

Aortic dissection: Where is the important focus during first days/weeks?

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ENDOVASCULAR STENT-GRAFT PLACEMENT FOR THE TREATMENT OF
ACUTE AORTIC DISSECTION

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ABSTRACT

Background The standard treatment for acute aortic dissection is either surgical or medical therapy,

A CUTE aortic dissection is one of the most catastrophic diseases that can affect the aorta. There are 10 to 20 cases per million



*Plus-minus values are means $\pm$ SD. CI denotes confidence interval.

- Feasible
- Safe
- Quick recovery
- Open surgery abandoned

Are we now in the era where
medical management of
acute TBAD is abandoned?

Dake MD, et al. NEJM 1999; 340:1546-1552

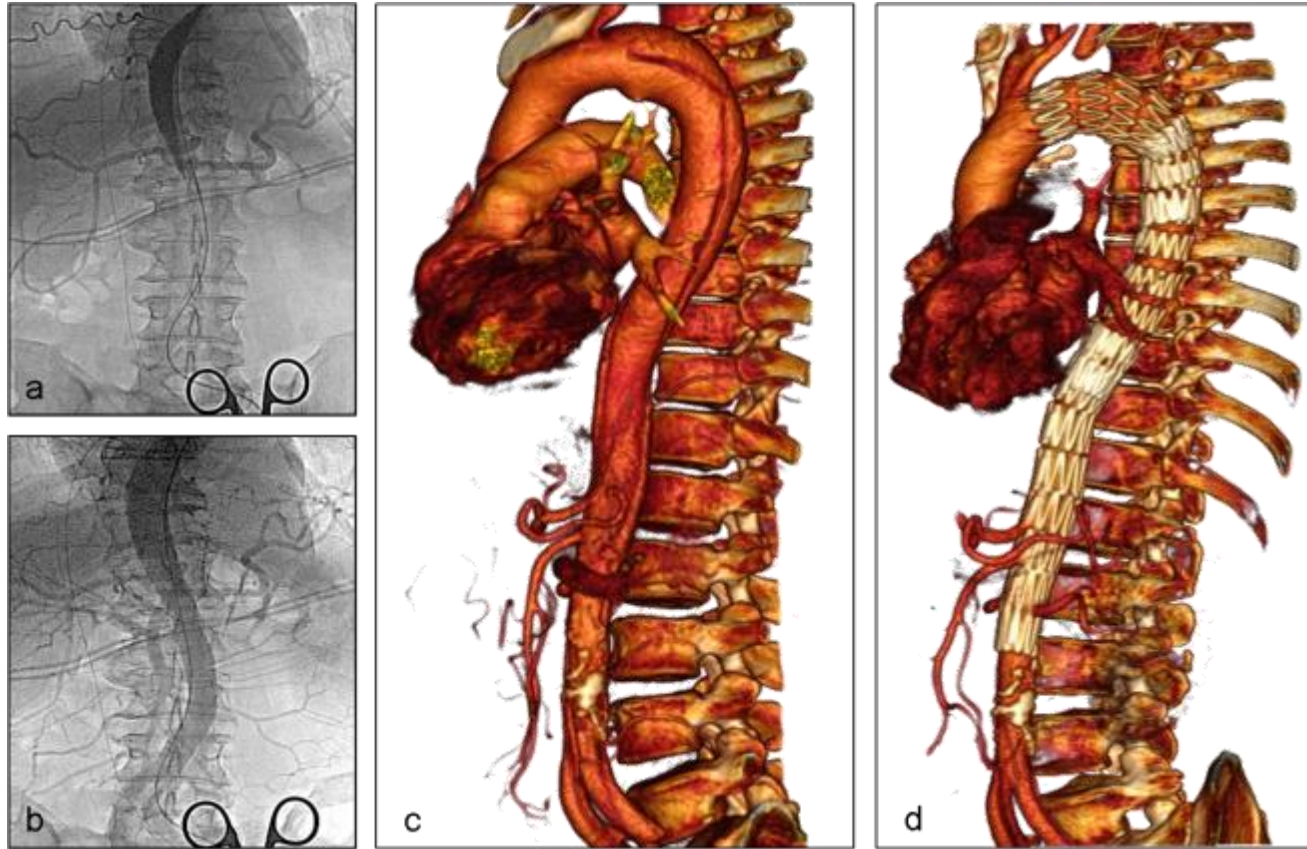
Nienaber CA, Fattori R, Lund G, et al. NEJM 1999; 340:1539-1545

The important areas to focus on during early period

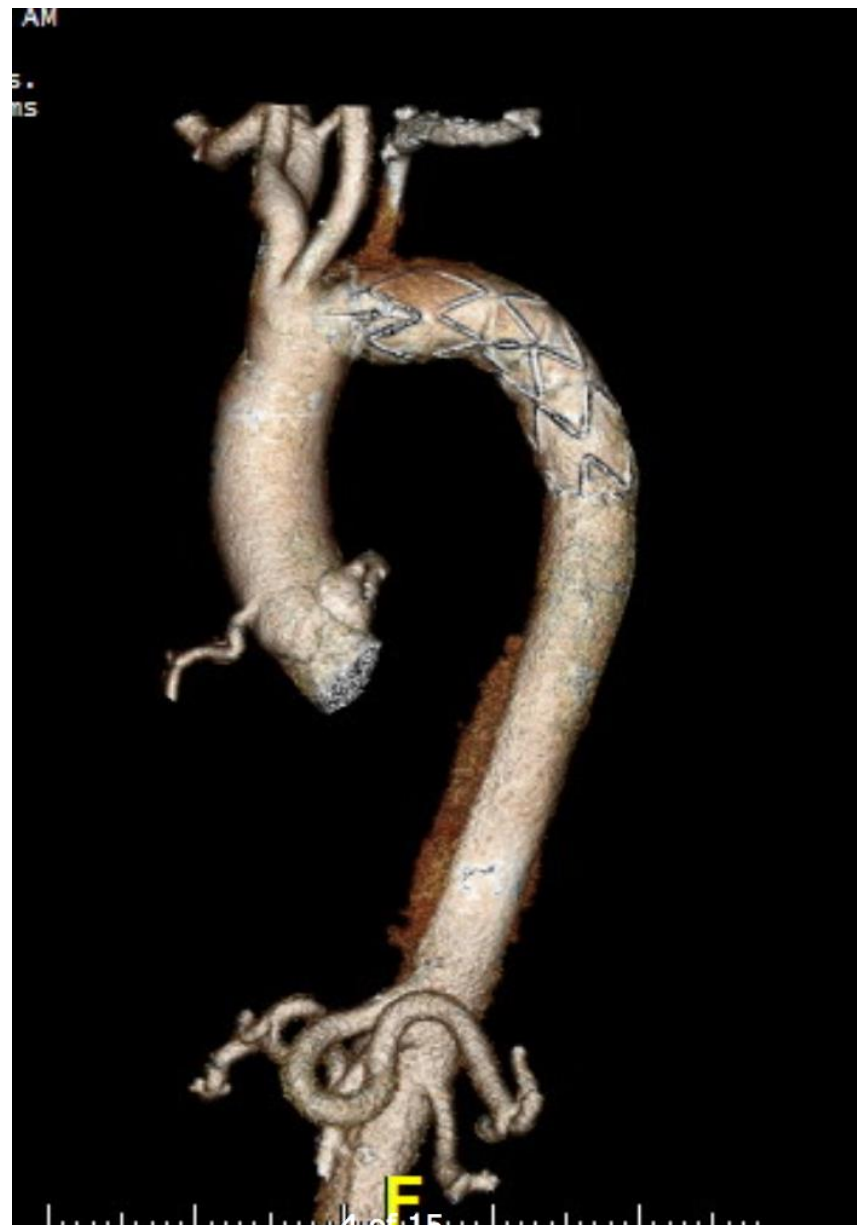
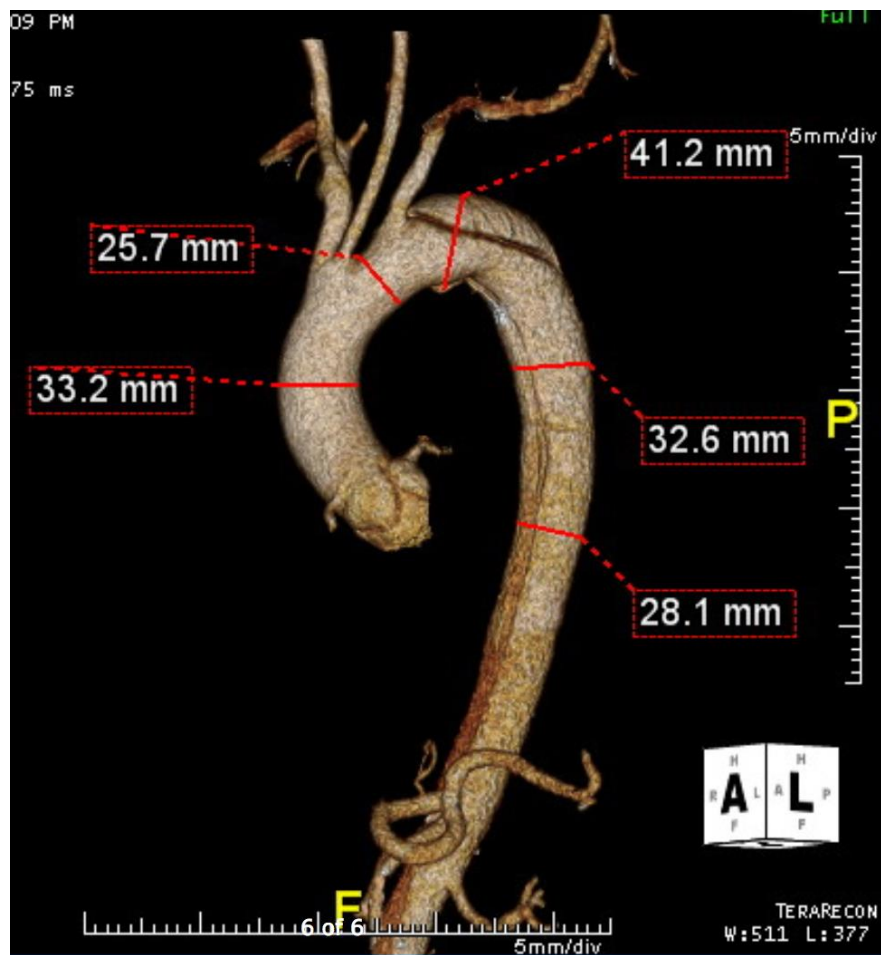
- Stabilise
- Save life & limb
- Diagnose (entry & extent)
- Analyse risk (intervention v no intervention)
- Intervene (Timely and directed)



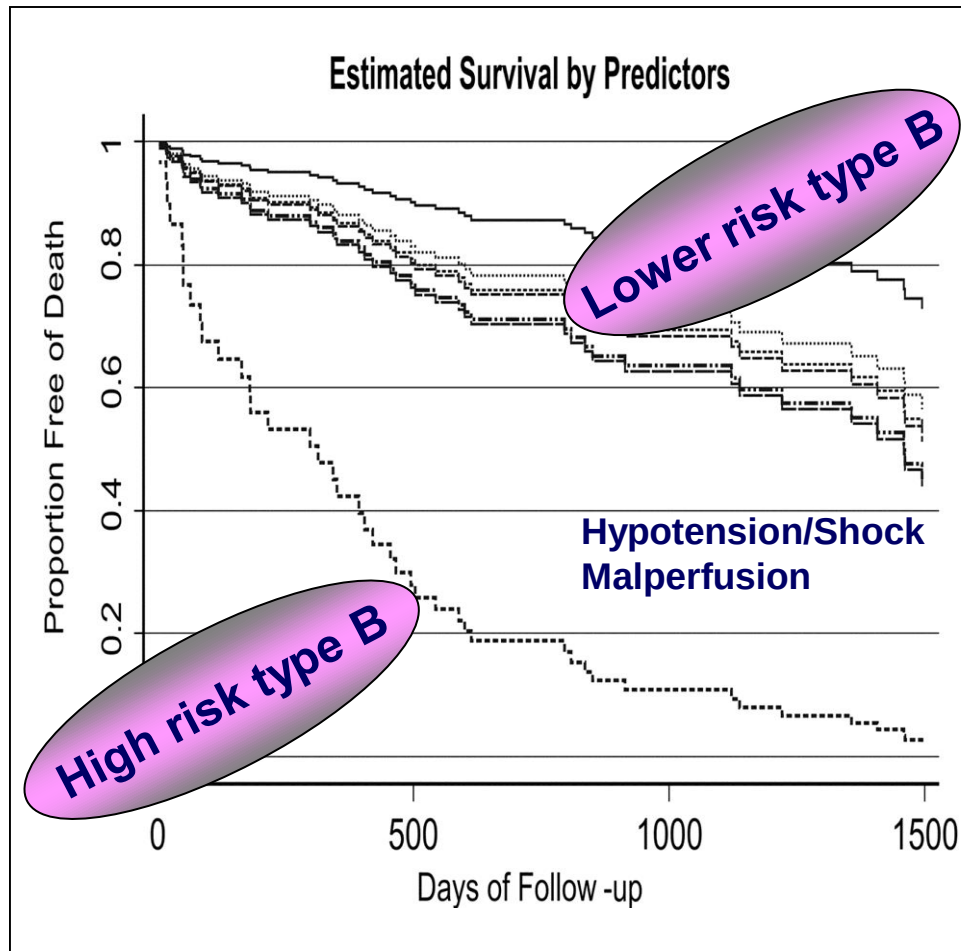
High risk (complicated) group: Lower body malperfusion (ESC IC)



Malperfusion syndrome treated with endovascular stent-graft and PETTICOAT; a) angiography of lower body malperfusion; b) reperfusion after proximal stent-graft; c) 3D CT reconstruction of acute complicated dissection with malperfusion; d) reconstructed aorta and abolished malperfusion after stent-graft and PETTICOAT.



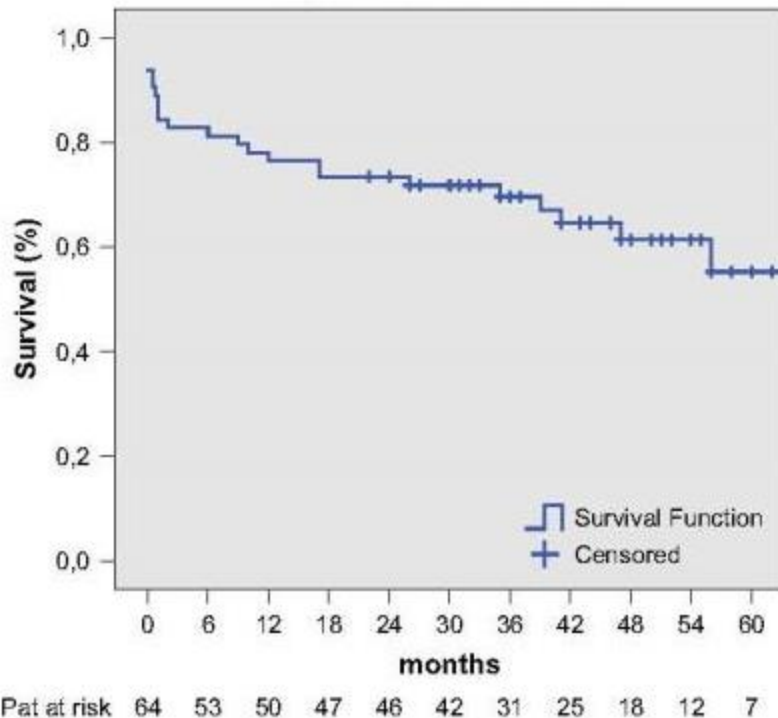
Type B aortic dissection: Survival and predictors



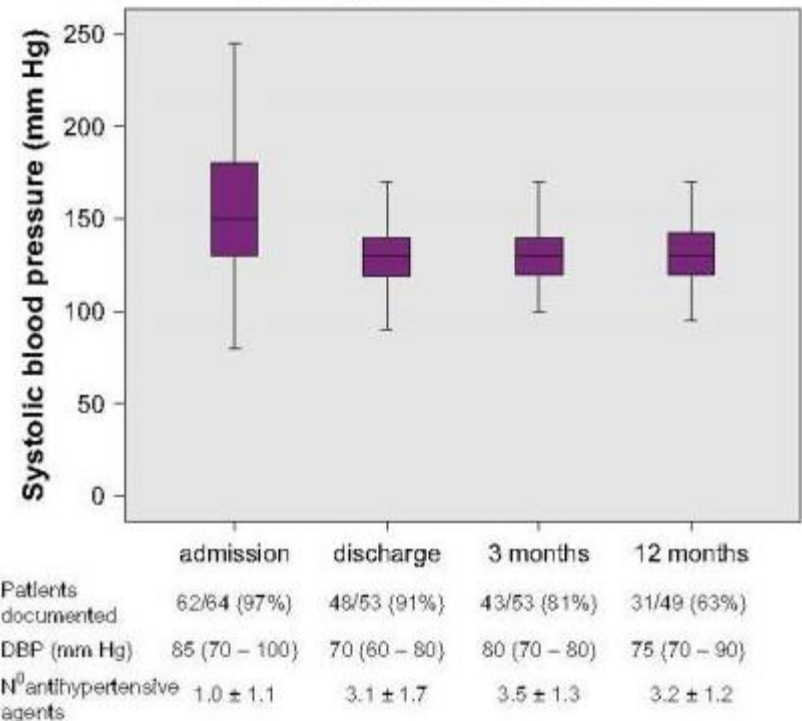
Tsai T, Nienaber C, et al. Circulation 2006, 114:2226-2231

Survival with acute type B aortic dissection on drugs....

Survival in patients with acute type B aortic dissection



Blood pressure in treated patients with acute type B aortic dissection



Peripheral Artery Disease

Endovascular Repair of Type B Aortic Dissection Long-term Results of the Randomized Investigation of Stent Grafts in Aortic Dissection Trial

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Holger Eggebrecht, MD; Tim C. Rehders, MD; Guenther Kundt, MD, PhD; Aenne Glass, MA;
Dierk Scheinert, MD, PhD; Martin Czerny, MD, PhD; Tilo Kleinfeldt, MD;
Burkhard Zipfel, MD; Louis Labrousse, MD; Rossella Fattori, MD, PhD; Hüseyin Ince, MD, PhD;
for the INSTEAD-XL trial

Background—Thoracic endovascular aortic repair (TEVAR) represents a therapeutic concept for type B aortic dissection. Long-term outcomes and morphology after TEVAR for uncomplicated dissection are unknown.

Methods and Results—A total of 140 patients with stable type B aortic dissection previously randomized to optimal medical treatment and TEVAR (n=72) versus optimal medical treatment alone (n=68) were analyzed retrospectively for aorta-specific, all-cause outcomes, and disease progression using landmark statistical analysis of years 2 to 5 after index procedure. Cox regression was used to compare outcomes between groups; all analyses are based on intention to treat. The risk of all-cause mortality (11.1% versus 19.3%; $P=0.13$), aorta-specific mortality (6.9% versus 19.3%; $P=0.04$), and progression (27.0% versus 46.1%; $P=0.04$) after 5 years was lower with TEVAR than with optimal medical treatment alone. Landmark analysis suggested a benefit of TEVAR for all end points between 2 and 5 years; for example, for all-cause mortality (0% versus 16.9%; $P=0.0003$), aorta-specific mortality (0% versus 16.9%; $P=0.0005$), and for progression (4.1% versus 28.1%; $P=0.004$); Landmarking at 1 year and 1 month revealed consistent findings. Both improved survival and less progression of disease at 5 years after elective TEVAR were associated with stent graft induced false lumen thrombosis in 90.6% of cases ($P<0.0001$).

Conclusions—In this study of survivors of type B aortic dissection, TEVAR in addition to optimal medical treatment is associated with improved 5-year aorta-specific survival and delayed disease progression. In stable type B dissection with suitable anatomy, preemptive TEVAR should be considered to improve late outcome.

Clinical Trial Registration—URL: <http://www.clinicaltrials.gov>. Unique identifier: NCT01415804. (*Circ Cardiovasc Interv.* 2013;6:407-416.)

Key Words: aortic dissection ■ aortic remodeling ■ prognosis ■ stent graft

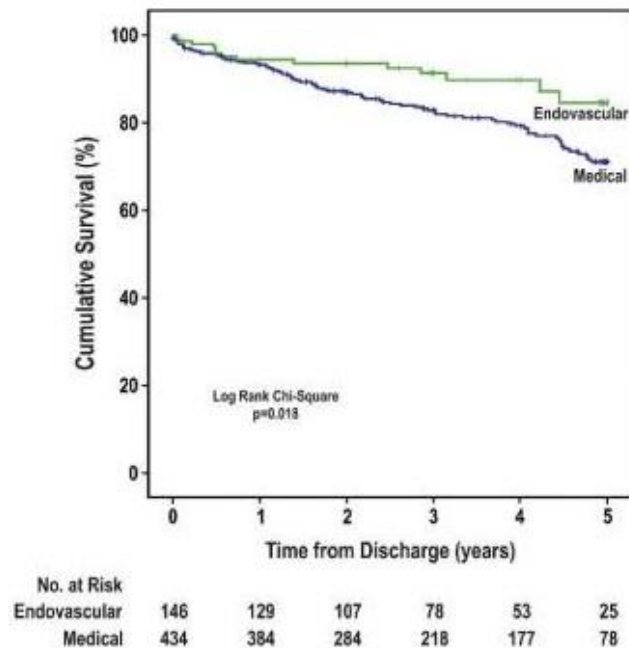
IRAD experience with TEVAR

Survival After Endovascular Therapy in Patients With Type B Aortic Dissection

A Report From the International Registry of Acute Aortic Dissection (IRAD)

Rossella Fattori, MD,* Daniel Montgomery, BS,† Luigi Lovato, MD,† Stephan Kische, MD,§ Marco Di Eusanio, MD,† Hüseyin Ince, MD,§ Kim A. Eagle, MD,† Eric M. Isselbacher, MD,|| Christoph A. Nienaber, MD§

Pesaro and Bologna, Italy; Ann Arbor, Michigan; Rostock, Germany; and Boston, Massachusetts



China: TEVAR for stable dissection

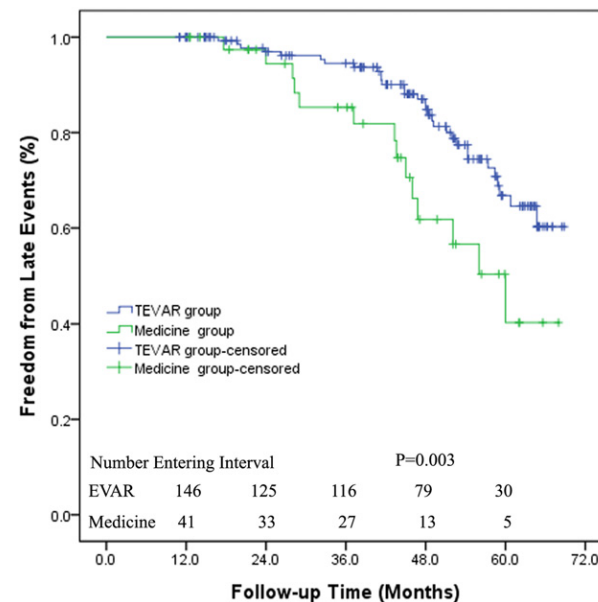
CLINICAL RESEARCH

Treatment of Acute Type-B Aortic Dissection

Thoracic Endovascular Aortic Repair or Medical Management Alone?

Yong-Lin Qin, MD,* Gang Deng, MD,* Tian-Xiao Li, MD,† Weiping Wang, MD,‡ Gao-Jun Teng, MD*

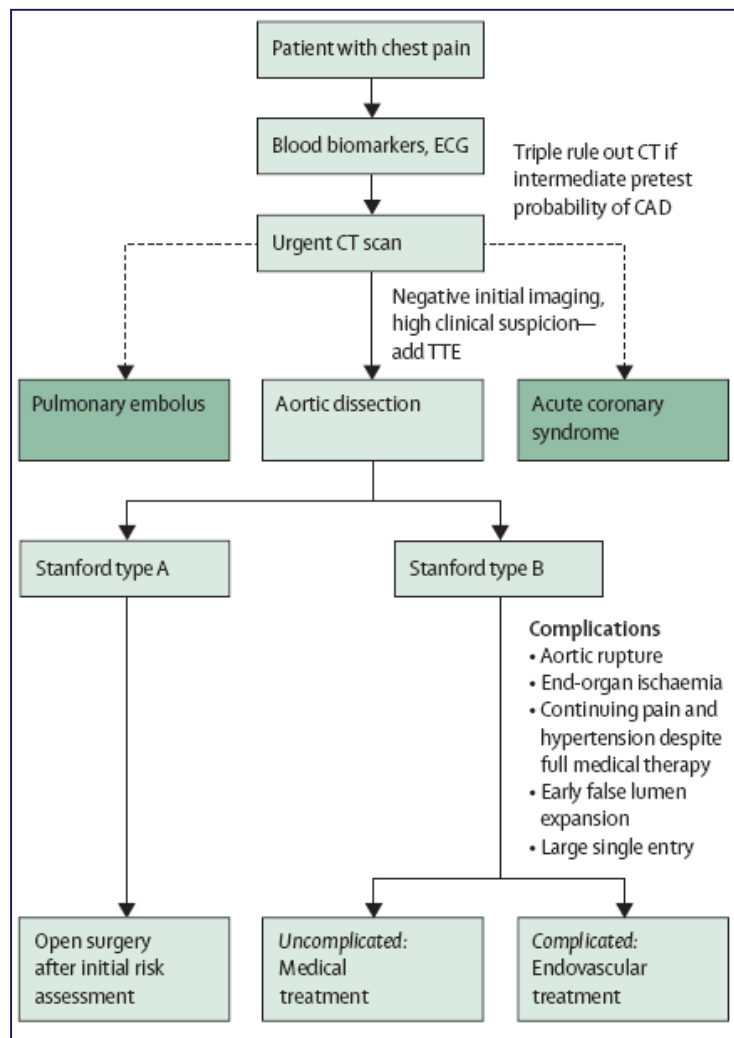
Nanjing and Zhengzhou, China; and Cleveland, Ohio



Kaplan-Meier Curves of Freedom From Late Events After TEVAR of Type-B AAD Patients were subdivided into 2 groups (thoracic endovascular aortic repair [TEVAR] group vs. medicine group), and the cumulative freedom from all post-procedure events was analyzed. AAD acute aortic dissection



Acute Aortic Dissection Therapy 2016





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Royal Brompton & Harefield

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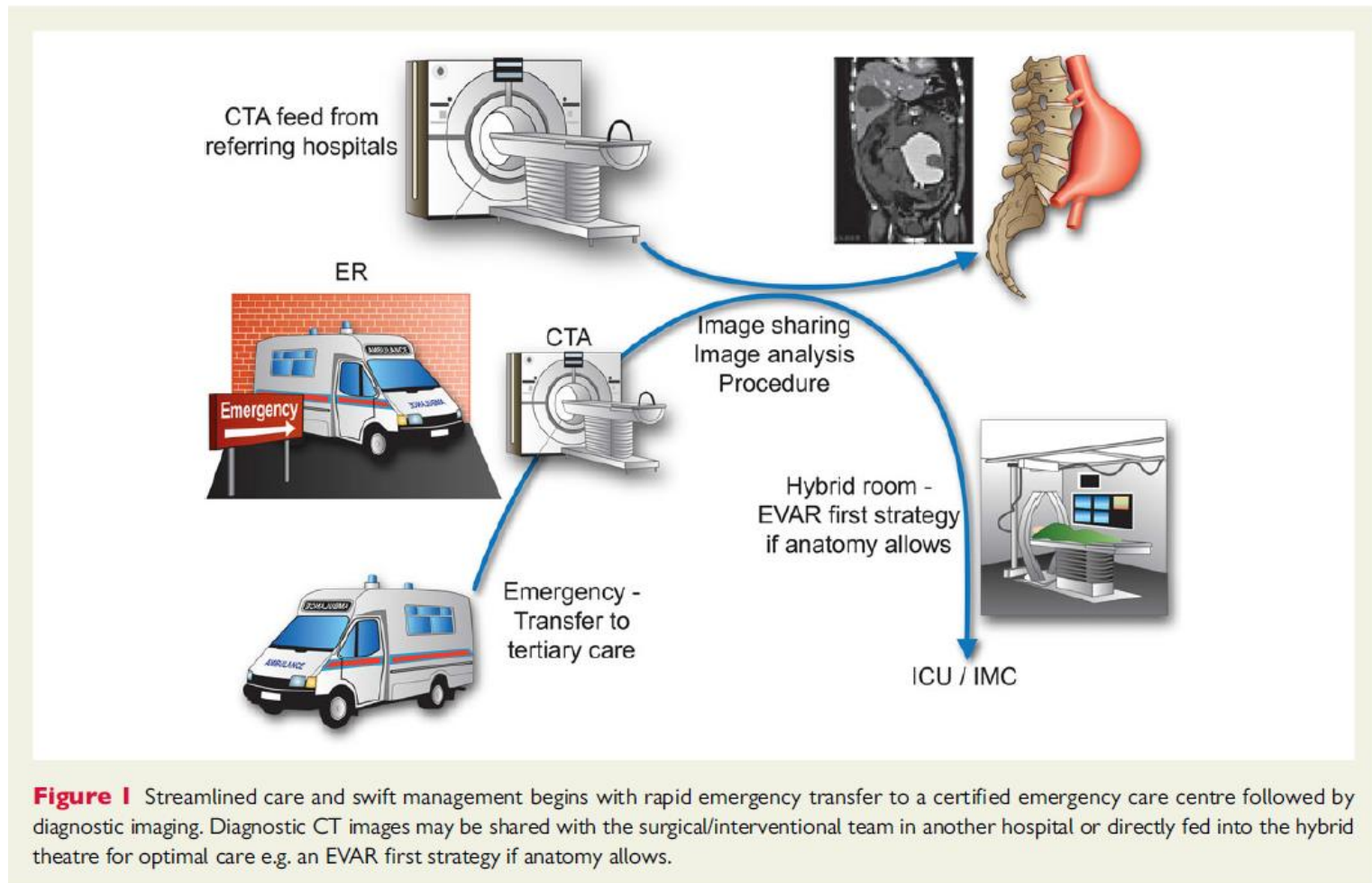


ESC guidelines 2014

Recommended treatment of aortic dissection

Recommendations	Class	Level
In all patients with AD , medical therapy including pain relief and blood pressure control is recommended.	I	C
In patients with type A AD , urgent surgery is recommended.	I	B
In patients with acute type A AD and organ malperfusion , a hybrid approach (i.e. ascending aorta and/or arch replacement associated with any percutaneous aortic or branch artery procedure) should be considered.	IIa	B
In uncomplicated type-B AD , medical therapy should always be recommended.	I	C
In uncomplicated type-B AD , TEVAR should be considered.	IIa	B
In <u>complicated</u> type-B AD , TEVAR is recommended.	I	C
In <u>complicated</u> type-B AD , surgery may be considered.	IIa	C

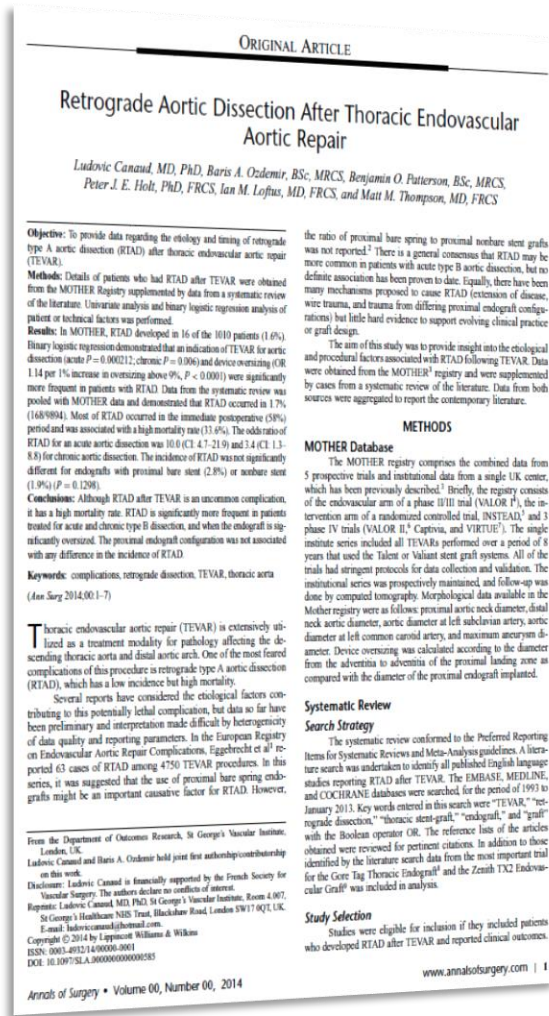
Referral Network Aortic Service (for dissection analogy: rAAA)



Regionalized care offering all treatment options from ascending aorta to distal malperfusion

Improve trial, EHJ 2015

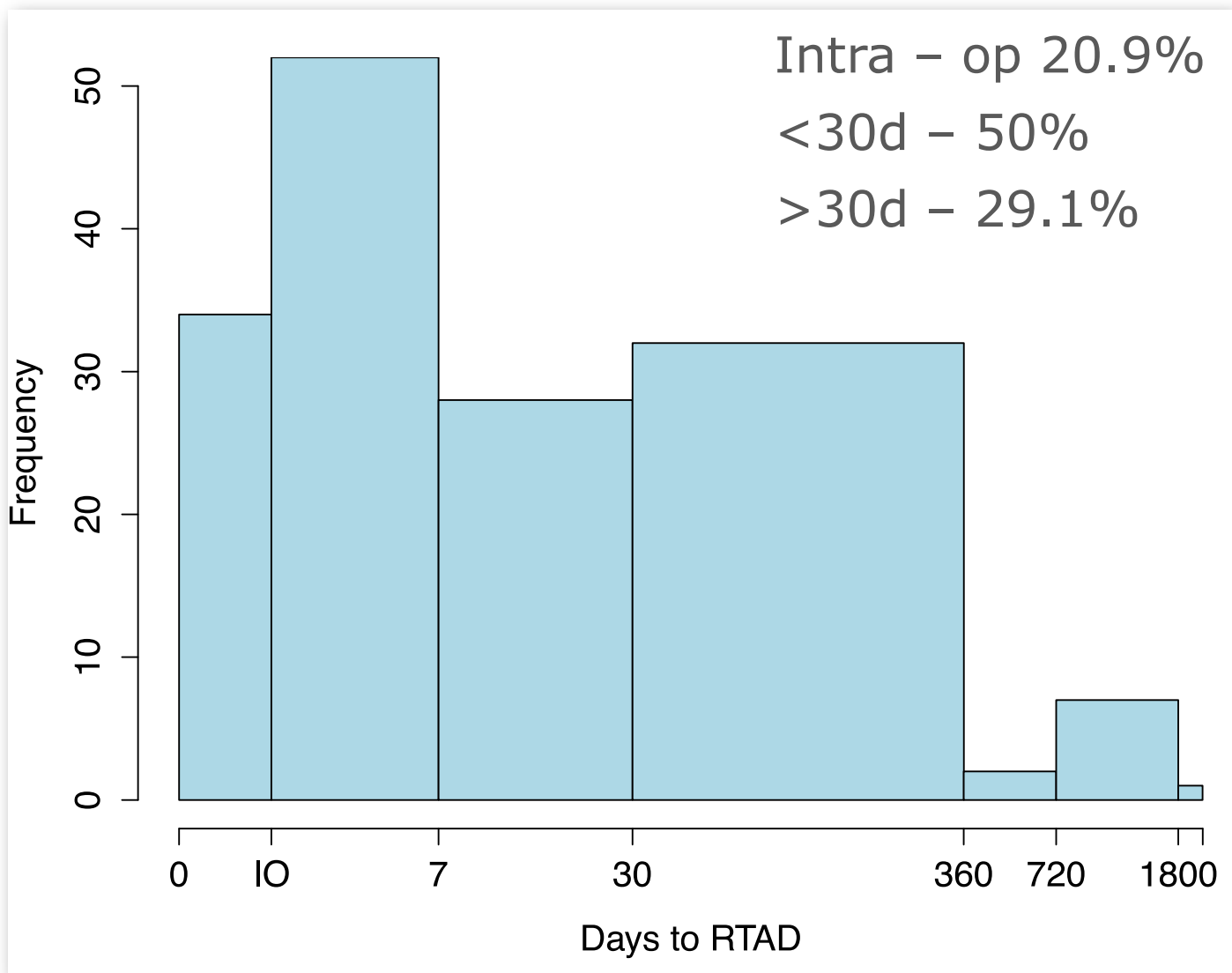
Retrograde Type A Dissection – Systematic Review



- 38 reports: 9894 patients
- Overall incidence 1.7%
- Mortality 33.6%

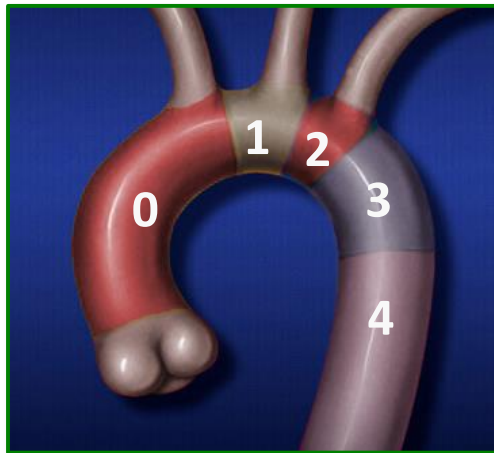


Timing of RTAD



RTAD is dependent on landing zone

Landing Zone	RTAD (%)	OR
0	6.8	5.7
1	2.4	1.9
2	4.1	3.3
3/4	1.3	1



RTAD is Pathology Specific

Incidence of RTAD for specific pathologies:

- TAA: 0.9% [TAT 0%]
- Acute dissection: 8.4%
- Chronic dissection: 3%

OR (relative TAA): 10 AAD/3.4 CAD

Summary

- Care of acute type B dissection continues to develop
 - Growing evidence base for intervention
 - Increasing awareness of ‘complications’
 - Need to manage patients in centre of excellence
- Early days and weeks require focus on
 - Stabilisation and life/organ/limb saving intervention
 - Accurate diagnosis – including complications
 - Assessment of risk
 - Timeliness of intervention

