**Background**

- Medical Rx (MED) has been the gold standard for uncomplicated type B aortic dissection (UTBAD) 1.
- With advent of TEVAR, improved survival was seen with TEVAR compared to MED despite TEVAR being used in mainly complicated cases within IRAD. 2.
- The INSTEAD RCT evaluated subacute to chronic treatment of dissections with TEVAR finding an improved 5 year survival.
- There is little data on real world outcomes for TEVAR in UTBAD particularly in the acute setting.

**Hypothesis**

- Real world long term survival in acute UTBAD will be improved in TEVAR vs. MED.
- Inpatient costs will be greater for TEVAR vs. MED.

**Methods**

- California Office of Statewide Planning and Development Database for Years 2000-2010 was utilized.
- Complicated Type B Dissection was excluded as including the following: Bowel ischemia (ICD-9: 557.9, 785.4) Lower Extremity Ischemia (ICD-9: 459.9) Shock/Adiposis/Gas Gangrene (ICD-9: 40.0, 276.2, 276.4, 276.5, 276.9, 785.4, 785.5, 785.0, 785.1 785.2).
- Statistical Analysis: Bivariate analysis (Χ², t-test, and Fisher’s exact test as appropriate).
- Kaplan Meier survival analysis by treatment.
- Multivariable Cox Regression with model entry Criteria p<0.1.
- Costs were adjusted to 2010 US dollars.

**Results**

- In total, 9,165 subjects met inclusion criteria with 95% treated medically (MED), 2.9% TEVAR, and 2.0% with open surgery (OPEN).
- The mean age was 66 ±12.5 years (MED 66±12, OPEN 62±13, TEVAR 62±14) with a majority being men (61%). White race was most common at 54% with 11% Black, 14% Hispanic, 13% Asian, and 3% Other (Table 1).
- TEVAR patients were more frequently male (72.8% TEVAR vs. 69% MED, P<0.02) less likely to be white (37% TEVAR vs. 59% MED, P<0.03), less likely to have heart failure than medical patients (12% TEVAR vs. 38% MED, P<0.03) and there was a trend towards fewer high Charlson score subjects (12% TEVAR vs. 27%, P<0.06).
- Major complications occurred after MED in 43% (n=1,276) of cases, 71% (n=132) of OPEN cases, and 55% (n=146) of TEVAR cases, P<0.03. Paraplegia rates were similar between MED and TEVAR at 2.9% and 3.4% respectively, with highest after OPEN at 3.6% (P=0.3). Respiratory, hemorrhagic, and septic complications were lowest in MED (Table 3).
- Overall inpatient mortality for MED was 6.3%, for OPEN was 14%, and for TEVAR was 7.1%, P<0.01. Inpatient mortality within 24 hours was highest after MED at 7.1% (n=23), and lowest after TEVAR at 1.1% (n=9). Length of stay in MED was 6.7 (8.3) days, in OPEN was 15 (35) days, and in TEVAR was 12 (30) days.
- Mean cost was greatest following OPEN at $200,000 ($198,000), with MED costs at $98,000 ($98,000), and TEVAR at $130,000 ($130,000) (Table 3).
- Upon Kaplan-Meier analysis TEVAR was associated with improved survival P<0.01 (Figure 1).
- On multivariable Cox proportional hazards model TEVAR continued to be associated with improved survival compared to MED HR=0.68 (CI:0.55-0.83, P<0.01). Factors associated with worse survival included heart failure HR:1.4 (CI:1.3-1.2), P<0.01, cocaine use HR: 1.2 (CI:1.1-1.4, P<0.01), age (reference <49 years(y); 50-69y HR: 1.14, P<0.01, ≥70y HR: 3.2, CI: 2.7-3.8, P<0.01), Charlson scoring (CI: 2.1-2.5, P<0.02), and adverse renal function (CI: 2.1-2.5, P<0.02). Survival at 1, 3, and 5 years were as follows: MED: 75.0%, 68.3%, 63.8%; OPEN: 75.7%, 68.7%, 66.7%; and for TEVAR: 85.9%, 78.6%, 75.9%. Median follow up time for MED was 2.3 years, 2.5 years in TEVAR, and 2.3 years in OPEN.

**Conclusions**

- INSTEAD findings corroborated in real world setting.
- TEVAR associated with improved long-term survival in acute UTBAD suggesting these patients may benefit from early TEVAR.
- In-patient costs are higher for TEVAR although long-term cost-effectiveness analysis necessary.

**References**

4. Connole et al. Late Aortic Remodeling Periotes in the Stented Segment after Endovascular Repair of Acute Complicated Type B Aortic Dissection. JVS, Sep 2015