, abnormal blood pressure response
- Invasive Testing
  - Direct transaortic gradients
  - Aortic valve area by Gorlin

Stages of Aortic Stenosis

Stage	Definition	Valve Anatomy	Hemodynamics	Symptoms
A	At Risk for AS	Bicuspid Aortic Valve Aortic Sclerosis	Aortic V_{max} <2.0 m/sec	None
B	Progressive AS	Mild-moderate leaflet calcification with reduced systolic motion Rheumatic valve changes with commissural fusion	Mild AS - Aortic V_{max} 2.0 - 2.9 m/sec or mean ΔP <20 mm Hg Moderate AS - Aortic V_{max} 3.0 - 3.9 m/sec or mean ΔP 20 - 39 mm Hg	None
C Asymptomatic Severe AS				
C1	Asymptomatic Severe AS	Severe leaflet calcification with reduced opening	Aortic V_{max} ≥4.0 m/sec or mean ΔP ≥40 mm Hg AVA typically ≤1.0 cm^2, LVEF normal	None
C2	Asymptomatic Severe AS with reduced EF	Severe leaflet calcification with reduced opening	Aortic V_{max} ≥4.0 m/sec or mean ΔP ≥40 mm Hg AVA typically ≤1.0 cm^2, LVEF <50%	None
D Symptomatic Severe AS				
D1	Symptomatic severe high gradient AS	Severe leaflet calcification with reduced opening	Aortic V_{max} ≥4.0 m/sec or mean ΔP ≥40 mm Hg AVA typically ≤1.0 cm^2, LVEF normal	Decreased exercise tolerance Dyspnea on exertion Heart failure Angina Exertional presyncope Syncope
D2	Symptomatic severe low-flow, low-gradient AS with reduced LVEF	Severe leaflet calcification with reduced opening	Aortic V_{max} <4.0 m/sec or mean ΔP <40 mm Hg AVA ≤1.0 cm^2, LVEF <50%, DSE = Aortic V_{max} >4.0 m/sec, AVA <1.0 cm^2 at any flow rate	
D3	Symptomatic severe low-flow, low-gradient AS with normal LVEF	Severe leaflet calcification with reduced opening	Aortic V_{max} <4.0 m/sec or mean ΔP <40 mm Hg AVA ≤1.0 cm^2, Indexed AVA <0.6 cm^2/m^2, Stroke volume index <35 ml/m^2, LVEF ≥50%	

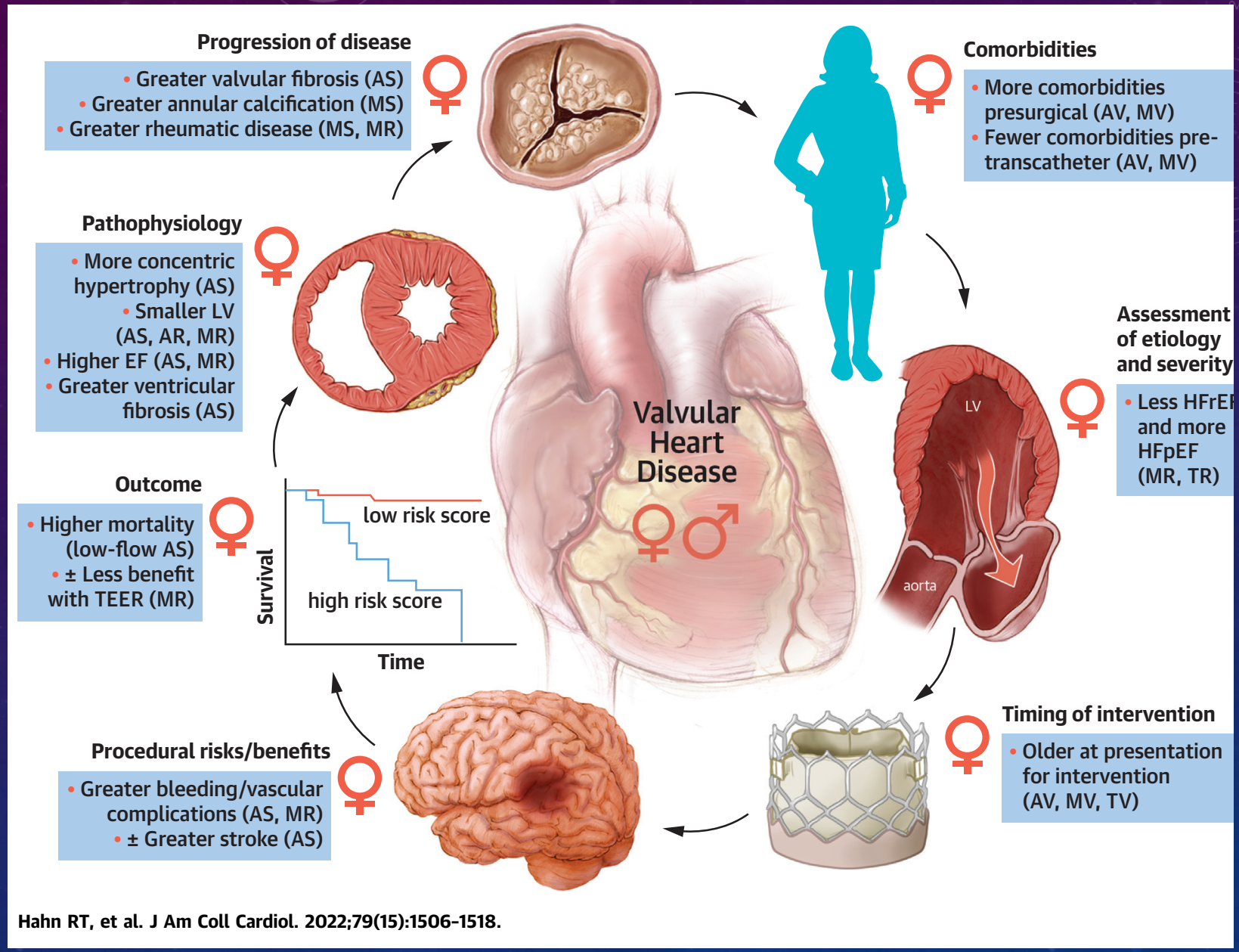
ACCSAP


Stepwise Assessment of Aortic Stenosis Severity
Valve Morphology by Echocardiography Suspicious of Aortic Stenosis
Step 1
Assess velocity/gradient
Low Gradient AS
Vmax <4 m/s ΔPm <40 mm Hg
High Gradient AS
Vmax ≥4 m/s ΔPm ≥40 mm Hg
Step 2
Assess AVA
High flow status excluded
AVA ≤1.0 cm²
AVA >1.0 cm²
→ moderate AS
No
Yes
Severe high gradient AS
(normal flow/low flow)
(normal EF/low EF)
Step 3
Exclude measurement errors that may cause gradient/flow/AVA underestimation!!
Define whether high flow status is reversible
Step 4
Define flow status (SV index)
Low flow
(SVI ≤35 ml/m²)
Normal flow
(SVI >35 ml/m²)
→ severe AS unlikely
Not reversible
→ severe AS
Reversible
→ re-assess at restored normal flow
Step 5
Assess LVEF
LVEF <50%
LVEF ≥50%
Step 6
Dobutamine echo
Integrated approach (table 2)
Flow reserve
No flow reserve
Pseudosevere AS
True severe AS
Step 7
Calcium Score by CT (see table 2)

ACCSAP

PROGNOSIS WITHOUT TREATMENT

- 30-50% mortality at 2 years
- Progression –Average in Moderate
  - 0.3m/s increase in velocity per year
  - 7mmHg increase in mean pressure gradient per year
  - 0.1cm2 decrease in valve area per year
- Elderly and more severe calcification progress faster
- With aortic sclerosis progression to severe happens in 10% within 5 years.
- Medical therapy: statin in calcific disease, ACE/ARB

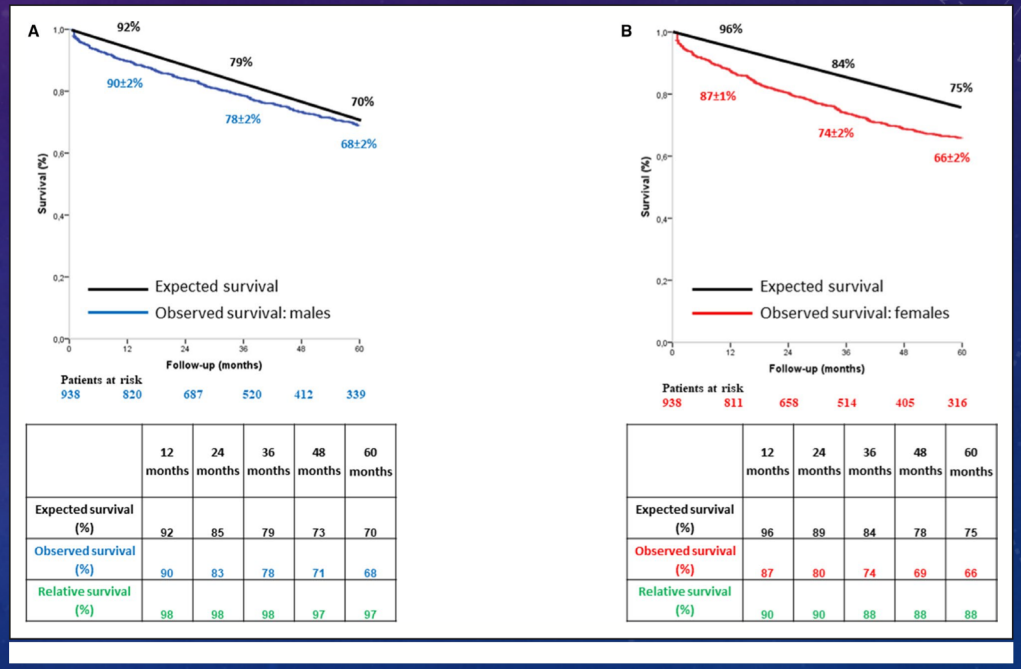


Hahn RT, et al. J Am Coll Cardiol. 2022;79(15):1506-1518.

EXCESS MORTALITY OF WOMEN WITH AORTIC STENOSIS

- Cohort of 2429 patients with AS
- 95% follow up complete
- Median follow up was 42 months

Five-year estimated survival of men (A) and women (B) of the age-matched cohort compared with that of the age- and sex-matched general population.



	12 months	24 months	36 months	48 months	60 months
Expected survival (%)	92	85	79	73	70
Observed survival (%)	90	83	78	71	68
Relative survival (%)	98	98	98	97	97

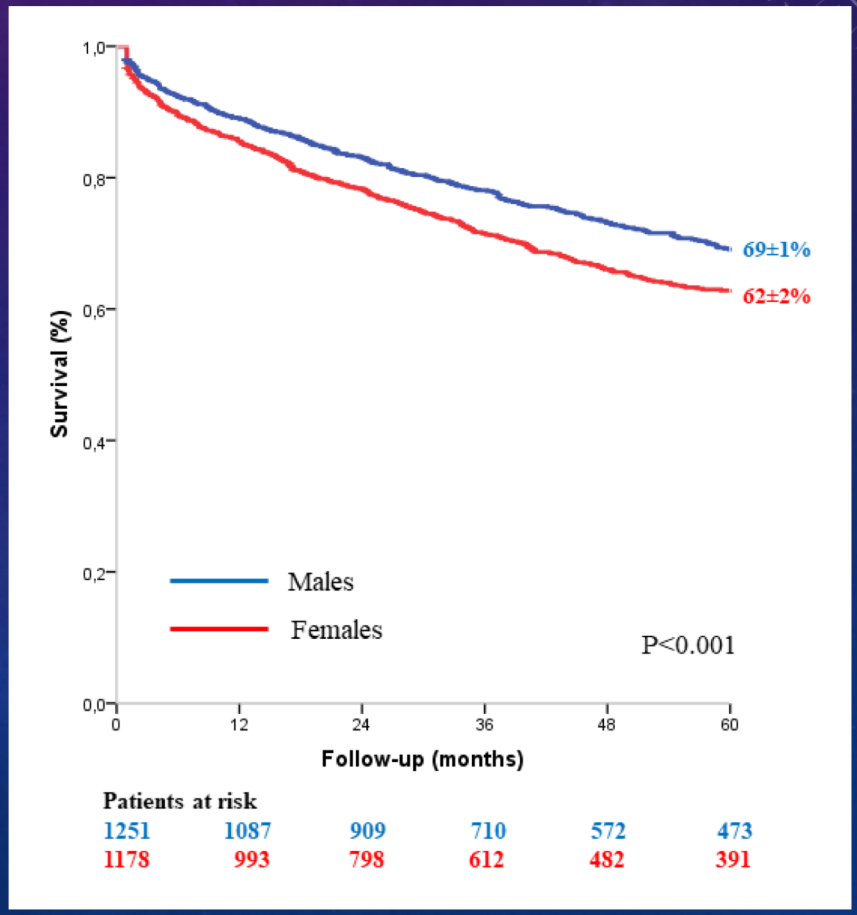
	12 months	24 months	36 months	48 months	60 months
Expected survival (%)	96	89	84	78	75
Observed survival (%)	87	80	74	69	66
Relative survival (%)	90	90	88	88	88

Tribouilloy C et al. J Am Heart Assoc 2021:10:e018816

SURVIVAL REGARDLESS OF AS THERAPY

- 49.5% Female who were older (p<0.001),had less comorbidities (p=0.030), and more often symptomatic (p=0.007)
- Men more frequently had higher Charlson comorbidity index (p=0.30)
- Higher proportion of women than of men were in New York Heart Association classes III and IV (*P*=0.005)
- Stratified by gradient, differences in 5-year survival between men and women persisted, 58±3% for low-gradient AS (mean pressure gradient<40 mm Hg) and 75±2% for high-gradient (men pressure gradient ≥40 mm Hg) AS in men versus 50±3% for low-gradient AS and 71±2% for high-gradient AS in women (*P*<0.001).

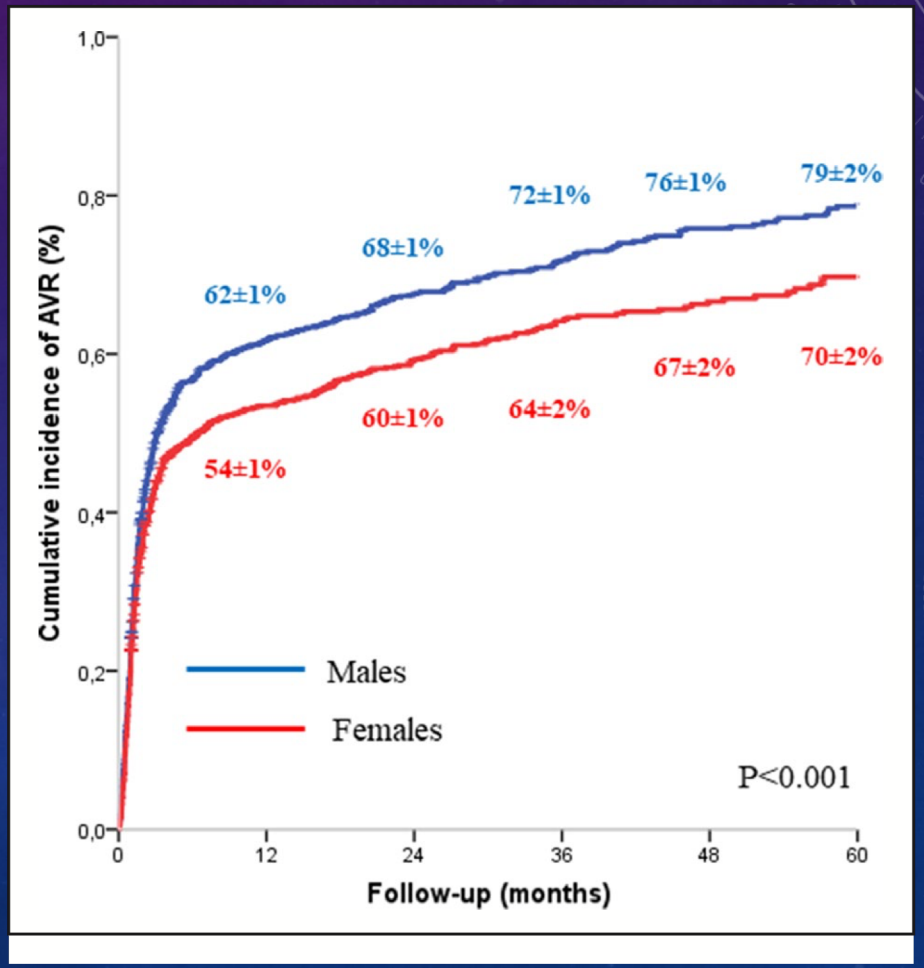
Kaplan-Meier survival curves in patients with aortic stenosis, by sex.



Tribouilloy C et al. J Am Heart Assoc 2021:10:e018816

UNDERTREATMENT OF WOMEN WITH AS

- The 5-year cumulative incidence of AVR was 79±2%, for men and 70±2% for women (*P*<0.001)
- After age matching, despite more frequent symptoms, AVR (*P*=0.018) was still less performed in women than in men with a longer time between inclusion and AVR for women (*P*=0.005).
- On multivariate logistic regression analysis, being male remained an independent predictor of early AVR in this age-matched population (adjusted OR, 1.37; 1.11–1.69; *P*=0.003).

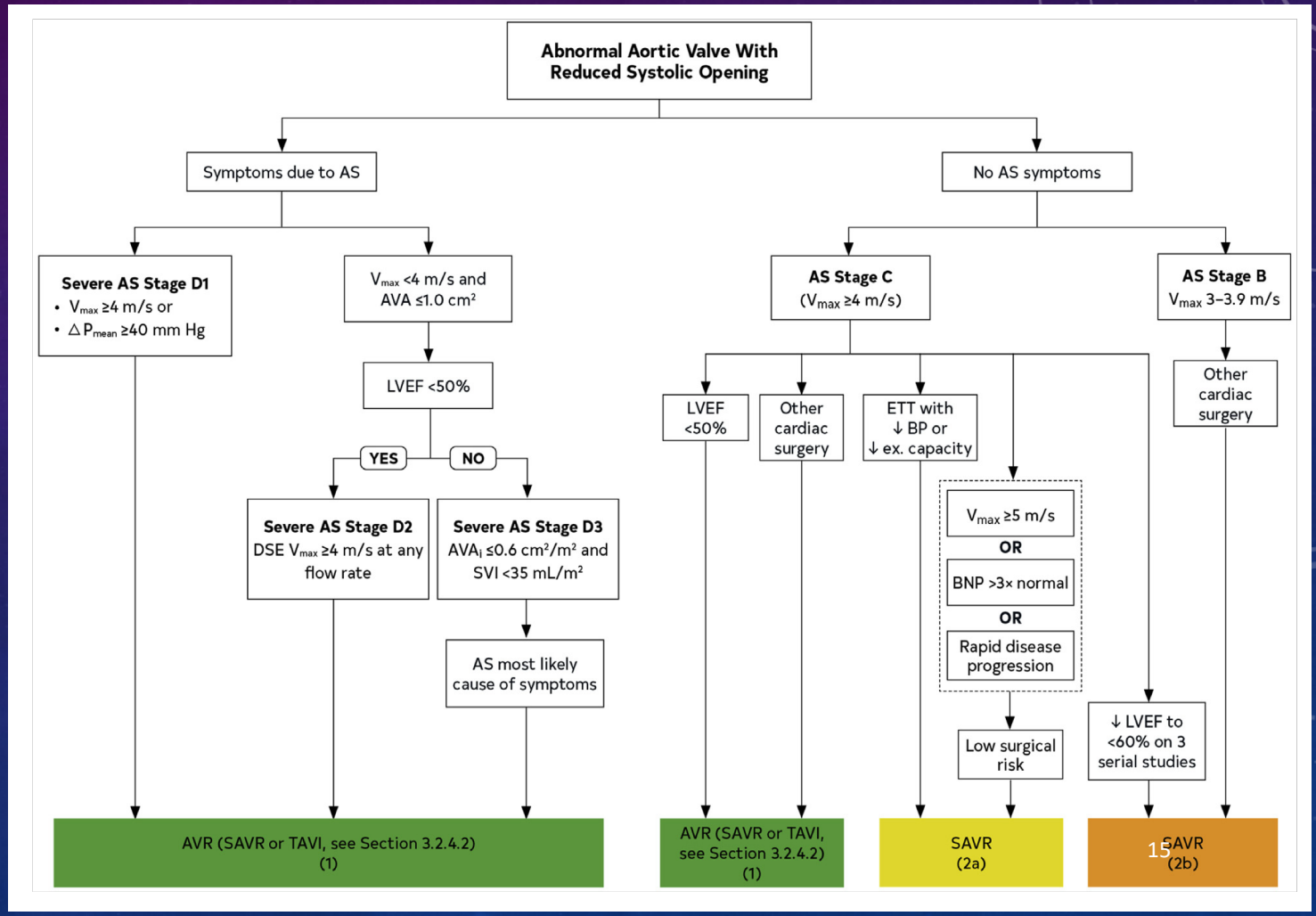


Tribouilloy C et al. J Am Heart Assoc 2021:10:e018816

MAJOR PROBLEM

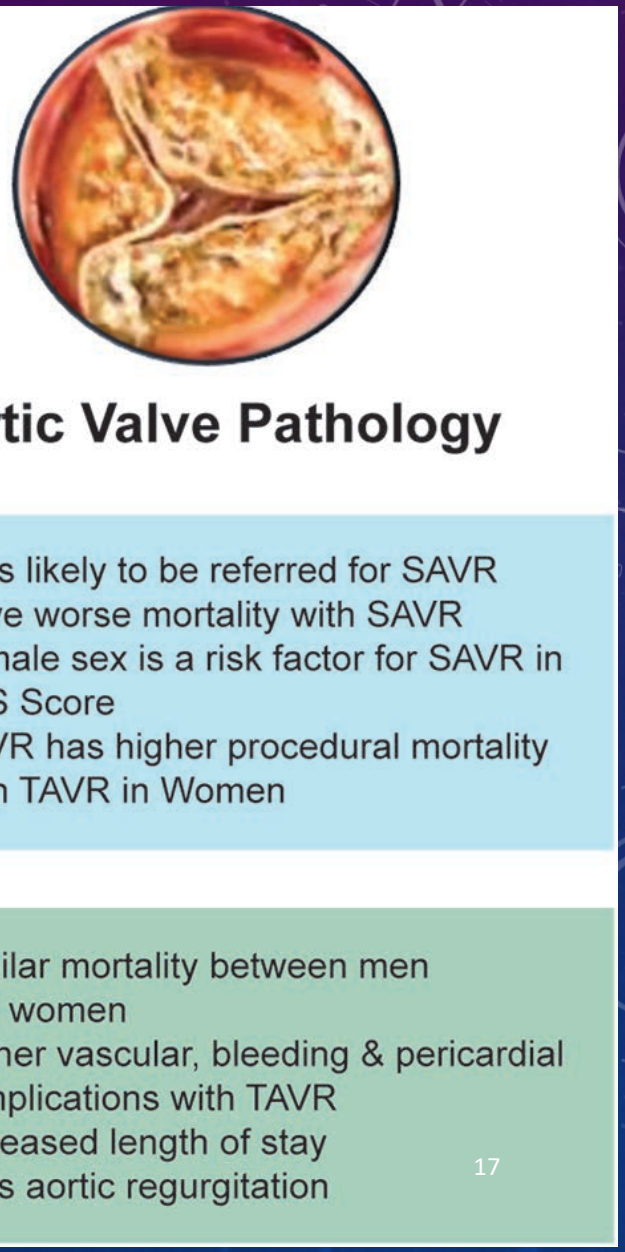
- In women and men undergoing early AVR survival is not significantly different.
- These differences in management and outcome affecting women with severe AS should raise the attention of clinicians to eliminate potential biases and consider similarly, irrespective of sex, providing the powerful benefits of AVR for severe AS.

2020 GUIDELINES FOR TREATMENT



TREATMENT OF VALVE DISEASE

- Sex differences in the pathophysiology is present
- Women have less valve calcification
- Women more likely to be symptomatic at same severity of stenosis
- Bicuspid aortic valve more common in men by 3:1.



REFERRAL TO HEART TEAM BEST APPROACH

- Structural Interventionalist Consult
- Surgical Consult
- Heart Team Meeting
- Shared Decision Making Process
- STS Score
- ACC TAVR Score

- The 15-year risk of reoperation due to valve deterioration is 22% in patients 50 years of age. In contrast, in patients >65 years of age at the time of bioprosthetic valve surgery, the likelihood of primary valve deterioration at 10-15 years is only 10%.

SURGICAL AORTIC VALVE REPLACEMENT VS TRANSCATHETER AORTIC VALVE REPLACEMENT

- PARTNER 1A high surgical risk TAVR = SAVR
- PARTNER 1B inoperable TAVI > medical therapy
- PARTNER 2 Intermediate risk TAVR = SAVR
- PARTNER 3 low risk TAVR > SAVR

- COREVALVE PIVOTAL high surgical risk TAVR > SAVR
- SURTAVI intermediate risk TAVR = SAVR
- COREVALVE LOW RISK TAVR=SAVR

RISKS NOT ON RISK SCORES

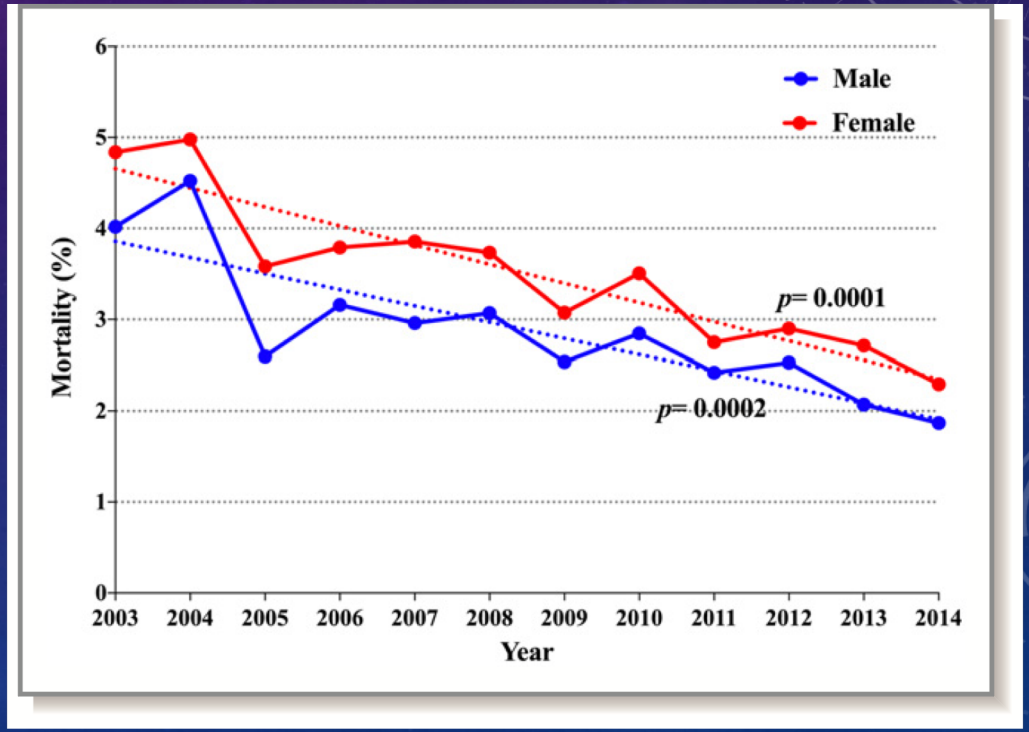
SAVR	TAVI
Technical or anatomic	
■ Prior mediastinal radiation ■ Ascending aortic calcification (porcelain aorta may be prohibitive)	■ Aorto-iliac occlusive disease precluding transfemoral approach ■ Aortic arch atherosclerosis (protuberant lesions) ■ Severe MR or TR ■ Low-lying coronary arteries ■ Basal septal hypertrophy ■ Valve morphology (eg, bicuspid or unicuspid valve) ■ Extensive LV outflow tract calcification
Comorbidities	
■ Severe COPD or home oxygen therapy ■ Pulmonary hypertension ■ Severe RV dysfunction ■ Hepatic dysfunction ■ Frailty*	■ Severe COPD or home oxygen therapy ■ Pulmonary hypertension ■ Severe RV dysfunction ■ Hepatic dysfunction ■ Frailty*
Futility	
■ STS score >15 ■ Life expectancy <1 y ■ Poor candidate for rehabilitation	■ STS score >15 ■ Life expectancy <1 y ■ Poor candidate for rehabilitation

WHAT IS HIGH SURGICAL RISK?

Criteria	Low-Risk SAVR (Must Meet ALL Criteria in This Column)	High Surgical Risk (Any 1 Criterion in This Column)	Prohibitive Surgical Risk (Any 1 Criterion in This Column)
STS-predicted risk of death*	<3% AND	>8% OR	Predicted risk of death or major morbidity (all-cause) >50% at 1 y OR
Frailty†	None AND	≥2 Indices (moderate to severe) OR	≥2 Indices (moderate to severe) OR
Cardiac or other major organ system compromise not to be improved postoperatively‡	None AND	1 to 2 Organ systems OR	≥3 Organ systems OR
Procedure-specific impediment§	None	Possible procedure-specific impediment	Severe procedure-specific impediment

SEX DIFFERENCES IN UTILIZATION AND OUTCOME WITH SAVR

- 166,809 patients
- 63% male 37% female
- Women are older
- Women had higher IH mortality which wsa consistent over time
- Women had more vascular complications and blood transfusions
- Women more likely to be discharged to a skilled nursing facility, nursing home or intermediate care center



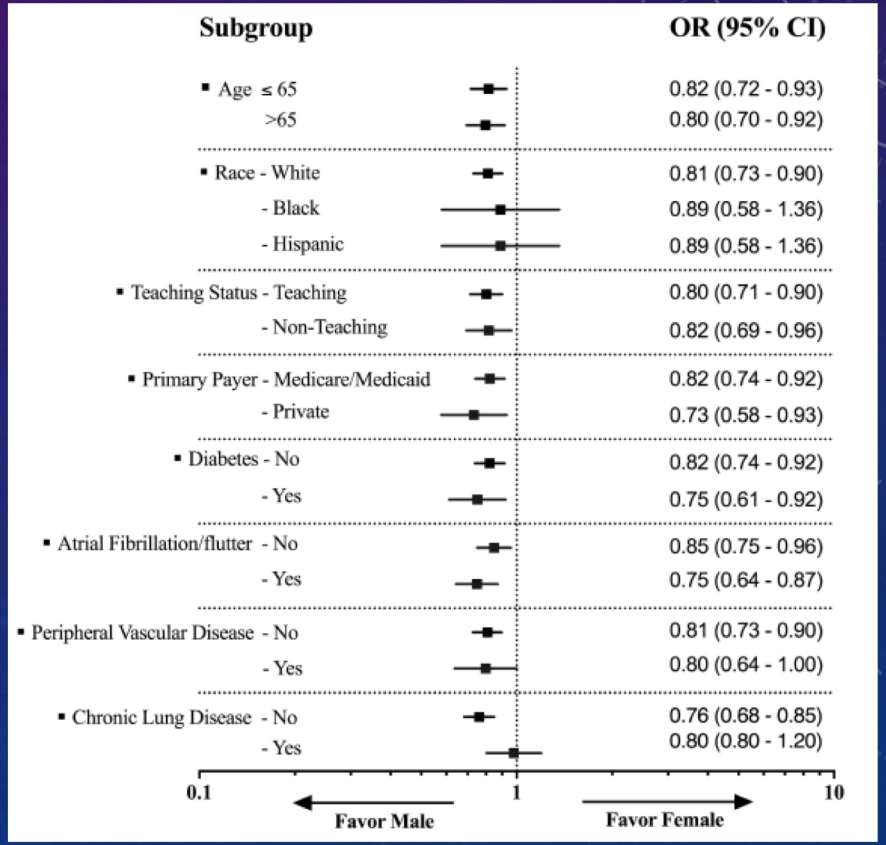
Chaker Z et al. J Am Heart Assoc. 2017;6:e006370.

ISOLATED AVR SEX DISPARITIES

In-Hospital Outcomes of Patients Undergoing Isolated Surgical Aortic Valve Replacement Between 2003-2014

	All Patients (n=85975)	Male (n=52264)	Female (n=33711)	P value
Clinical Outcome- no (%)				
In-Hospital Death	2512 (2.9)	1404 (2.7)	1108 (3.3)	<0.0001
Procedural Death	284 (0.3)	158 (0.3)	126 (0.4)	0.075
Vascular Complications	5143 (6)	3176 (6.1)	1967 (5.8)	0.144
Vascular Complications Requiring Surgery	3912 (4.6)	2502 (4.8)	1410 (4.2)	<0.0001
Permanent Pacemaker Implantation	5169 (6)	3072 (5.9)	2097 (6.2)	0.039
Transient Ischemic Attack	273 (0.3)	170 (0.3)	103 (0.3)	0.616
Clinical Stroke	2056 (2.4)	1257 (2.4)	799 (2.4)	0.743
Acute Kidney Injury	10456 (12.2)	6854 (13.1)	3602 (10.7)	<0.0001
Acute Kidney Injury Requiring Dialysis	1175 (1.4)	750 (1.4)	425 (1.3)	0.032
Blood Transfusion	31196 (36.3)	17470 (33.4)	13726 (40.7)	<0.0001
Cardiac Tamponade	758 (0.9)	502 (1)	256 (0.8)	0.002
Discharge Status- no (%)				<0.0001
Discharged Home	64659 (75.2)	42117 (80.6)	22542 (66.9)	
Discharged SNF*/NH†/IC‡	18631 (21.7)	8651 (16.6)	9980 (29.6)	
Length of Stay- mean (SD), d	10 (9)	9 (900)	10 (900)	<0.0001
Cost of hospitalization- mean (SD), $	50074 (34799)	50137 (35334)	49975 (33953)	0.504

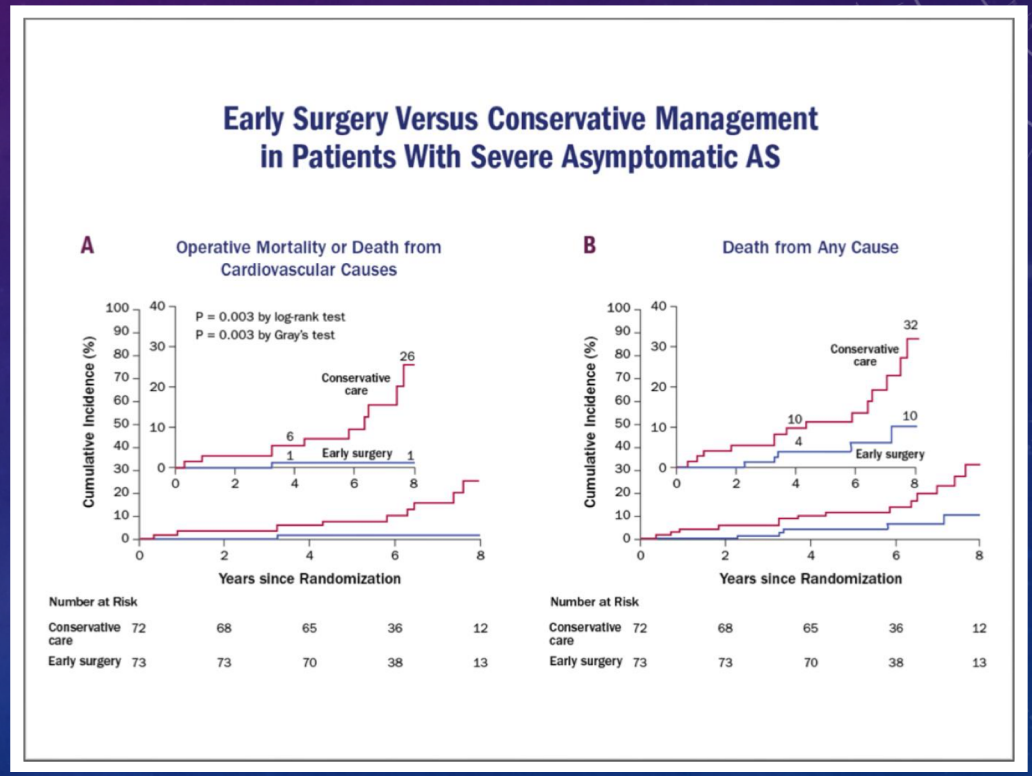
Subgroup Analysis of Sex Disparity in In-Hospital Mortality Following Isolated Surgical Aortic Valve Replacement (male used as a reference group).



Chaker Z et al. J Am Heart Assoc. 2017;6:e006370.

EARLY SURGERY OR MEDICAL MANAGEMENT FOR SEVERE ASYMPTOMATIC AORTIC STENOSIS

- Mean aortic jet velocity of 5.1 m/s
- Mean AVA of 0.63cm2
- Endpoint operative mortality or death from CV cause lower in early arm



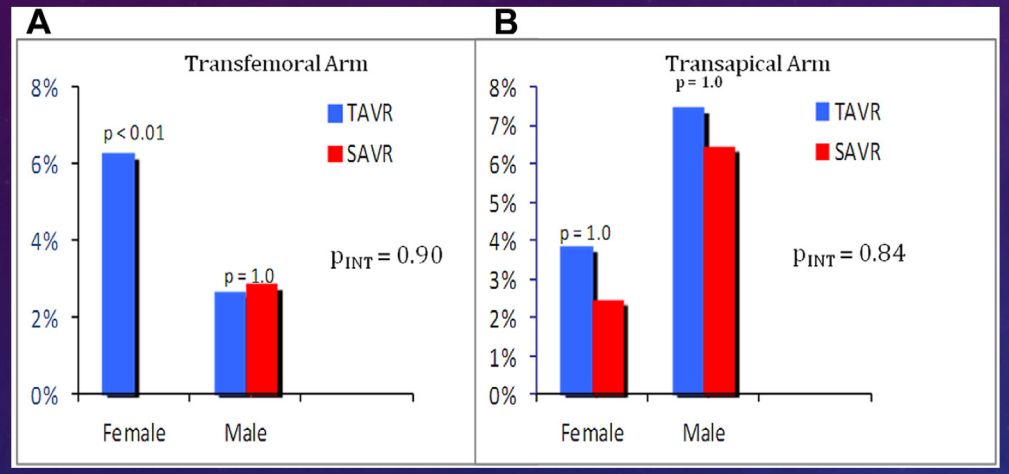
Kang D-H, Park S-J, Lee S-A, et al. N Engl J Med 2020;382:111-9.

TAVR OUTCOMES IN WOMEN - COREVALVE

- TAVR-treated patients experienced a statistically significant 1-year survival advantage compared with SAVR patients (12.7% vs 21.8%; p = 0.03). The composite all-cause mortality or major stroke rate also favored TAVR (14.9% vs 24.2%; p = 0.04).

Skelding KA et al Am J Cardiol 2016;118:560-566.

TAVR VS SAVR – EDWARDS SAPIEN VALVE

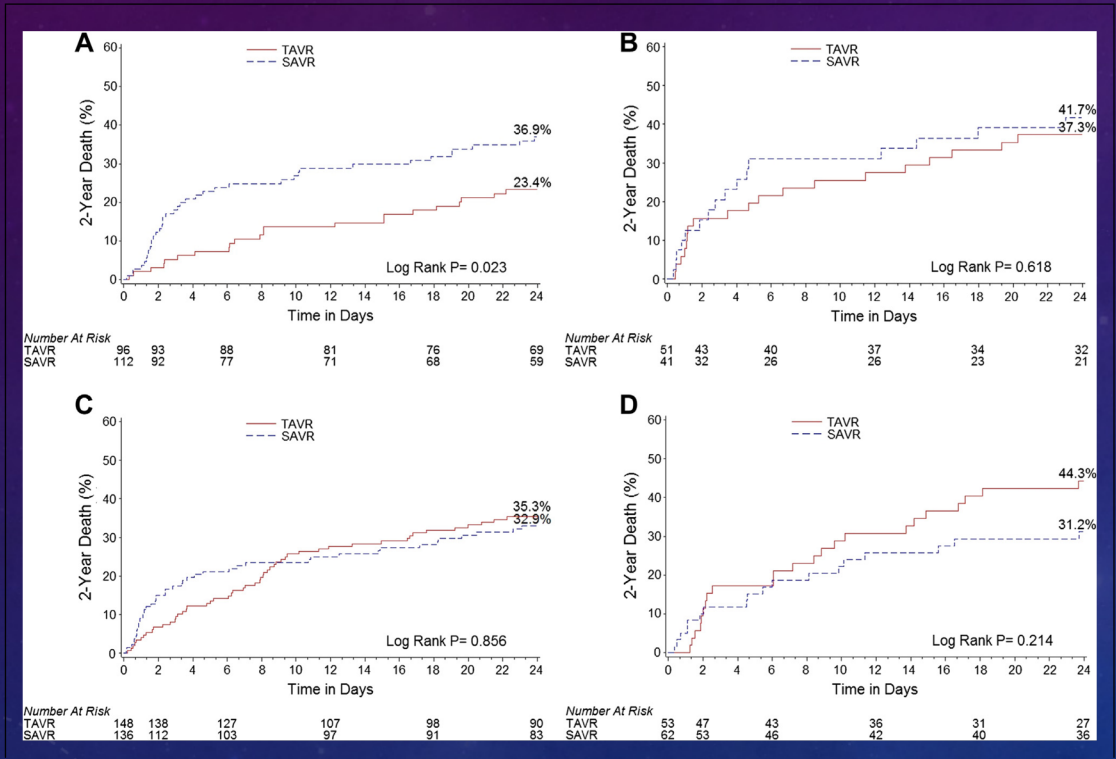


Incidence of procedural stroke after either transcatheter aortic valve replacement (TAVR) (blue bars) or surgical aortic valve replacement (SAVR) (red bars) stratified by sex in (A) the transfemoral arm and in (B) the transapical arm.

Vascular complications							
All	**23.8**	**5.2**	**<0.0001**	**13.9**	**3.0**	**<0.0001**	**0.87**
Major	**15.0**	**4.6**	**<0.01**	**8.0**	**2.5**	**0.02**	**0.87**
Unplanned arterial procedure	**18.4**	**3.9**	**<0.0001**	**9.5**	**2.0**	**0.001**	**0.91**

Williams M et al. J Am Coll Cardiol 2014;63:1522–8

ALL-CAUSE MORTALITY STRATIFIED BY SEX AND TREATMENT APPROACH



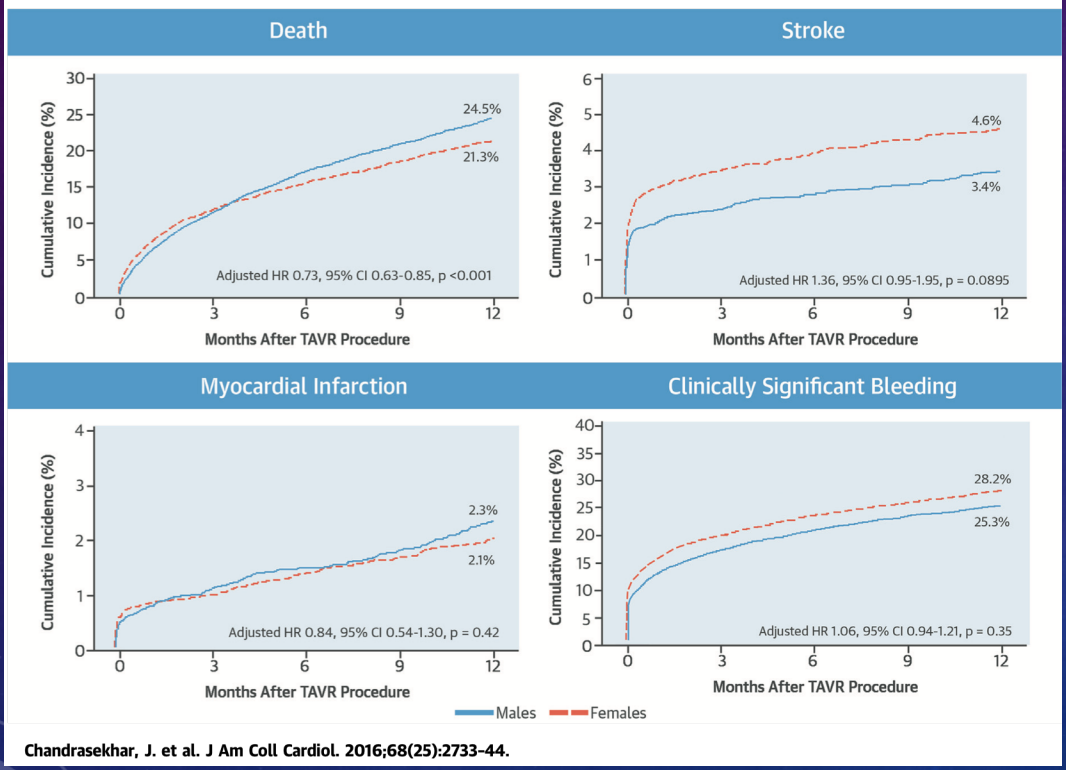
Kaplan-Meier estimates for all-cause mortality after either transcatheter aortic valve replacement (TAVR) (red lines) or surgical aortic valve replacement (SAVR) (blue lines) stratified by sex and treatment approach (transfemoral vs. transapical).

A. female-transfemoral arm
B. B female-transapical arm
C. C male-transfemoral arm
D. D Male- transapical arm.

Williams M et al. J Am Coll Cardiol 2014;63:1522–8

EARLY TVT REGISTRY DATA

Sex-Based Differences in TAVR: Crude and Adjusted 1-Year Outcomes

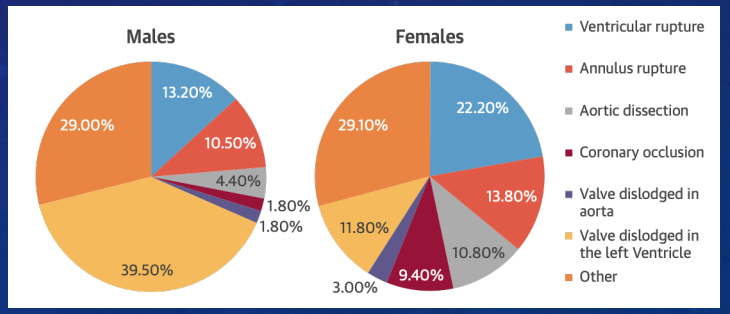


Chandrasekhar, J. et al. J Am Coll Cardiol. 2016;68(25):2733-44.

In-Hospital Device-related Complications

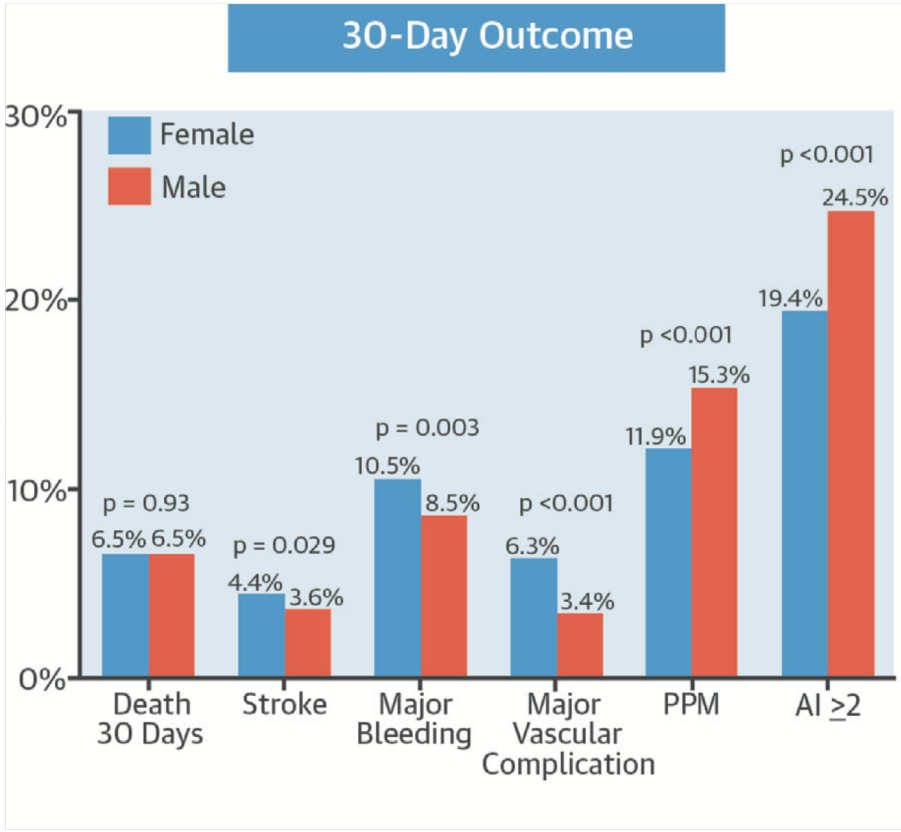
	Females (n = 11,808)	Males (n = 11,844)	Unadjusted OR*	p Value
Device embolization in the aorta	35 (0.30)	29 (0.24)	1.20	0.5234
Device migration	36 (0.30)	45 (0.38)	0.80	0.3807
Device recapture	39 (0.33)	59 (0.50)	0.67	0.0561
Aortic valve re-intervention	35 (0.30)	50 (0.42)	0.71	0.1318
Coronary obstruction or compression	83 (0.70)	17 (0.14)	4.92	0.0001
Unplanned other cardiac surgery	288 (2.4)	189 (1.6)	1.53	0.0001
Post-procedure severe AI	367 (3.1)	399 (3.4)	0.92	0.2731

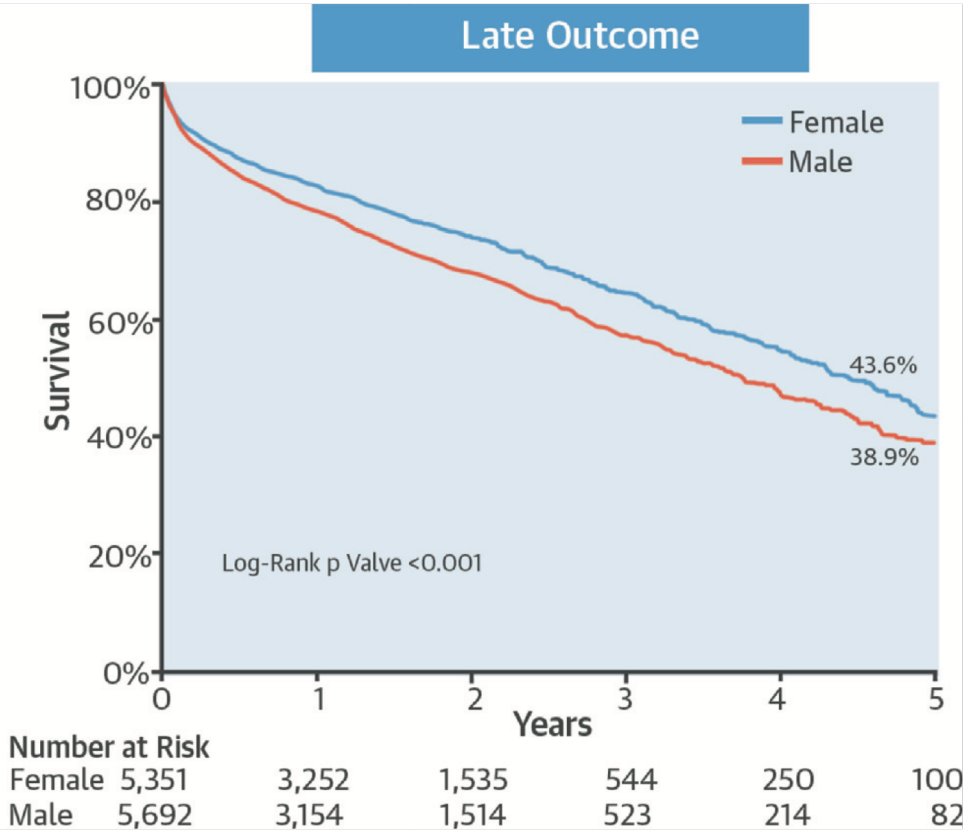
Reasons for Conversion to Surgery



Chandrasekhar, J. et al. J Am Coll Cardiol. 2016;68(25):2733–44.

SEX RELATED OUTCOMES FOLLOWING TAVR





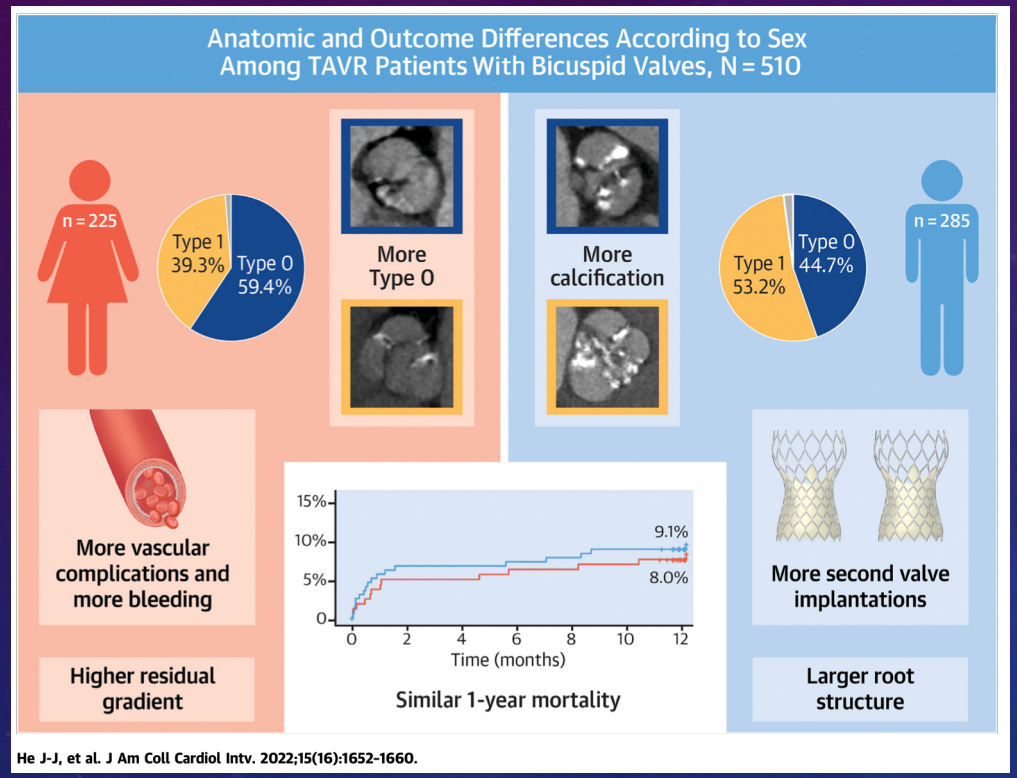
O'Connor, S.A. et al. J Am Coll Cardiol. 2015; 66(3):221-8.

PREDICTORS OF LONG TERM MORTALITY

	Death (n = 3,072)	No Death (n = 8,417)	p Value	HR (95% CI) Univariate Model	HR (95% CI) Multivariate Model (Cox)	p Value
Age, yrs	82.2 ± 8.2	83.1 ± 7.2	<0.001		1.00 (1.00-1.02)	0.002
Women	1,359 (44.2)	4,037 (50.1)	<0.001	0.79 (0.72-0.86)	0.79 (0.72-0.87)	<0.001
BMI, kg/m^2	26.7 ± 5.4	25.9 ± 5.5	<0.001		0.98 (0.98-0.99)	<0.001
Previous myocardial infarction	751 (24.5)	1,666 (20.7)	<0.001	1.24 (1.13-1.37)		
Active smoker	1,102 (35.9)	2,320 (28.8)	<0.001			
Peripheral vascular disease	1,069 (34.9)	2,287 (28.5)	<0.001	1.38 (1.27-1.51)	1.11 (1.01-1.21)	0.026
Diabetes (any)	864 (28.1)	2,174 (27.0)	0.23	1.06 (0.97-1.16)		
Previous stroke (CVA)	536 (17.6)	1,260 (15.7)	0.018	1.14 (1.02-1.28)		
Previous PCI	658 (23.4)	1,526 (19.4)	<0.001	1.27 (1.15-1.41)	0.93 (0.84-1.03)	0.17
CABG	868 (28.3)	2,253 (28.1)	0.82	1.01 (0.92-1.10)		
PAP ≥60 mm Hg	497 (19.3)	1,449 (19.6)	0.70	0.98 (0.87-1.09)		
Pulmonary disease	1,070 (34.8)	2,258 (28.0)	<0.001	1.37 (1.26-1.50)	1.32 (1.22-1.44)	<0.001
CrCl, ml/min/1.73 m^2	56.4 ± 26.2	50.8 ± 24.9	<0.001			
Renal insufficiency (CrCl <60 ml/min/1.73 m^2)	2,138 (70.8)	4,952 (63)	<0.001	1.43 (1.30-1.56)	1.22 (1.11-1.35)	<0.001
Coronary artery disease	1,587 (51.8)	3,789 (47.1)	<0.001	1.21 (1.11-1.31)		
LVEF <30%	244 (8.8)	580 (7.5)	0.025	1.19 (1.02-1.40)		
EuroSCORE	22.1 ± 14	25.9 ± 15.9	<0.001			
Aortic valve gradient, mm Hg	58.4 ± 24.7	57.2 ± 27.0	0.058			
Aortic valve area, cm	0.7 ± 1.0	0.8 ± 3.5	0.12			
Annular size, mm	21.6 ± 3.0	21.8 ± 5.0	0.82			
Femoral diameter (left), mm	7.5 ± 1.3	7.4 ± 1.4	0.59			
Femoral diameter (right), mm	7.6 ± 1.4	7.5 ± 1.3	0.063			
Transfemoral access	1,911 (62.2)	5,745 (71.3)	<0.001	0.66 (0.61-0.72)	0.77 (0.71-0.85)	<0.001
Balloon-expandable valve	1,385 (45.1)	3,521 (43.7)	0.18	1.06 (0.97-1.15)		
Aortic incompetence (grade ≥2)	658 (26.1)	1,486 (20.9)	<0.001	1.33 (1.20-1.48)	1.74 (1.46-2.07)	<0.001

O'Connor SA et al J Am Coll Cardiol 2015;66:221–8

BICUSPID DISEASE TREATMENT BY SEX



He J-J, et al. J Am Coll Cardiol Intv. 2022;15(16):1652-1660.

Sex-Specific 30-Day and 1-Year Outcomes

	Female (n = 225)	Male (n = 285)	*P* Value
At 30 d			
All-cause death	7 (4.3)	12 (6.1)	1.000
Stroke	5 (2.3)	1 (0.4)	0.092
Left ventricular mass index, g/m^2	136.2 ± 35.8	148.7 ± 47.3	0.001
Δ Left ventricular mass index, %[a]	18.9 ± 15.4	17.5 ± 14.9	0.357
Maximum aortic valve velocity, m/s	2.6 ± 0.5	2.4 ± 0.5	<0.001
Mean pressure gradients, mm Hg	16.0 ± 6.5	14.1 ± 6.4	0.009
Paravalvular leak more than mild	11 (8.3)	24 (15.3)	0.102
At 1 y			
All-cause death	13 (8.0)	18 (9.1)	0.699
Stroke	5 (3.3)	2 (1.1)	0.251
Maximum aortic valve velocity, m/s	2.5 ± 0.5	2.3 ± 0.6	0.001
Mean pressure gradients, mm Hg	15.0 ± 6.3	12.4 ± 7.6	0.011
Paravalvular leak more than mild	8 (8.2)	13 (12.0)	0.490

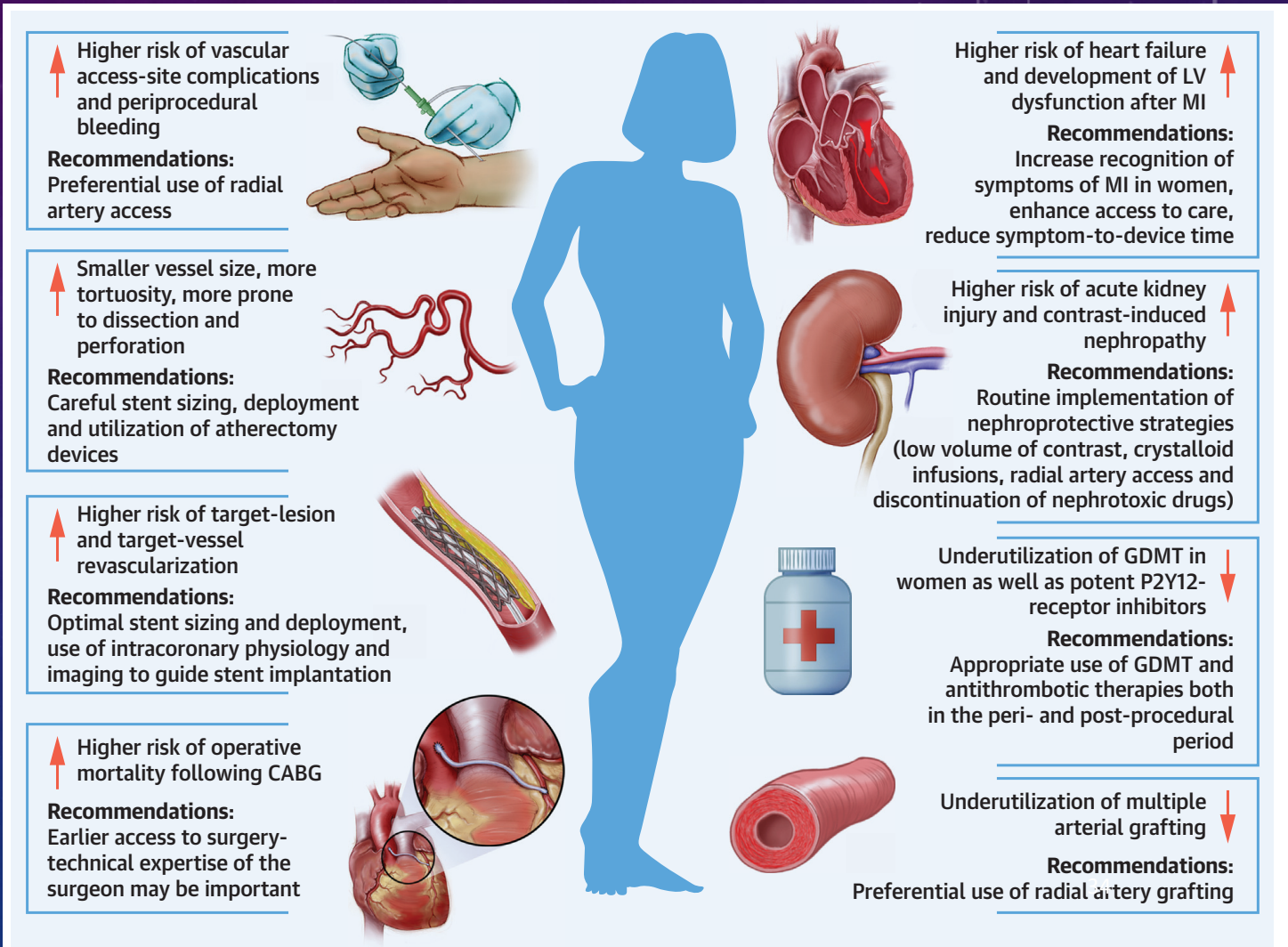
PERMANENT PACEMAKER USAGE

- 46 studies metanalysis
- 70,313 patients, 51.5% were women
- 14.9% women vs 16.6% men; OR 0.90, p=0.0022

- Women require less PPM after TAVR than men
- Interestingly using a balloon expandable valve equilibrates the need for PPM
- Age and ventricular function were not statistically important.

Jravaux JM et al. Am Heart Assoc. 2021:10:e019429.

FEMALE PROCEDURAL ISSUES



Gaudino M, et al. J Am Coll Cardiol. 2022;79(14):1407-1425.

HOW TO LOOK AT TREATMENT TRIALS

- Most data that is released compares men to women
- More importantly is comparing treated to untreated women
- Trials need to enroll more women to have the numbers to make meaningful inferences of treatment importance

WOMEN TREATING WOMAN

- Patient-Provider Gender concordance influences patient outcomes
- Risks factors not as well controlled with discordance
- Mortality rates in AMI higher women with discordance in treating physician
  - 5.4% relative risk reduction

- >50% of medical students are women
- 20% of cardiology fellows are women
- <15% of cardiologists are women
- <5% of interventional cardiologists are women
- <1% of structural cardiologists are women

Lau ES et al. J Am Coll Cardiol. 2021;8:1135-8.

THANK YOU!