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**Are stent-grafts for acute type B
dissection durable?**

**Est-ce que les stents graft pour la
dissection aigue de type B sont
efficaces à moyen terme ?**



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Faculty Disclosure

CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE
CONTROVERSIES & UPDATES
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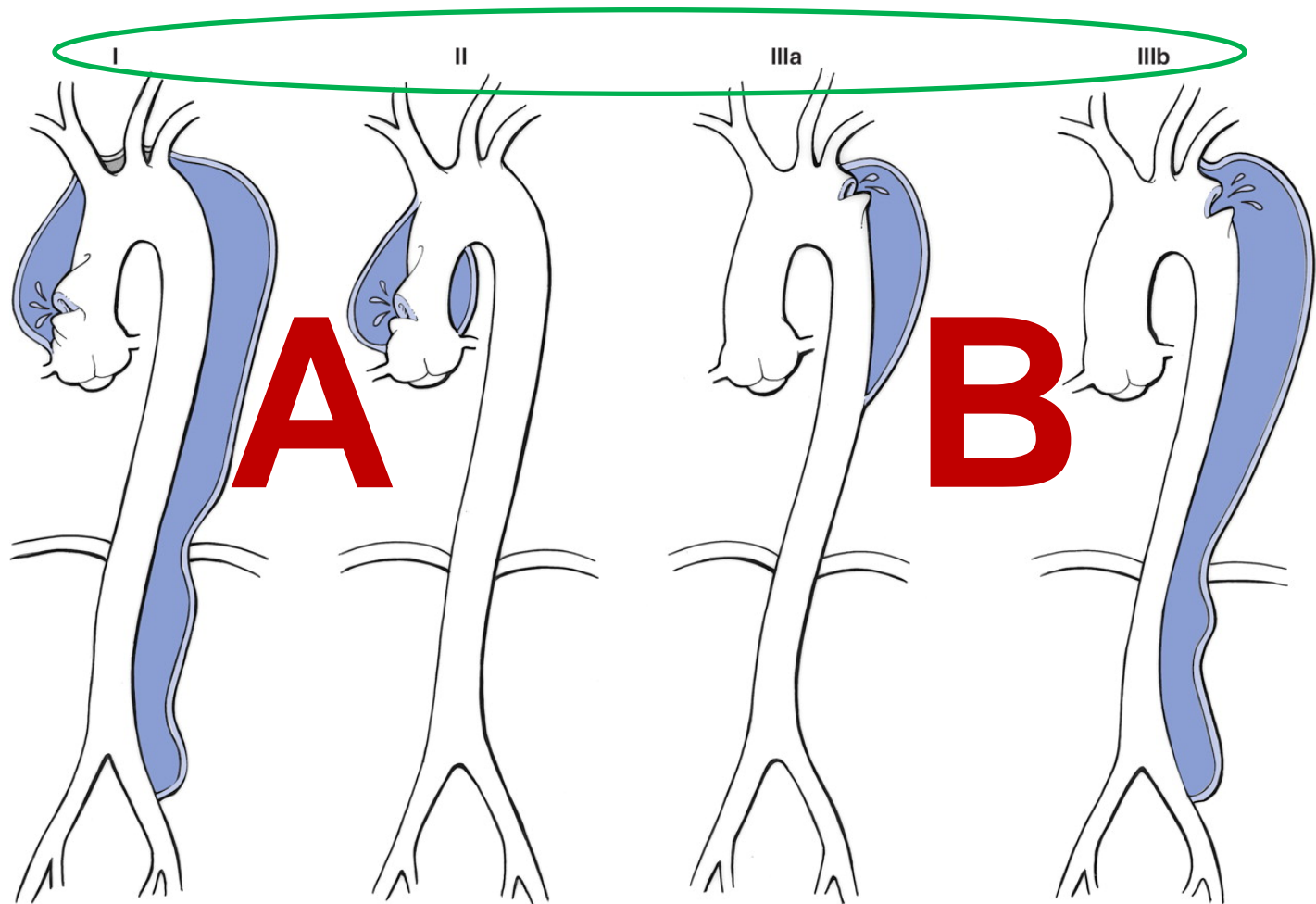
I have **no financial relationships** to disclose.

Je n'ai **aucune relation financière** à déclarer.



Classification of aortic dissection

Anatomical features



Reece T Bi, Green G Ri, Kron I Li. Aortic Dissection.

Cohn Lh, ed. Cardiac Surgery in the Adult. New York: McGraw-Hill, 2008:1195-1222.



Temporal classification

Commonly used definition

- The first 14 days after onset = acute phase
- >14 days = chronic phase

Definition used in randomised trials, ADSORB and INSTEAD

Subacute phase? 15-30 days? 15-90 days?

Steuer J et al. Distinction between acute and chronic type B dissection: Is there a sub-acute phase? Eur J Vasc Endovasc Surg (Submitted)



Classification of aortic dissection

Complications

- Rupture (Including impending rupture)
- Malperfusion
- Rapid aortic enlargement
- Intractable pain
- Uncontrollable hypertension



Assessment of durability

Patient perspective

- Survival
- (All-cause mortality)
- Freedom from major morbidities: Stroke, paraplegia, amputation, renal failure, bowel resection
- Quality of life
- Freedom from re-intervention



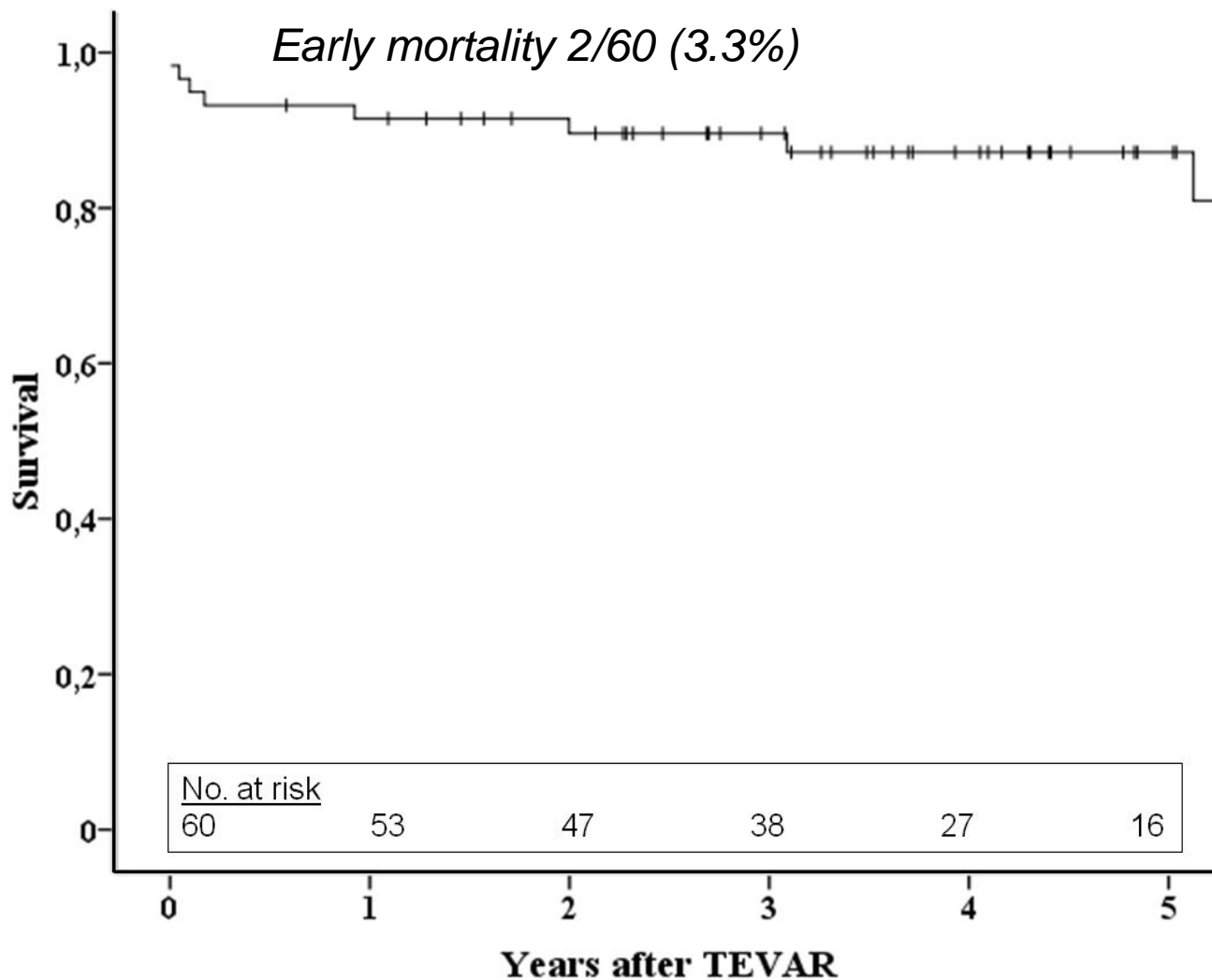
Assessment of durability

Surgeon perspective

- Dissection-related mortality
- Aortic remodelling
- Stentgraft-related complications:
migration, collapse, fracture
- Early and late endo-leaks



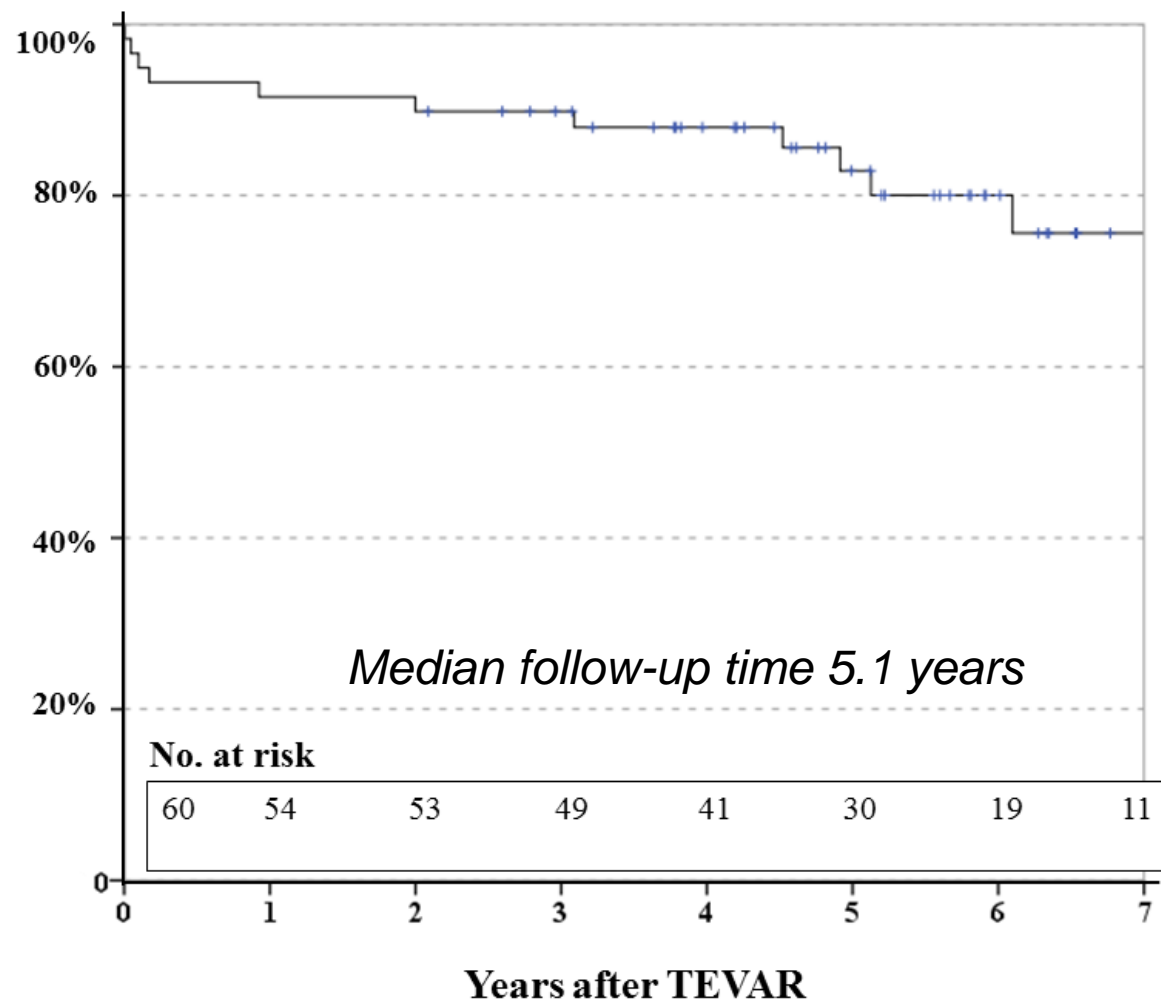
Survival as a measure of durability





Survival as a measure of durability – update

Survival





Survival data

- 30-day mortality in association with TEVAR for acute complicated type B dissection: 2-10%
 - Fattori R, et al. JACC. Cardiovasc Interv 2008;1(4):395-402
 - Lombardi JV, et al. J Vasc Surg 2012;55(3):629-40
 - White RA, et al. J Vasc Surg 2011;53(4):1082-90
- Mid- and long-term survival less well studied
 - Tsai TT, et al. Circulation 2006;144(21):2226-31
 - Parsa CJ, et al. Ann Thorac Surg 2010;89(1):97-102
 - Verhoye JP, et al. J Thorac Cardiovasc Surg 2008;136(2):424-30

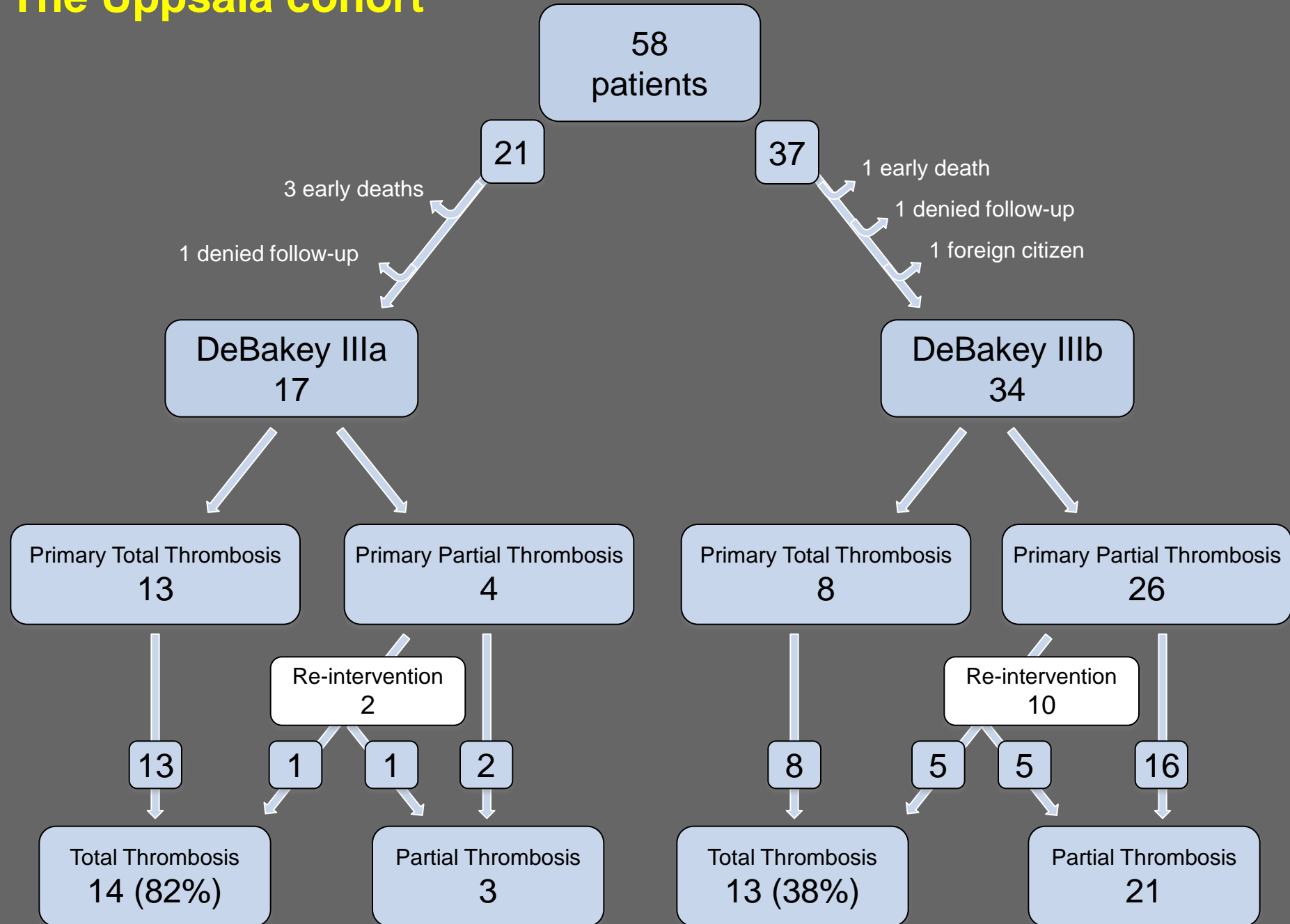


Expectations on TEVAR in aortic dissection

- Re-distribution of blood flow to the true lumen
- Stabilisation of the aorta
- Expansion of the true lumen
- Thrombosis of the false lumen

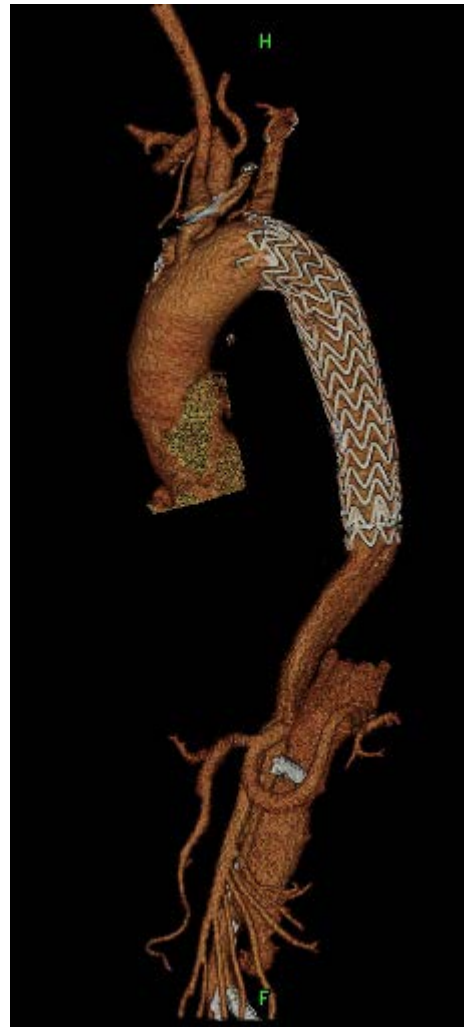
Aortic remodelling = proxy of long-term durability?

The Uppsala cohort





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CT-image one year after successful TEVAR for complicated type B dissection. Note the filling of the true lumen and the thrombosis of the pseudolumen to the level of the diaphragm.



Indications for aortic reintervention in 12 patients

- Dilatation proximal to the stent graft (4)
- Dilatation distal to the stent graft (4)
- Dilatation prox+dist to the stent graft (1)
- Sealing of type-I endoleak without dilatation (2)
- Sealing of re-entry combined with EVAR (1)



All primary reinterventions (for any indication)

9/60 patients re- TEVAR (15%)

- + cervical debranching 3
- + visceral debranching 1

10/60 patients non- TEVAR reinterventions

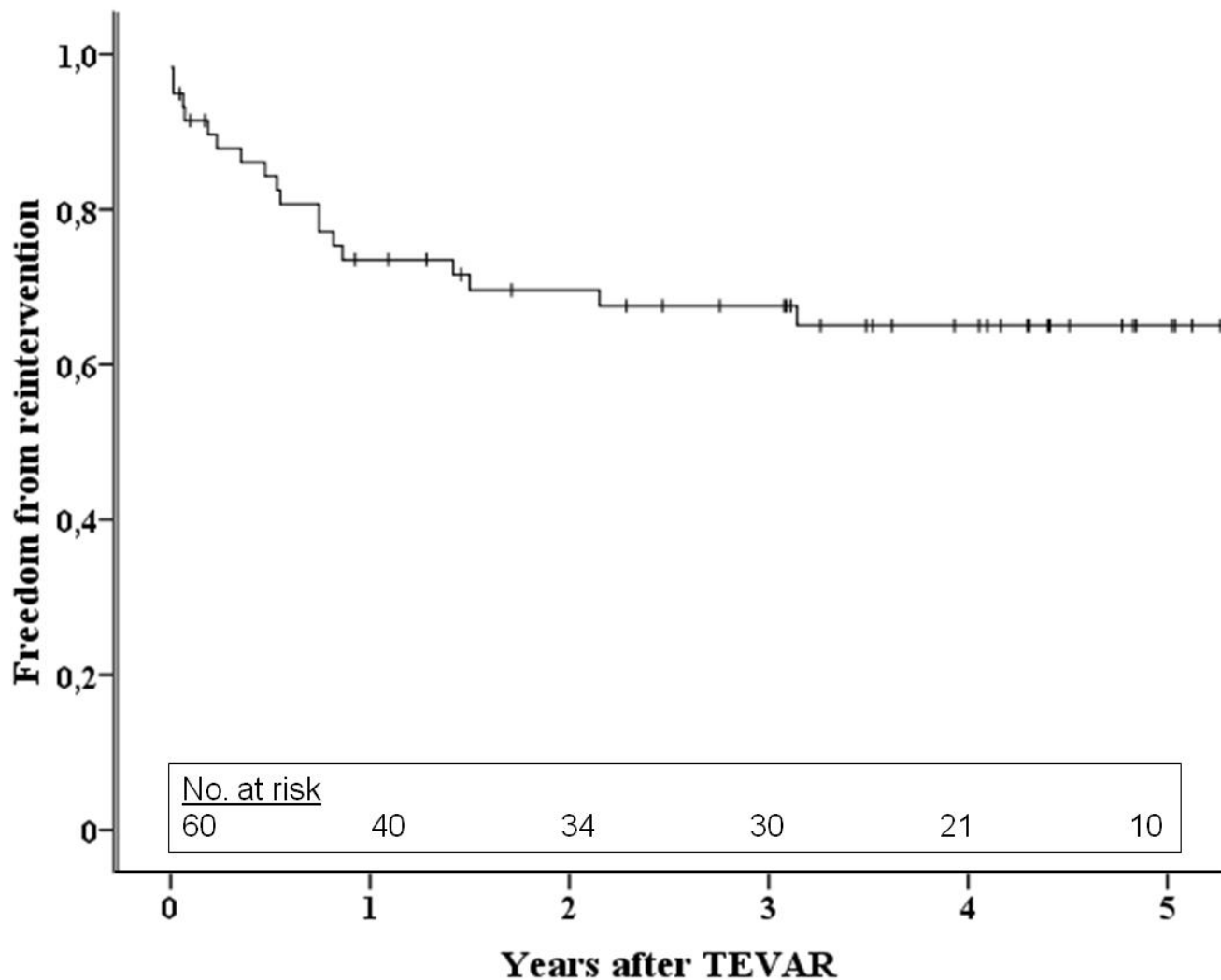
- Cervical debranching* 4
- Renal artery stent-graft 2
- LSA plug 2
- Abdominal EVAR 1
- Palmaz stent 1

** Of 28 patients with LSA coverage without prior revasc: 1 subclavian steal, 1 rest pain, 1 arm claudication*

Median time to first reintervention: 0.5 year (1 day-3.1 years)



Freedom from any reintervention





Endo-leaks and re-intervention

- What can we learn from the EVAR 1 trial long-term data? *N Engl J Med* 2010;362:1863-1871
- Do all endo-leaks require re-intervention? *Circ Cardiovasc Interv* 2009;2(2):105-12
- Factors associated with endo-leak
 - LSA coverage
 - Small radius of aortic arch curvature
 - Bird-beak configuration



Conclusions

- TEVAR treats the life-threatening complications
- Concomitant procedures and later reinterventions may be necessary, in particular in DeBakey type IIIb
- TEVAR contributes to an excellent early, and promising mid- and long-term survival, in acute complicated type B dissection
- The optimal post-procedural surveillance program is yet to be established



Long-term durability

- Given appropriate surveillance
- ...and reinterventions when necessary
- Is quite acceptable and even better than expected

