THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

VEITH SYMPOSIUM
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Prediction Of 1-Year Mortality After Endovascular TAAA Repair: When Should We NOT Offer The Procedure

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Disclosures

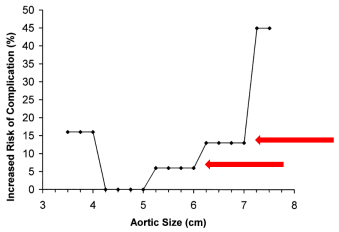
All proceeds to UAB

Consultant for:

Artivion, Cook Medical, Philips, Medtronic, Terumo Aortic

Research support: Cook Medical, Endospan, Medtronic, Philips, Terumo, W.L. Gore & Associates

Background: Natural History of Thoracoabdominal Aortic Aneurysms (TAAA)

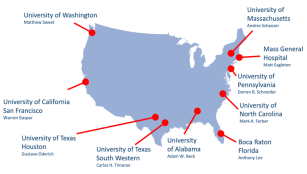


Elefteriades JA. 2002

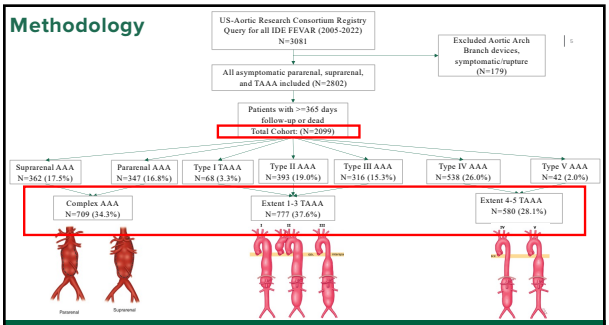
One Year Mortality after Repair in the US-ARC

- Prospectively maintained database consisting of all patients treated with Investigational Device Exemption F/BEVAR
- Physician-sponsored data from across 10 U.S. sites is independently monitored and continuously audited by the Food and Drug Administration (US-FDA)

United States F/BEVAR Aortic Research Consortium (ARC)



Methodology



Results: Patient Demographics and Comorbidities

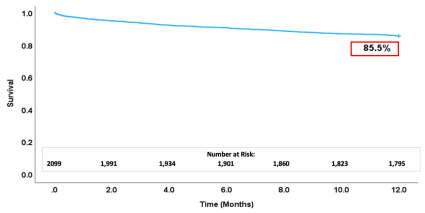
Table 1. Demographics By Extent Category

Demographic	Overall (N=2,099)	Complex AAA (N=709)	CE 1-3 (N=770)	CE 4-5 (N=577)	P-Value
Male	71.8%	81.9%	56.8%	79.4%	<0.001
White	87.8%	91.8%	84.9%	86.4%	<0.001
Age	73.8 +/-8.0	75.0 +/- 7.3	72.1 +/- 8.7	74.6+/- 7.42	<0.001
CAD	45.4%	52.4%	39.6%	52.1%	<0.001
CHF	12.2%	14.2%	10.5%	13.6%	0.08
COPD	35.4%	37.8%	35.5%	32.4%	0.13
Home Oxygen	9.5%	8.4%	10.7%	8.4%	0.44
CVA	17.1%	16.5%	17.8%	16.8%	0.82
Diabetes	15.2%	17.1%	12.6%	16.2%	0.04
ESRD	1.7%	0.4%	2.6%	2.1%	0.004
HTN	91.7%	90.0%	91.8%	93.6%	0.07
Prior MI	21.1%	23.7%	15.6%	25.3%	<0.001
Current Smoker	29.0%	28.4%	27.8%	31.0%	0.46
Functional Status					0.07
Independent	91.2%	90.1%	90.4%	93.5%	
Partial Dependent	8.1%	8.8%	9.6%	5.5%	
Fully Dependent	0.6%	1.0%	0.0%	0.3%	
Connective Tissue Disorder	0.5%	0.0%	1.4%	0.0%	<0.001

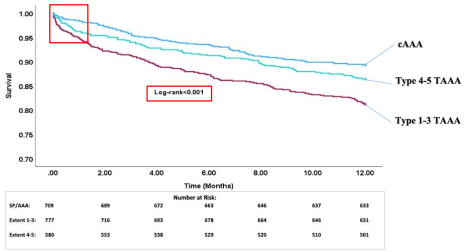
Results: Prior Operative History/Preoperative Labs

Operative Variable	Overall (N=2,099)	Complex AAA (N=709)	CE 1-3 (N=770)	CE 4-5 (N=577)	P-Value
Preoperative Aneurysm Size	64.3+/-11.1 cm	62.6 +/-12.0	66.1 +/- 10.5	64.4 +/- 10.2	<0.001
Prior Type B Dissection	6.0%	0	15.8%	2.1%	<0.001
Prior Type A Dissection	2.8%	0	8.5%	0.4%	<0.001
Prior TEVAR	13.2%	1.4%	29.9%	5.3%	<0.001
Prior EVAR	19.0%	28.1%	11.7%	19.2%	<0.001
Prior Open TAAA repair	2.1%	0.3%	3.1%	3.4%	<0.001
Prior Open AAA	11.4%	4.7%	13.1%	17.6%	<0.001
Prior Open Arch	4.0%	0.2%	3.7%	0.3%	<0.001
Preoperative Creatinine	1.23 +/- 0.88 mg/dl	1.2 +/- 0.51 mg/dl	1.3 +/- 1.2	1.2 +/-0.70	0.16
Preoperative Hematocrit	39.3 +/-5.3	40.3 +/- 4.8	37.7 +/- 5.4	40.1 +/- 5.4	<0.001

Overall 1-Year Survival



One-year Survival Stratified by Extent

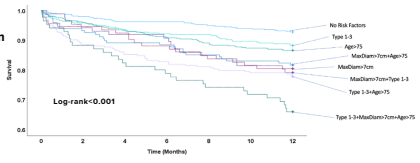


Multivariable Risk Factors for One Year Mortality

Predictors of 1-Year Mortality: Adjusted Analysis by Cox Regression			
Variable	Hazard Ratio	95% Confidence Interval	P-value
Current Smoker	1.583	1.195, 2.096	0.001
Creatinine > 1.7	1.446	1.035, 2.02	0.025
CHF	2.092	1.543, 2.835	<.001
Max Diameter > 7 cm	1.678	1.276, 2.208	<.001
Age > 75	1.837	1.41, 2.387	<.001
Extent I-III	1.592	1.205, 2.102	0.001
COPD	1.33	1.028, 1.72	0.03
Anemic (Hematocrit<36)	1.45	1.04, 2.02	<0.001

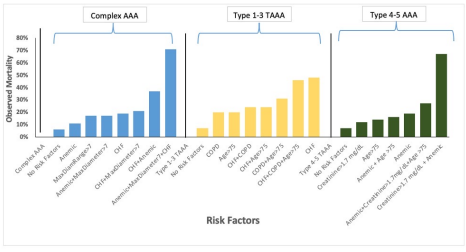
Observed 1-Year Survival with by risk factor profile

Maximum Diameter>7cm
Extent 1-3
Age>75

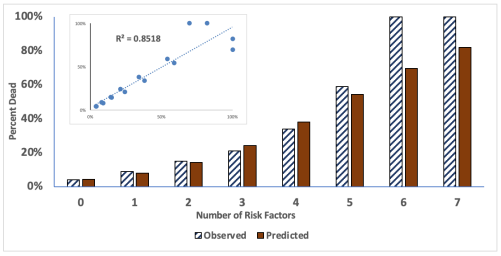


No Risk Factor	526	515	506	506	499	494	488
MaxDiam>7cm	92	87	85	81	77	75	74
Type 1-3	356	341	333	328	327	319	314
MaxDiamRange7+Type 1-3	86	81	79	78	73	70	68
age>75	521	500	486	474	464	455	451
MaxDiam>7cm+age>75	147	137	131	130	125	122	120
Type 1-3+age>75	243	215	207	201	197	192	189
MaxDiam>7cm+Type 1-3+age>75	85	75	70	67	63	61	56

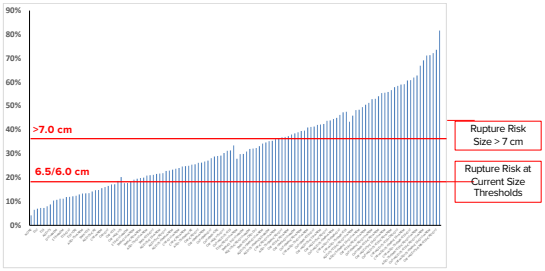
1-Year Mortality by Risk Factor Profile



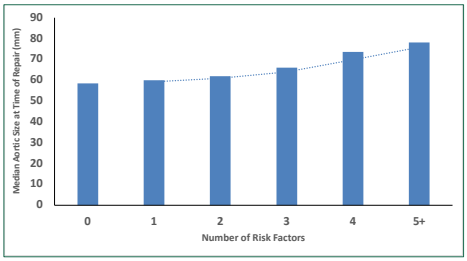
Observed to Expected Ratio



Mortality AFTER repair vs Rupture Risk:

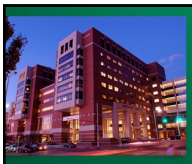


Timing of Repair and Aneurysm Size



Conclusions/Future Directions:

- BFEVAR is excellent at preventing rupture after repair
- TAAA patients are often highly co-morbid, which can lead to early mortality after repair despite prevention of rupture
- Highly comorbid patients may not benefit from repair at smaller aneurysm diameter



Thank you!

US-ARC
United States Aortic Research Consortium
PS-IDE x 10

A Schanzer
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W Gasper