



Mid-term results of TEVAR in complicated versus uncomplicated acute type B aortic dissection

A report from the Gore Global Registry for Endovascular Aortic Treatment (GREAT)

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Disclosure

Speaker name:

TRIMARCHI SANTI

I have the following potential conflicts of interest to report:


- Consulting: GORE WL; Medtronic, Inc
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

- I do not have any potential conflict of interest

Background

- The debate for treating acute type B dissection using thoracic endovascular aortic repair (TEVAR) is still objective of matter.
- This study analyzes the outcomes of TEVAR performed for complicated and uncomplicated acute type B aortic dissections (ATBAD) in the W.L. Gore's Global Registry for Endovascular Aortic Treatment (GREAT).



GREAT - Global Registry for Endovascular Aortic Treatment  **GREAT**
GLOBAL REGISTRY FOR
ENDOVASCULAR AORTIC
TREATMENT

Methods

- Patients from W.L. Gore's Global Registry for Endovascular Aortic Treatment (GREAT) who underwent TEVAR for ATBAD were included and data were retrospectively analyzed.



GREAT Global
5014 patients



172 pts were treated by TEVAR for ATBAD

102 were complicated (cTBAD)

70 were uncomplicated (uTBAD).

Methods

- Definition on Complicated:

Dissections presenting with rapid aortic expansion determining an aneurysm, aortic rupture and/or hypotension/shock, visceral, renal, or limb ischemia, paraplegia/paraparesis, peri-aortic hematoma, recurrent or refractory pain, and refractory hypertension despite adequate medical therapy.



Methods

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- Primary outcomes:
Hospital mortality, 30-day endoleaks, stent graft migration, fracture or compression and aortic rupture.
- Re-interventions were defined:
any invasive or minimally invasive measure related to the initial aortic procedure performed at any time following the initial procedure.
- Device related re-interventions included:
any measure related to a deficiency of the device implanted into the aorta.
- Mid-term 3 years follow-up:
was scheduled according to each center protocol.



Results

- Complicated patients were younger compared to uncomplicated (59.6 ± 12.7 vs 62.6 ± 11.8 , $P=0.012$)
- Black race was more prevalent in complicated, ($P=0.037$).
- There was no difference in terms of comorbidities between complicated and uncomplicated patients.

Baseline characteristics.

Variable	Complicated	Uncomplicated	OR (95% CI)	p
Female Gender	26/102 (25.5%)	14/70 (20.0%)	1.37 (0.66-2.86)	0.403
Age	59.6 ± 12.7	62.6 ± 11.8		0.012
BMI	28.5 ± 6.4	28.4 ± 7.3		0.856
White Race	69/102 (67.7%)	45/70 (64.3%)		0.037
Black Race	24/102 (23.5%)	10/70 (14.3%)		
Other Race	9/102 (8.8%)	15/70 (21.4%)		
Hypertension	88/102 (86.3%)	63/70 (90.0%)	0.69 (0.27-1.83)	0.464
Stroke	6/102 (5.9%)	4/70 (5.7%)	1.03 (0.28 – 3.80)	0.964
TIA	4/102 (3.9%)	2/70 (2.9%)	1.38 (0.25 – 7.79)	0.709
Carotid Disease	2/102 (2.0%)	3/70 (4.3%)	0.45 (0.07 – 2.75)	0.373
Coronary Disease	17/102 (16.7%)	14/70 (20.0%)	0.80 (0.37 – 1.75)	0.576
Hyperlipidemia	34/102 (33.3%)	24/70 (34.3%)	0.96 (0.50 – 1.82)	0.897
CHF	8/102 (7.8%)	6/70 (8.6%)	0.91 (0.30 – 2.74)	0.864
COPD	11/102 (10.8%)	13/70 (18.6%)	0.53 (0.22 – 1.26)	0.148

Results

- The average time from onset to treatment was:
8.0 ± 8.6 days for cTBAD (median 5.5, IQR 2.0-12.0) and
6.0 ± 6.5 days for uTBAD (median 4.0, IQR 1.0-9.0; P=0.079).

Variable	Complicated	Uncomplicated	OR (95% CI)	p
Days from Onset to Treat (median, interquartile range)	5.5 (IQR, 2-12)	4 (IQR 1-9)		0.079

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6.0 ± 6.5 days for uTBAD (median 4.0, IQR 1.0-9.0; P=0.079).
- The percutaneous approach was more prevalent in the
uncomplicated group (54.3% vs 37.3%, P=0.027), while surgical
cut down was more frequent in complicated pts (68.6% vs
52.9%, P=0.036).

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Days from Onset to Treat (median, interquartile range)	5.5 (IQR, 2-12)	4 (IQR 1-9)		0.079
Access Method				
Percutaneous	38/102 (37.3%)	38/70 (54.3%)	0.50 (0.27 – 0.93)	0.027
Cut-down	70/102 (68.6%)	37/70 (52.9%)	1.95 (1.04 – 3.66)	0.036
Surgical Conduit	5/102 (4.9%)	3/70 (4.3%)	1.15 (0.27 – 4.98)	1.000
Endovascular Conduit	0/102 (0.0%)	7/20 (2.9%)	0.13 (0.01 – 2.83)	0.164

Results

- Procedures related to aortic branch vessels were 46 (45.1%) in cTBAD versus 15 (21.4%) in uTBAD (P=.002).

Variable	Complicated	Uncomplicated	OR (95% CI)	p
Procedures involving LSA	46/102 (45.1%)	15/70 (21.4%)	3.01 (1.51 – 6.01)	0.002

Results

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- The LSA was covered without revascularization in a larger proportion of cases in complicated dissections (14.7% vs 8.6%, P=0.22).
- Complicated patients underwent more frequently LSA revascularization (24.5% vs 7.1%, P=0.003)

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Procedures involving LSA	46/102 (45.1%)	15/70 (21.4%)	3.01 (1.51 – 6.01)	0.002
LSA Management				
Covered not revascularized	15/102 (14.7%)	6/70 (8.6%)	-	0.22
Covered revascularized	25/102 (24.5%)	5/70 (7.1%)	-	0.003
Not Covered	62/102 (60.8%)	59/70 (84.3%)	-	<0.001
Total Aortic Device Length, mean ± SD (range)				
	24.4 ± 11.9 (10-73 cm)	26.8 ± 12.0 (10-83 cm)	-	0.191

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- The LSA was covered without revascularization in a larger proportion of cases in complicated dissections (14.7% vs 8.6%, P=0.22).
- Complicated patients underwent more frequently LSA revascularization (24.5% vs 7.1%, P=0.003)
- The mean length of stay was 14.3±10.6 (median 11, range 2-75) versus 9.8±7.9 (median 8, range 0-42) days in cTBAD versus uTBAD (p<.001).

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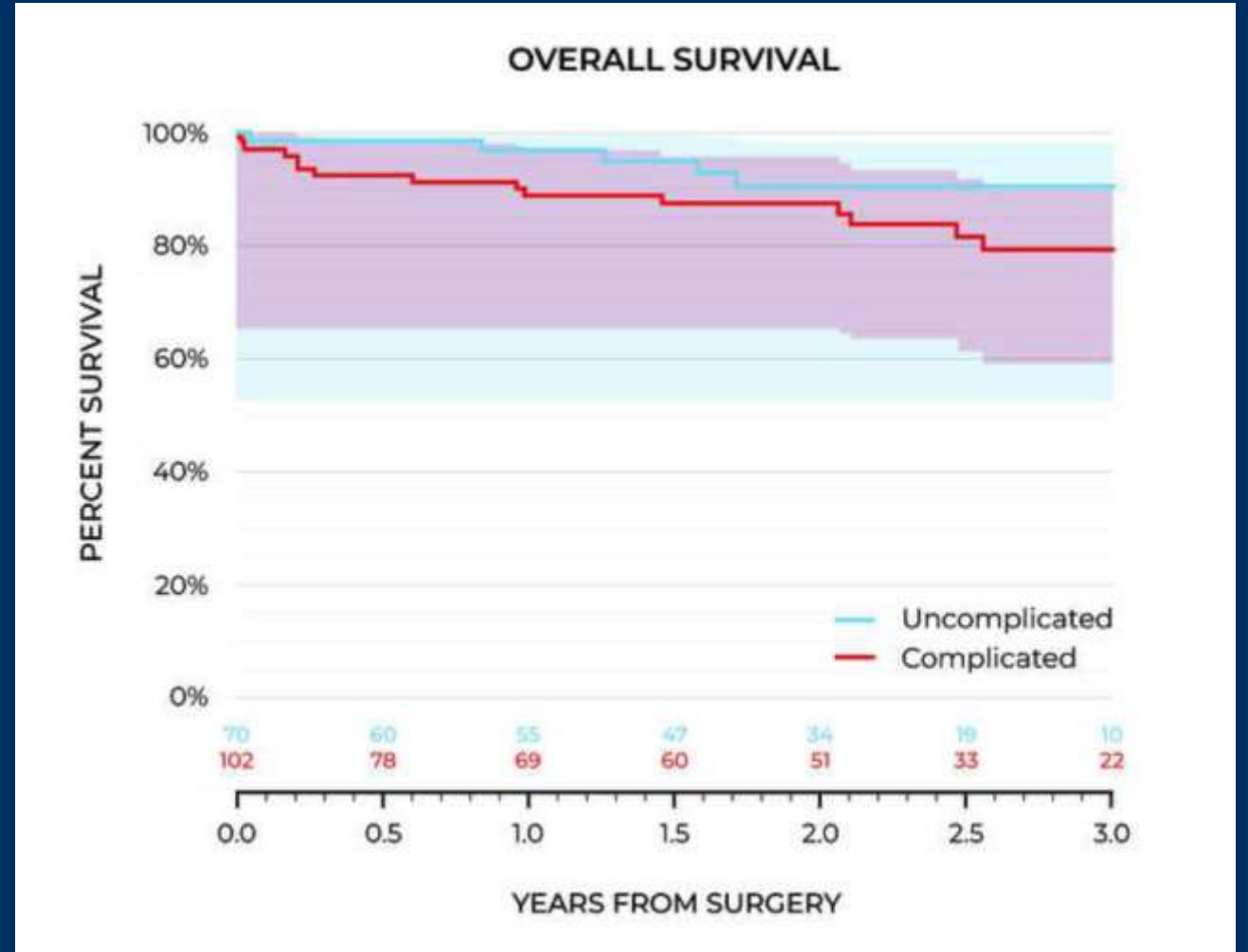
Results

- 30-day outcomes were not significantly different between the two groups:
 - Mortality
 - stroke or TIA
 - spinal complications
 - re-interventions
 - Aortic complications
 - Aortic re-intervention

Variable	Complicated	Uncomplicated	OR (95% CI)	p
30-Day Outcomes				
Aortic Complication	9/102 (8.8%)	4/70 (5.7%)	1.60 (0.47 – 5.41)	0.449
Aortic Reintervention	7/102 (6.9%)	2/70 (2.9%)	2.51 (0.51 – 12.43)	0.313
Spinal Complication	3/102 (2.9%)	1/70 (1.4%)	2.09 (0.21 – 20.52)	0.647
Branch Vessel Complication	3/102 (2.9%)	0/70 (0.0%)	4.96 (0.25 – 97.54)	0.272
Cardiac Complication	4/102 (3.9%)	1/70 (1.4%)	2.82 (0.31 – 25.75)	0.650
Stroke	2/102 (2.0%)	1/70 (1.4%)	1.38 (0.12 – 15.52)	1.000
Pulmonary Complication	3/102 (2.9%)	4/70 (5.7%)	0.50 (0.11 – 2.31)	0.445
Infectious Complication	3/102 (2.9%)	4/70 (5.7%)	0.50 (0.11 – 2.31)	0.445
GI Complications	4/102 (3.9%)	2/70 (2.9%)	1.39 (0.25 – 7.79)	1.000
Renal Complication	2/102 (2.0%)	4/70 (5.7%)	0.33 (0.06 – 1.85)	0.226
Death	3/102 (2.9%)	1/70 (1.4%)	2.09 (0.21 – 20.52)	0.647

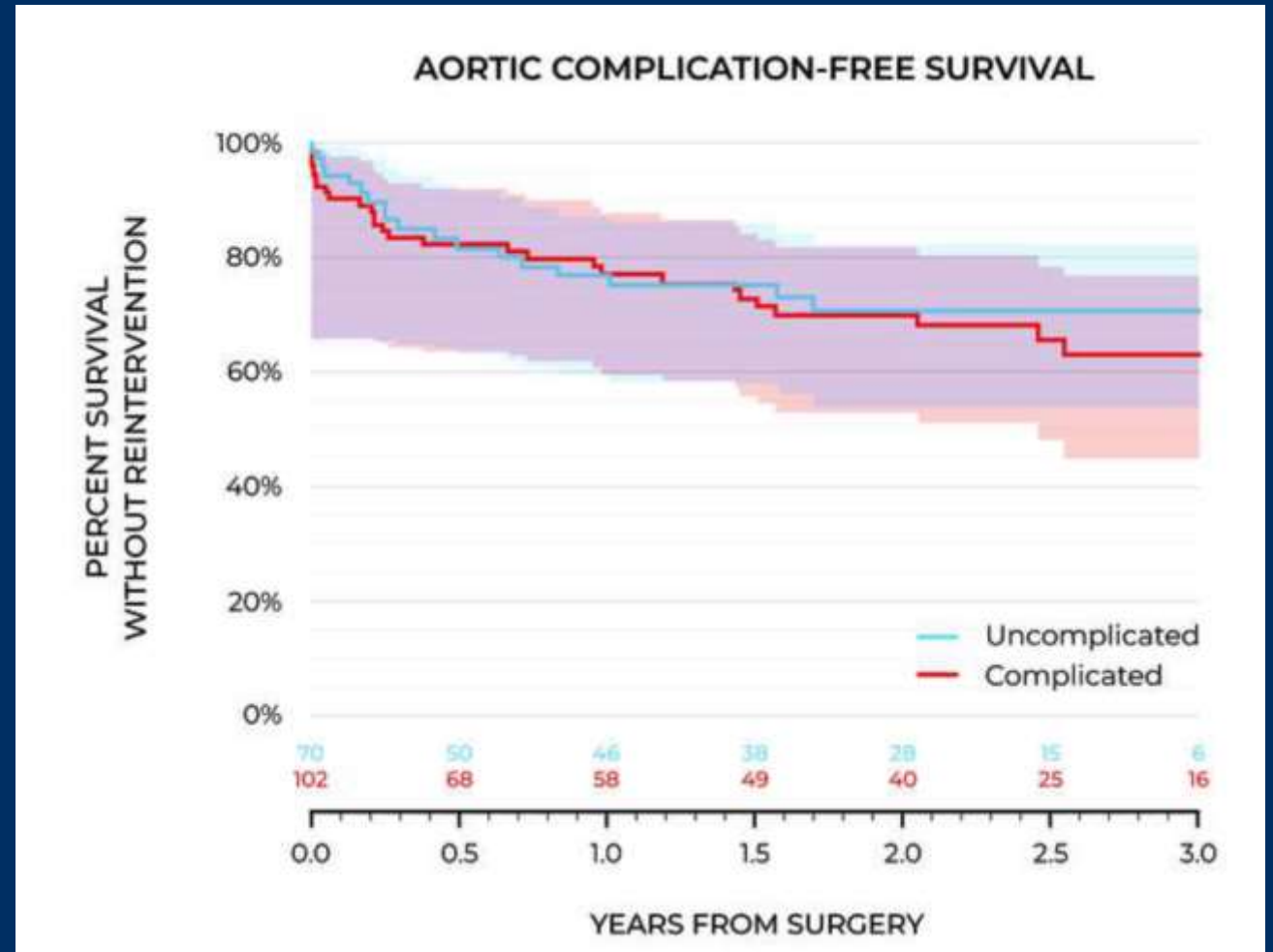
Results

- No significant differences between groups in terms of overall survival in cTBAD vs uTBAD at three years (79.1±20.8% vs 90.4±9.5%, P=0.138)



Results

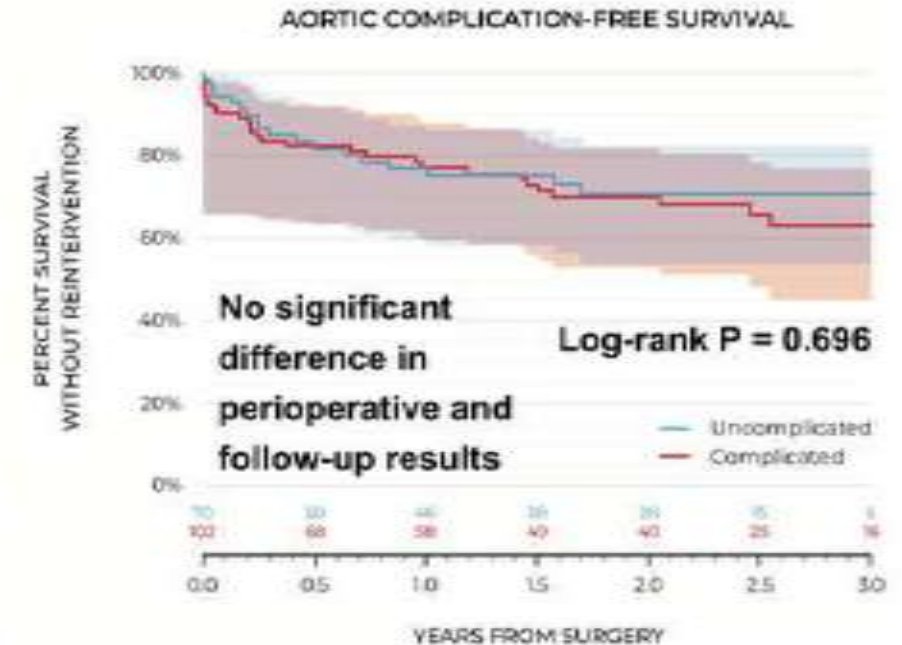
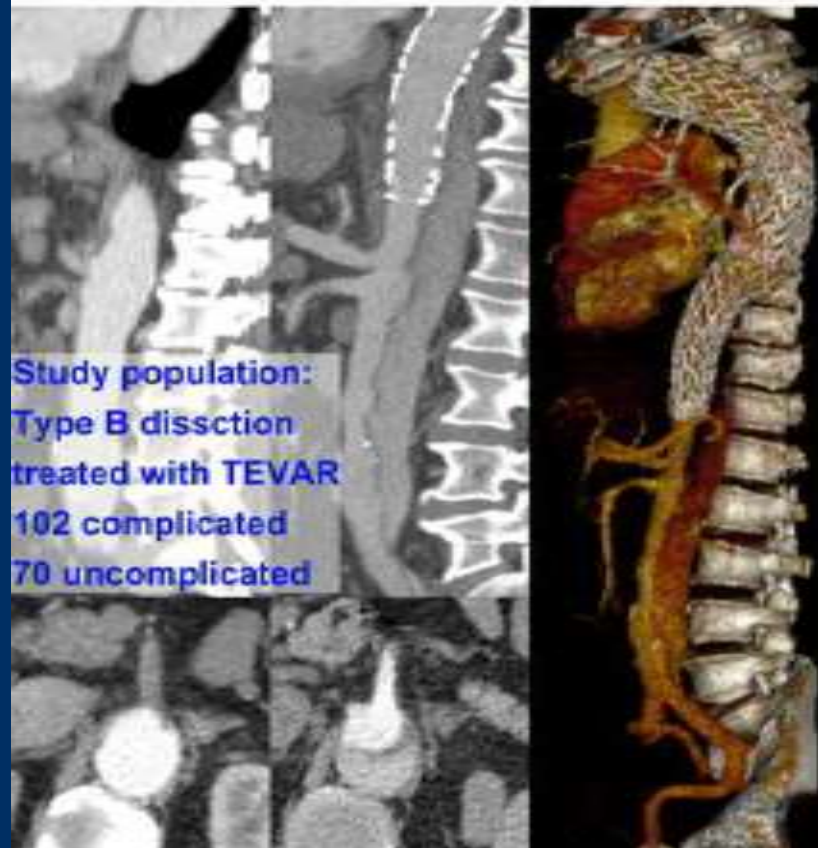
- No significant difference between groups in terms of aortic complication-free survival in cTBAD vs uTBAD at three years ($62.9 \pm 37.1\%$ vs $70.6 \pm 29.3\%$, $P=0.696$)



Central message

- Perioperative complication and mortality rates were equally low for both
- Similarly, positive was the mid-term outcome

TEVAR showed low mortality and morbidity both in complicated and uncomplicated type B dissection



Real-world registry data support the use of TEVAR as first-line treatment of complicated type B dissection

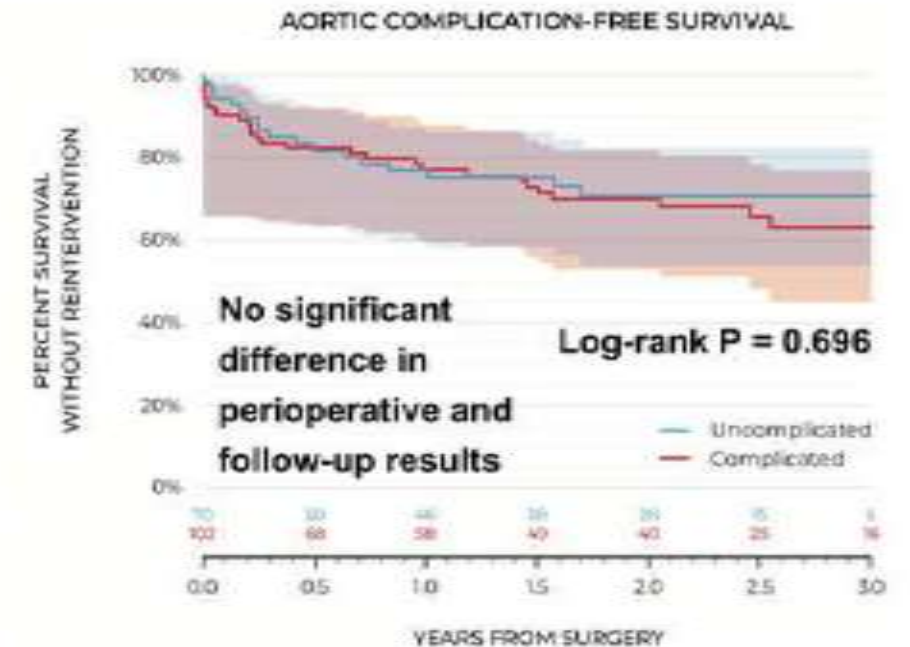
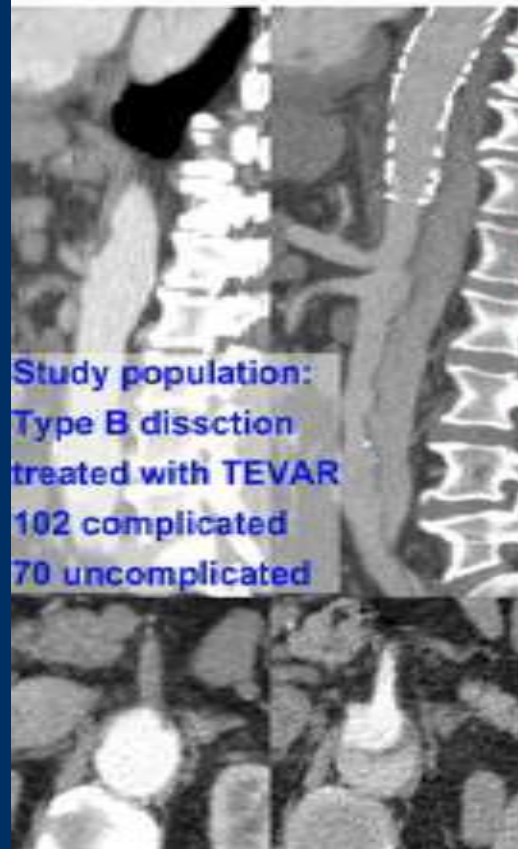
TEVAR: thoracic endovascular aortic repair

Conclusions

Perspective statement

- The real-world registry data provided in this study supports the endovascular repair as first-line strategy for treating complicated type B dissections.
- However, in the absence of level A evidence from RCT, results of uTBAD patients' cohort treated with TEVAR from registries are of importance for better understanding its related risk and benefit.

TEVAR showed low mortality and morbidity both in complicated and uncomplicated type B dissection



Real-world registry data support the use of TEVAR as first-line treatment of complicated type B dissection

TEVAR: thoracic endovascular aortic repair

Thanks for Your Attention



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Fondazione IRCCS Ca' Granda
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