TRANSACTILIC DEBATE: WHETHER LEVEL I EVIDENCE COMPARING THORACIC ENDOVASCULAR REPAIR AND MEDICAL MANAGEMENT IS NECESSARY FOR UNCOMPLICATED TYPE B AORTIC DISSECTIONS

Thoracic endovascular repair (TEVAR) has not yet demonstrated superiority over medical treatment for patients with uncomplicated type B aortic dissection (BAD). In this clinical setting, rupture is uncommon except in cases with a large aneurysm at the entry site or large false lumen dilatation. However, aortic branch occlusion by the propagation of the false lumen and subsequent malperfusion syndrome may complicate the initial presentation. Until now a complication-specific approach has been adopted as the standard of care, but endovascular treatment (TEVAR) sealing the aortic tear and achieving depressurization of the false lumen has the potential to reduce both early and late complications, and to change treatment strategies. However, as explained by our debaters, many questions remain, and it is not clear if we need more evidence before accepting TEVAR as routine in patients with uncomplicated BAD.

UNCOMPPLICATED ACUTE BAD

Meta-analysis of three studies comparing medical therapy and TEVAR for acute uncomplicated BAD found a lower early mortality rate with medical therapy compared with TEVAR (odds-ratio [OR]: 0.50; 95% confidence interval [CI]: 0.27—0.95). In three other studies comparing TEVAR and open surgery, the pooled early mortality rate was significantly higher for open surgery (OR: 2.66; 95% CI: 1.37—5.17). However, in these non-randomized studies, comparison of medical therapy versus TEVAR or versus open surgery for acute uncomplicated BAD is often biased with an overestimation of low complication rates in patients at lower risk and usually assigned to medical therapy. Nevertheless, according to these data, there is evidence, although not from level I studies, that patients with uncomplicated acute BAD do well with medical treatment alone. This strategy was debated by Jan Brunkwall, who supports the use of TEVAR in acute BAD following data from the Acute Dissection Stent-graft Or Best medical treatment (ADSORB) study, which showed that TEVAR allows true lumen expansion. However, in this trial low recruitment resulted in an underpowered study not being able to demonstrate a potential difference in mortality between the two groups.

UNCOMPPLICATED CHRONIC BAD

Regarding chronic BAD, the Investigation of STEnt Grafts in Aortic Dissection (INSTEAD) randomized controlled trial (RCT) showed that medical therapy with close surveillance was associated with excellent all-cause and aorta-related survival rates that were not improved by TEVAR. In detail, the survival rate at 2 years was 88.9% ± 3.7% with TEVAR versus 95.6% ± 2.5% with medical treatment (p = .18). Similarly, the aorta-related 2-year survival was comparable among the two groups. As discussed by our debaters, with 11 deaths, the 2-year death rate did not meet the assumption of 28 events for statistical power. Finally, the cluster end-point of aorta-related death, crossover/conversion, and ancillary procedures was not statistically different between the two groups with freedom from event in 107.5% ± 5.5% of the patients with medical treatment versus 77.2% ± 5.0% for TEVAR (p = .65). It should be emphasized that in this RCT, most patients were randomized 2 weeks after the onset of symptoms, thus those with early complications, who would most likely benefit from TEVAR, were not included in the study cohort. In addition, among the seven patients who died in the TEVAR group, four of them with malperfusion or impending rupture should have been excluded from this RCT aimed at elective management of uncomplicated chronic BAD. Despite these criticisms, INSTEAD—the only RCT for chronic BAD—supports a complication-specific approach instead of the routine use of TEVAR. However, some encouraging data were also reported in this trial, which showed aortic remodeling at 2 years with true lumen recovery and false lumen thrombosis in 91.3% of patients receiving TEVAR versus 19.4% of patients in the medical group. This was not the endpoint of the study, but aortic remodeling may be considered as a surrogate for prevention of late aneurysm formation.

After an extensive review of the literature, our debaters proposed different strategies, and we suggest that medical management with close imaging follow-up is probably the best strategy for uncomplicated BAD. However, as demonstrated by this debate, the evidence favoring this strategy is limited. Considering the lack of power of the ADSORB and INSTEAD trials, we need large studies stratified by type and timing with long-term follow-up to provide optimal treatment guidelines.

REFERENCES


J.-B. Ricco*

*Debate Section Editor, European Journal of Vascular and Endovascular Surgery, Poitiers, France*

T.L. Forbes

*Debate Section Editor, Journal of Vascular Surgery, London, Ontario, Canada*

*Corresponding author. J.-B. Ricco, Jean Bernard Hospital, University of Poitiers, Poitiers 86021, France. Email-address: jeanbaptistericco@gmail.com (J.-B. Ricco)