Not So: With Uncomplicated Acute TBADs TEVAR Should Be Delayed 2 Weeks To 3 Months For These Reasons

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Disclosure
Matt Thompson
I have the following potential conflicts of interest to report:
Consulting
Employment in industry
Shareholder in a healthcare company
Owner of a healthcare company
Other(s)
I do not have any potential conflict of interest

LITERATURE REVIEW UNCOMPLICATED TBAD
- In uncomplicated TBAD medical management safe in acute phase – 10% become complicated
- Medical management of uncomplicated TBAD has a poor long term prognosis (50% fail medical therapy) with nearly 40% needing surgery within 7y
- Associations between aortic morphological features and late aortic related complications becoming better defined
- Medical management and surveillance does not prevent sudden aortic related death
- TEVR reduces prevalence of aortic related death in both RCT and observational studies

TIMING OF TEVAR FOR UNCOMPLICATED TBAD
- Prophylactic surgery is appropriate to prevent late complications for TBAD
- Most patients will show adverse morphological features associated with long term aortic degeneration
- Most patients with uncomplicated TBAD will benefit from TEVR to prevent late ARM as long as peri-operative complications low
- Significant issue is timing of endovascular intervention and any adverse features for TEVAR
- Very early – bad / 2-12 weeks good />12 weeks ???

NNT ANALYSIS UNCOMPLICATED TBAD

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>NNT</th>
</tr>
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<tbody>
<tr>
<td>Symptomatic carotid stenosis 70-99%</td>
<td>6</td>
</tr>
<tr>
<td>Symptomatic carotid stenosis 50-69%</td>
<td>15</td>
</tr>
<tr>
<td>Asymptomatic carotid stenosis 79-99%</td>
<td>&gt;22</td>
</tr>
<tr>
<td>TEVR TBAD (all cause) INSTEAD</td>
<td>11.1</td>
</tr>
<tr>
<td>TEVR TBAD (ARD 5y) INSTEAD</td>
<td>8.1</td>
</tr>
<tr>
<td>TEVR TBAD (all cause) Durham et al</td>
<td>6.4</td>
</tr>
</tbody>
</table>

PREDICTING LATE COMPLICATIONS OF UNCOMPLICATED TBAD

Tadros et al JACC 2019;74:1494–1504

AIMS OF INTERVENTION UNCOMPLICATED TBAD

- Low incidence peri-operative complications
- Reduce prevalence of long term aortic complications
- Avoid need for further aortic intervention
- Aim to restore single lumen
- Aorta retains plasticity for a period after dissection
- Aorta most fragile immediately post-dissection
- Find optimum therapeutic window where risk of peri-operative complications is low but before aortic plasticity lost

VIRTUE STUDY

<table>
<thead>
<tr>
<th>Acute (n=50)</th>
<th>Sub-Acute (n=24)</th>
<th>Chronic (n=26)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality 30d (%)</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Stroke (%)</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>SCI (%)</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

RETROGRADE TYPE A DISSECTION

AORTIC PLASTICITY - TBAD

FALSE LUMEN THROMBOSIS
**THERAPEUTIC WINDOW - OTHER CONSIDERATIONS**

- Serial assessment in acute phase to define 10% who transition to complicated TBAD
- Important factor in decision to intervene on uncomplicated TBAD is morphology of aorta and relates to outcome of TEVAR
- Consider life expectancy
- Consider type of TEVAR – endograft or composite

**SUMMARY AND CONCLUSIONS**

- Risk / benefit analysis – default TEVR unless contraindication
- Optimal therapeutic window opens when risk of RTAD reduces and closes when aortic plasticity lost
- RTAD remains a concern with acute intervention
- Aortic plasticity maintained up to 12 weeks
- Intervention in sub acute phase is preferred