Type B aortic dissection outcomes: The time has come for a core outcome set — a systematic review

Gabriel Lopez-Pena[1], Kaylee To[2], Matthew Machin[1], Safa Salim[1], Colin Bicknell[1]
[1]Imperial College London, London
[2]Department of Surgery, Amsterdam University Medical Centers, Amsterdam, Netherlands

Background
Type B Aortic Dissection (TBAD) remains a complex condition with no established Core Outcome Set (COS) to standardize clinical research or support decision-making. Existing studies display significant variability in outcome definitions, reporting practices, and follow-up durations, limiting comparability and data synthesis. While optimal TBAD management remains debated, shared decision-making is essential yet patient perspectives are often underrepresented. Most studies emphasize technical success and radiological outcomes from the vascular surgeon's perspective, while overlooking patient-centered metrics. This lack of standardized outcome reporting poses a barrier to generating robust evidence and developing meaningful clinical guidelines.

Objective
To systematically review outcomes reported in TBAD studies as a foundational step toward establishing a COS.

Methods
A systematic review was conducted in accordance with PRISMA guidelines, including studies of all designs that reported outcomes in patients with TBAD treated with medical therapy, thoracic endovascular aortic repair (TEVAR), open surgery, or mixed approaches. Data extracted included study characteristics, treatment modality, follow-up duration, and all reported outcomes.

Results
A total of 153 studies comprising 240,389 patients were included. TEVAR was the most frequently studied treatment (78 studies), followed by mixed strategies (64), medical therapy (10), and one open repair study. Only 58 studies reported follow-up beyond one year. Mortality (105 studies), stroke (86), spinal cord ischemia (71), and renal failure (32) were common outcomes; quality of life was reported in only one study. Outcome reporting was highly variable.

Conclusions
TBAD research emphasizes hard clinical outcomes while neglecting patient-centered measures, highlighting the urgent need for a standardized COS.

Surveillance and follow-up after TEVAR for blunt traumatic thoracic aortic injury: A regional multicentre analysis from West Midlands major trauma centres

Sui Wu Tee[1], Abdelrahman Farrag[2], Sherif Hassan[1], Liu Wing Yan[1], Virginia Summerour[2], Maciej Juszczak[3], Tom Barker[3], Ashraf El-Sharkawy[1]

[1]University Hospital Coventry and Warwickshire NHS Trust, Coventry

[2]University Hospitals of North Midlands NHS Trust, Stoke

[3]University Hospital Birmingham NHS Trust, Birmingham

Background

Blunt traumatic aortic injury (BTAI) is an uncommon but potentially fatal condition, predominantly affecting younger patients with long life expectancy. According to the European Society for Vascular Surgery (ESVS) 2025 Clinical Practice Guidelines, BTAI is classified into three grades: Grade 1 injuries are generally managed non-operatively with blood pressure control and imaging surveillance, whereas Grades 2 and 3 injuries are most commonly treated with thoracic endovascular aortic repair (TEVAR). Given the polytrauma context and early aortic intervention, subsequent surveillance and follow-up may be overlooked during prolonged hospital admissions and thereafter.

Methods

A retrospective regional analysis was performed across all major trauma centres in the West Midlands. We conducted a retrospective audit on patients treated for BTAI between 2012 and 2024, assessing adherence to post-TEVAR imaging surveillance and vascular follow-up.

Results

Eighty-two patients (N=82) underwent TEVAR for BTAI. Median age was 40 years old (IQR 30-55 years old). Indications were Grade 1 injury in 1 patient (1%), Grade 2 in 42 patients (51%), and Grade 3 in 39 patients (48%). Thirty-day mortality was 11% (9/82). Among the 73 survivors, 12 patients (16.4%) had no documented post-procedural surveillance imaging, and 30 patients (41.1%) did not attend any vascular surgery follow-up appointment.

Conclusions

This regional multicentre experience demonstrates poor compliance with post-TEVAR surveillance imaging and follow-up after BTAI. Given the young age and the uncertainty of long-term risks associated with thoracic stent grafts, robust pathways are recommended to improve long-term surveillance and continuity of care in this vulnerable cohort.

Bridging stent patency after inner branch endovascular aneurysm repair

Athena Michaelides, Sandeep Bahia, Noaman Shaikh
Kent & Canterbury Hospital, Canterbury

Background

Fenestrated and branched endovascular aortic repair (FEVAR/BEVAR) are established treatments for complex aortic aneurysms, but long-term outcomes rely on target vessel patency, and data remains limited. This study aimed to evaluate target vessel stability following inner branch endovascular aortic repair (iBEVAR).

Methods

A single-centre retrospective cohort study was performed including all consecutive patients undergoing iBEVAR between February 2022 and January 2026. The primary outcome was target-vessel primary and secondary patency and assessed using computed tomography (CT) angiography at standardised intervals.

Results

Fifty-four patients underwent BEVAR, incorporating 227 target vessels. The cohort was predominantly male (94%) with a mean age of 78 years. Primary target vessel patency was 95%, with 12 occlusions (5%) in 10 patients (19%) involving the renal arteries (n=8), superior mesenteric artery (SMA) (n=2), and the coeliac artery (n=2). These vessels were found to be occluded at a median of 6 months and mean 7.6 months follow-up. Four reinterventions were performed in 3 patients: 3 endovascular renal reinterventions and 1 emergency laparotomy for SMA occlusion with mesenteric ischaemia. Two coeliac occlusions were noted incidentally and required no reintervention.

Conclusions

This cohort study demonstrates excellent target vessel stability and bridging stent patency at mid-term follow-up. Longer-term reporting is required to understand durability over time.

Female turndown for AAA repair- are devices fit for purpose?

Gvantsa Gamtkitsulashvili, Joseph Harker, Dean Godfrey
University Hospital Dorset, Bournemouth

Background

Female outcomes in vascular surgery are known to be poor. Women with abdominal aortic aneurysms (AAA) are more frequently declined elective repair, yet their outcomes—particularly regarding EVAR suitability and rupture prevention—remain unclear. This study reviews that cohort.

Methods

A retrospective single-network review was conducted of female patients declined AAA repair over a six-year period ending in 2023, with virtual follow-up to June 2025. Data were collected from electronic records, imaging systems, and primary care where available. Results are presented as mean and median (IQR). Cause of death data were obtained from coroner and bereavement services when available.

Results

Seventy patients were identified (mean AAA size 7 cm; median age 84.5 years, IQR 79.1–90). Fifty-six had complete datasets. Among 23 patients with sub-threshold AAA (<5.5 cm), only two were EVAR-suitable (neither ruptured). Of the remaining 21, 20 had adverse neck anatomy and one had access issues; 3/21 died from ruptured AAA (rAAA). Among 33 patients with threshold AAA (>5.5 cm), only three were EVAR-suitable; one died from rAAA 30.5 months after turndown (AAA 7.1 cm). All 30 unsuitable patients had adverse neck features; 9/30 died from rAAA.

Conclusions

Women declined AAA repair commonly have anatomy unsuitable for standard EVAR and experience higher rupture rates than matched men. Current EVAR device design may limit treatment options for women and warrants reconsideration.

Duplex Ultrasound after Endo Revascularisation (DUSTER) feasibility randomised controlled trial

Nishita Gadi[1], Alun Davies[2], Steven Rogers[3], Hilary Engward[1], Carmel Moore[1], Jufen Zhang[1], Georgina Beetar[4], Karen Hayden[1], Princess Gabiana[4], Sofia Matias[1], Ankur Thapar[1]

[1]Anglia Ruskin University, Chelmsford

[2]Imperial College, London

[3]University of Manchester, Manchester

[4]Mid and South Essex NHS Foundation Trust, Basildon

Background

This NIHR funded study will investigate the feasibility, acceptability and impact on clinical decision making of a 1- year integrated ultrasound surveillance programme after endovascular therapy for chronic limb threatening ischaemia.

Methods

Phase I is a 3 site, feasibility, open-label, randomised controlled trial. The control arm is standard clinical surveillance by a vascular specialist at 1, 6 and 12 months. The intervention arm will receive 1,6 and 12 month ankle-brachial pressure index, toe pressure and duplex plus standard clinical surveillance. Feasibility outcomes are rates of attendance, completion of ultrasound components and percentage undergoing reintervention for restenosis. Secondary outcomes are limb salvage, amputation-free survival, reasons for amputation, complications, serious adverse events and mortality. Phase II comprises semi-structured interviews in the surveillance arm. Phase III has separate focus groups for participants and clinicians to identify which outcomes matter in future trials.

Results

DUSTER recruited to its sample size of 73 in December 2025 over 9 months. The eligibility rate of those screened was 63% and the participation rate was 65%.

Baseline age was 70 (SD 13), 79% were male and 89% were Caucasian. Rutherford class was 4 in 33%, 5 in 60% and 6 in 7%. Endarterectomy or cutdown was performed in 12%. Baseline EQ5D global health score was 65/100 (SD 22) and Barthel independence levels were 82/100 (SD20).

Conclusions

DUSTER will inform the practice of ultrasound surveillance after lower limb endovascular and is set to report in early 2027.