DEBATE: With Uncomplicated Acute TBADs, The Case For Waiting 2-6 Weeks From Onset For TEVAR And Then Limiting Aortic Coverage

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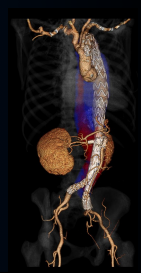
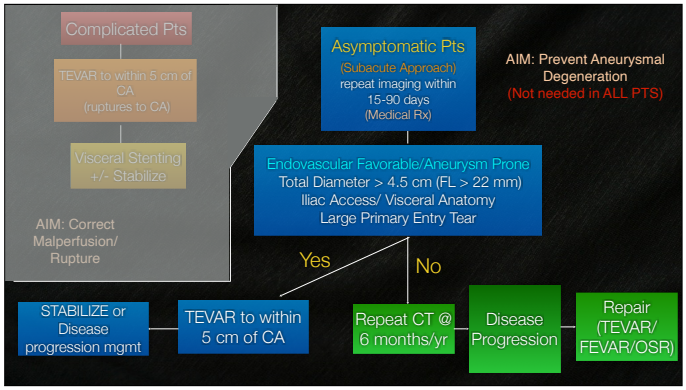


Disclosures

	Cook Medical	WL Gore	Getinge	Centerline Biomedical	ViTTA
Relationship	Research Support, Clinical Trials, Consulting	Clinical Trials, Consulting	Consulting	Consulting	Consulting, Clinical Trials
Received	Grants, Honoraria	Honoraria	Honoraria	Stock Options	Honoraria

Important Issues

- Timing of Repair
  - Delayed Repair - Subacute Phase versus During the Acute Phase
- Extent of Aortic Coverage
  - Limited - Less than 15 cm coverage
  - Entire thoracic aorta (L SCA to CA)
  - Near Total-Limited (5 cm above CA)



Subacute Approach Rationale

Treatment during stable phase of Dz
(Asymptomatic Pts)

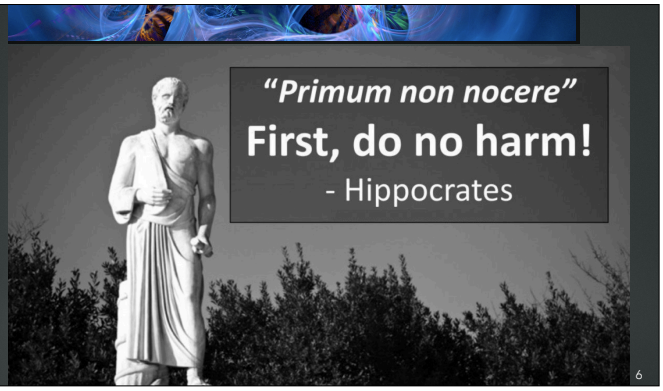
- Endovascular favorable patient selection at high risk for needing repair
- Delay repair to allow for aortic stabilization
  - Decreasing procedural complications
  - Reduce risk of RTAD (1.3-24%)
    - Elective cases: < 1%
- Unlikely to negatively impact remodeling
- Reduce risks from acute intervention
- Patient at minimal additional risk

Anatomic parameters predicting progression

- Large entry teal
- Total aortic diameter >4.5 cm
- FL > 22 mm
- # vessel from FL
- # of entry tears

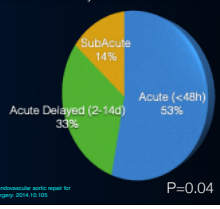
Progression: 75%

Appropriate Patient Selection and Monitoring !!!!!!!



Timing of Repair

- Severe complications more common in the acute and delayed acute (p=0.04)
- Conclusions: Delayed intervention lowers the risk by a factor of 3x - 4x



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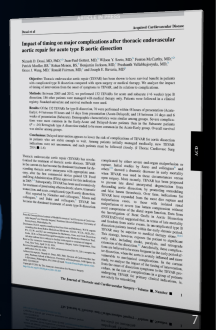

Deeal, N. D., et al. (2014). Impact of timing on major complications after thoracic endovascular aortic repair for acute type B aortic dissection. *The Journal of Thoracic and Cardiovascular Surgery* 2014:10.105

Timing of Repair

Also impacts outcome at 1 yr

- Compared 238 patients with uncomplicated TBAD tx with TEVAR

	N	30-day Mortality
Acute	142	1.5%
Subacute	96	0%

- Composite Outcome (death, rupture, new dissection, RTAD, endoleak, and late re-intervention
  - Favored subacute treatment @ 1yr (HR 0.25)

Xiang, D. et al. Timing of Endovascular Repair Impacts Long-term Outcomes of Uncomplicated Acute Type B Aortic Dissection. *J Vasc Surg* (2021) doi:10.1016/j.jvs.2021.09.017.

Endovascular repair of acute vs. subacute uncomplicated type B aortic dissection: a systematic review and meta-analysis

WenXin Zhao[1†], Yang Yang[1†], ZhiYuan Wu[1], ZuoGuan Chen[1], YongPeng Diao[1], Yong Lan[1,2*] and YongJun Li[1,2*]

- 3769 pts, prior to 2023 (6 studies)
- Acute Tx: 2642, Subacute: 1127
- Mean F/U: 38 months
- Results: (Acute Tx > Subacute Tx)
  - Increased Risk of 30-day complications

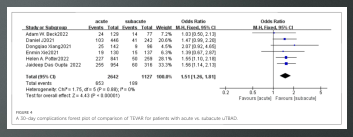

FIGURE 4
A 30-day complications forest plot of comparison of TEVAR for patients with acute vs. subacute uTBAD.

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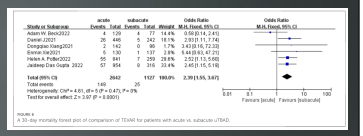

FIGURE 6
A 30- day mortality forest plot of comparison of TEVAR for patients with acute vs. subacute uTBAD.

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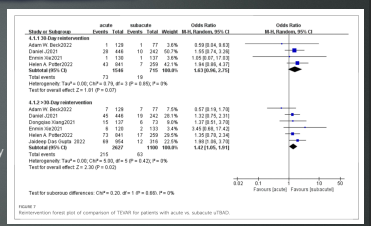

FIGURE 7
Reintervention forest plot of comparison of TEVAR for patients with acute vs. subacute uTBAD.

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  - Reintervention more likely
  - No difference in long-term prognosis

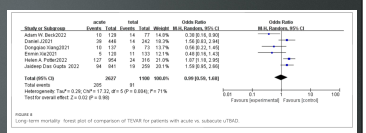

FIGURE 8
Long-term mortality forest plot of comparison of TEVAR for patients with acute vs. subacute uTBAD.

Thoracic endovascular aortic repair for hyperacute, acute, subacute and chronic type B aortic dissection: Meta-analysis of reconstructed time-to-event data☆,☆☆

Michel Pompeu Sá[a,b,*], Xander Jacquemyn[c], James A. Brown[a,b], Danial Ahmad[a,b], Derek Serna-Gallegos[a,b], George J. Arnaoutakis[d], Michael J. Singh[b,e], Ibrahim Sultan[a,b]

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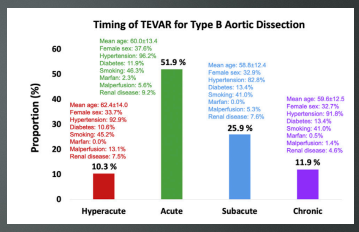
- Outcome measures
  - All-cause mortality
  - Aortic related mortality
  - Late aortic reinterventions



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Oct 2024

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- TEVAR in hyperacute is associated with very poor outcomes in uncomplicated TBAD
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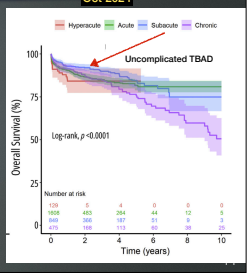
- The subacute phase is associated with the best outcomes among all phases
  - Overall Survival



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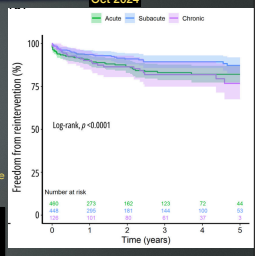
  - Freedom from reintervention



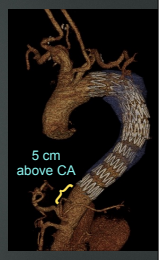
The Safety and Efficacy of Extended TEVAR in Acute Type B Aortic Dissection

Xiaoying Lou, MD, Yazan M. Duwayri, MD, William D. Jordan, Jr, MD, Edward P. Chen, MD, Ravi K. Veeraswamy, MD, and Bradley G. Leshnower, MD
Division of Cardiothoracic Surgery, Emory University School of Medicine, Atlanta, Georgia; Division of Vascular and Endovascular Therapy, Emory University School of Medicine, Atlanta, Georgia; and Division of Vascular Surgery, Medical University of South Carolina, Charleston, South Carolina

- Early concern with TEVAR —> paraplegia therefore limited coverage <15 cm
- Extension with TEVAR alone has not currently been shown to increase the risk of ischemia complications
- Extend cover to region just above CA

Outcomes

- Improved FL remodeling and potentially decrease the need for re-intervention
- Aligns graft into strait region of the aorta
- Decreases stent-graft induce new entry tears (SINE)

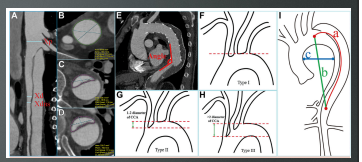


Lou, X. *et al*. The Safety and Efficacy of Extended TEVAR in Acute Type B Aortic Dissection. *Ann Thorac Surg* **110**, 799–806 (2020).

Risk factors for distal stent graft-induced new entry after endovascular repair in uncomplicated type B aortic dissection

Dongqiao Xiang, MD,[a,b] Bin Chai, MD,[a,b] Yuxi Cui, MS,[a,b] Jia Huang, MD,[a,b] Huimin Liang, MD,[a,b] Bin Liang, MD,[a,b] Huangxuan Zhao, PhD,[a,b] Fan Yang, MD, PhD,[a,b] *and* Chuansheng Zheng, MD, PhD,[a,b]
Wuhan, China

- Uncomplicated Type B Dissection: N=226
- Evaluated numbers proximal and distal factors
- Mean F/U: 4.6 years
- Multivariate Analysis
  - Type III Arch
  - Decreased angle
  - Increased distal oversizing
  - Increased distal mismatch ratio



Xiang, D. *et al*. 77, 37-45.e1 (2023).

Conclusion

- Current management strategy for acute TBAD has changed
- When patients are ASYMPTOMATIC:
  - Treatment in the subacute phase likely improves outcomes with significant risk reduction for the patient
  - Subacute treatment results in the best overall survival and freedom from reintervention.