

Aortic Dissection

I do treat when appropriate

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Disclosure

Speaker name: Johnny Steuer

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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

Management of aortic dissection

Medical

- **Wheat MW Jr**, et al. Treatment of dissecting aneurysms of the aorta without surgery. *J Thorac Cardiovasc Surg* 1965;50:364e371

Surgical/Endovascular

- **DeBakey ME**, Henly WS, Cooley DA, et al. Surgical management of dissecting aneurysms of the aorta. *Thorac Cardiovasc Surg* 49:130-149 1965
- **Dake MD**, et al. Endovascular stent-graft placement for the treatment of acute aortic dissection. *N Engl J Med* 340:1546-1552 1999
- **Nienaber CA**, et al. Nonsurgical reconstruction of thoracic aortic dissection by stent-graft placement. *N Engl J Med* 1999; 340:1539-1545

Indication for TEVAR in (complicated) aortic dissection

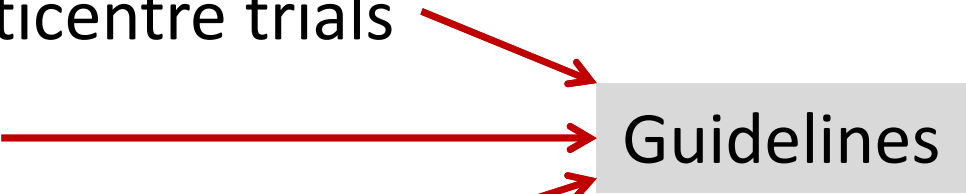
- **Malperfusion:** visceral, renal, limb ischaemia
- **Periaortic haematoma/rupture**
- **Uncontrolled pain/hypertension** despite adequate medical therapy
- **Disease progression/rapid expansion**

Why we shouldn't treat all patients with (uncomplicated) dissection – TEVAR complications

- **Stroke:** manipulation in the arch and ascending aorta, left subclavian artery (vertebral) coverage
- **Spinal cord ischaemia:** extent of aortic coverage, previous aortic surgery
- **Arm ischaemia:** possible consequence of left subclavian artery coverage
- **Retrograde type A dissection:** balloon dilatation, oversizing

Why we shouldn't treat all patients with
(uncomplicated) dissection – lack of evidence

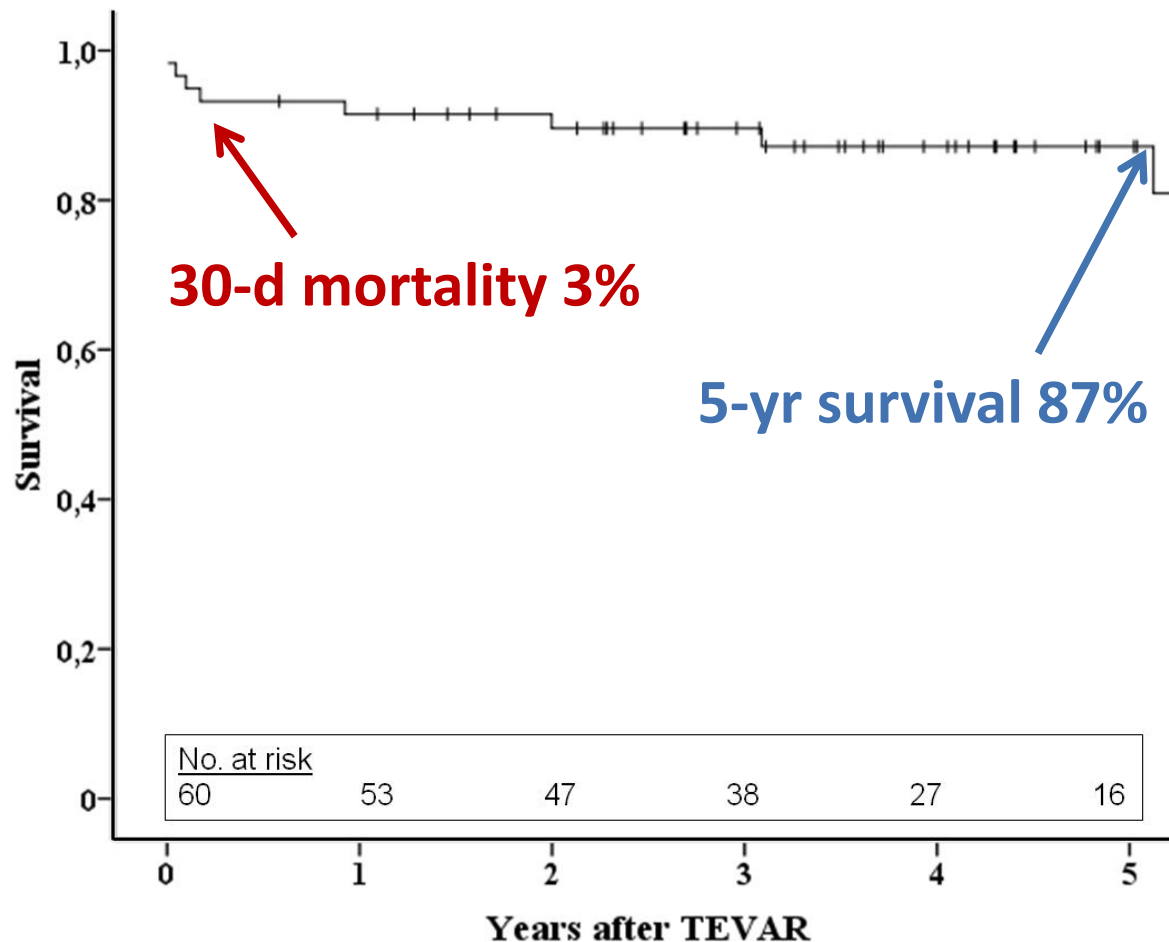
Levels of evidence

- Single- and multicentre trials
 - Registry: IRAD
 - Randomised controlled trials
 - ADSORB
 - INSTEAD/XL
- Guidelines
- 
- A diagram illustrating the flow of evidence. Three red arrows point from the list items to a grey rectangular box labeled 'Guidelines'. The top arrow points from 'Single- and multicentre trials', the middle arrow from 'Registry: IRAD', and the bottom arrow from 'Randomised controlled trials'.

Early and Long-term Outcome after Thoracic Endovascular Aortic Repair (TEVAR) for Acute Complicated Type B Aortic Dissection **CME**



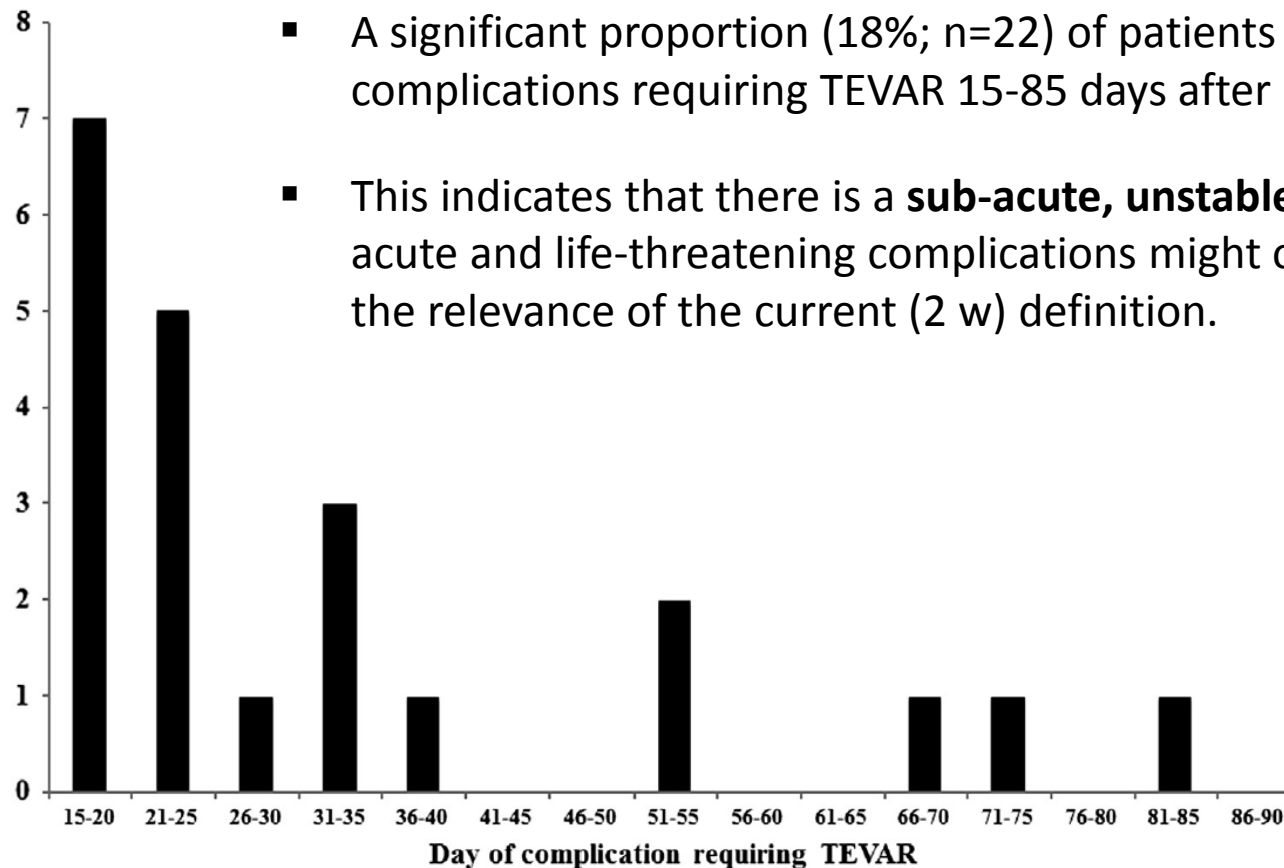
J. Steuer ^{a,*}, M.-O. Eriksson ^b, R. Nyman ^b, M. Björck ^a, A. Wanhainen ^a



- **Death**, n=2 (3%)
 - Cerebral haemorrhage
 - MOF
- **Spinal ischaemia**, n=4
 - One permanent paraplegia (2%)
- **Cerebral lesion**, n=3 (5%)
- **Other**
 - Bowel ischaemia, n=4 (6%)
 - Amputation, n=1 (2%)

Distinction between Acute and Chronic Type B Aortic Dissection: Is there a Sub-acute Phase? ☆

J. Steuer ^{a,*}, M. Björck ^a, D. Mayer ^b, A. Wanhainen ^a, T. Pfammatter ^c, M. Lachat ^b



- A significant proportion (18%; n=22) of patients presented with acute complications requiring TEVAR 15-85 days after onset of dissection.
- This indicates that there is a **sub-acute, unstable phase** during which acute and life-threatening complications might occur, which questions the relevance of the current (2 w) definition.

TEVAR in acute uncomplicated type B dissection

ADSORB

- 61 patients (non-consecutively) randomised to BMT or BMT + TEVAR (TAG)
- Composite morphological endpoint
- ..."the question arises as to whether endovascular treatment can reduce mortality further. This question will not be answered by the present study." (*Eur J Vasc Endovasc Surg* 2012;44:31-36)
- Favourable remodelling at 1 year with BMT + TEVAR (*Eur J Vasc Endovasc Surg* 2014;48(3):285-291)
- The patients are interested in (event-free) survival rather than remodelling (?)

TEVAR in uncomplicated chronic stable type B dissection

INSTEAD (*Circulation* 2009;120:2519-2528)

- 140 patients randomised to BMT or BMT + TEVAR
- Primary end point **all-cause death at 2 years**; secondary aorta-related death, progression, remodelling
- TEVAR effective in remodelling (91% vs 19%), no difference in survival at 2 years (89% vs 96%)

INSTEAD XL (*Circ Cardiovasc Interv* 2013;6:407-416)

- Extended follow-up demonstrating lower aorta-related mortality (7% vs 19%) and disease progression (27% vs 46%) after 5 years, but no difference in all-cause mortality

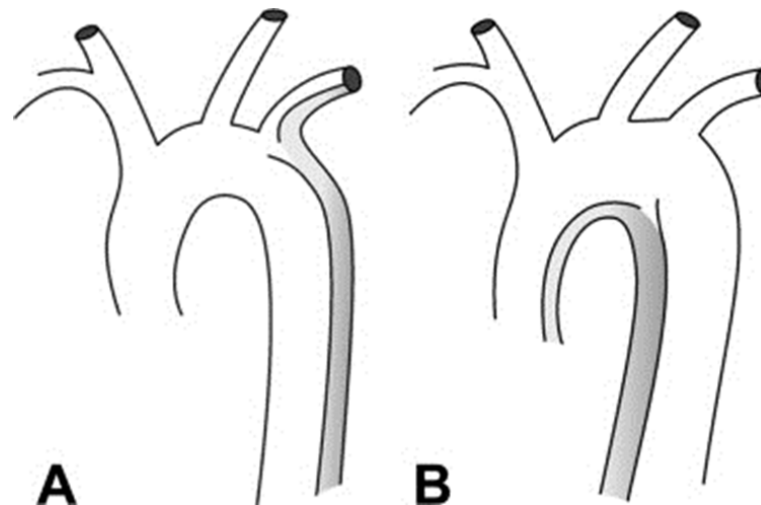
Algorithmic strategy (DISSECT)

DISSECT (*Eur J Vasc Endovasc Surg* 2013;46(2):175-190)

- Duration
- Intimal tear location
- Size of the aorta (max diam)
- Segmental extent
- Clinical complications
- Thrombosis of false lumen

Suggested high-risk predictors

- Entry tear diameter ≥ 10 mm
- Entry tear location
- Aortic diameter ≥ 4 cm
- False lumen diameter ≥ 22 mm



Summary

- TEVAR is favourable in complicated acute type B dissection
- TEVAR may be favourable (*survival*) in some patients with uncomplicated dissection
- If TEVAR in uncomplicated dissection – When?
- Are there any dissections that are uncomplicated?
- Improved risk stratification with identification of predictors (*morphological and clinical*) of complications needed

Conclusion

I do treat when appropriate

MERCI!



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