

Favourable Neurological Outcomes in Thoracic Endovascular Aortic Repair with RELAY Branched – An International Perspective

Matti Jubouri¹, Sven Zhen Cian Patrick Tan², Abedalaziz Surkhi³, Sidhant Singh², Damian Bailey⁴, Ian Williams⁵, and mohamad bashir⁶

¹Hull York Medical School

²Queen Mary University of London Barts and The London School of Medicine and Dentistry

³Al Quds University Faculty of Medicine

⁴University of South Wales Faculty of Life Sciences and Education

⁵University Hospital of Wales

⁶NHS Wales Health Education and Improvement Wales

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Abstract

Background While open surgical repair continues to be the mainstay option for aortic arch reconstruction, the associated mortality, morbidity, and high turn-down rates have led to a need for the development of minimally invasive options for aortic arch repair. Though RELAY Branched (Terumo Aortic, Inchinnan, UK) represents a promising option for complex endovascular aortic arch repair, neurological complications remain a pertinent risk. Herein we seek to present multi-centre data from Europe documenting the neurological outcomes associated with RELAY Branched. **Methods** Prospective data collected between January 2019 and January 2022 associated with patients treated with RELAY single-, double-, and triple-branched endoprostheses from centres across Europe was retrospectively analysed with descriptive and distributive analysis. Follow up data from 30 days and 6-, 12-, and 24 months postoperatively was included. Patients follow up was evaluated for the onset of disabling stroke (DS) and non-disabling stroke (NDS). **Results** Technical success was achieved in 147 (99.3%) cases. Over 24 months period, in total, 6 (4.1%) patients suffered DS and 8 (5.4%) patients suffered NDS after undergoing aortic arch repair with RELAY. All patients that developed postoperative DS had been treated with the double-branched RELAY endoprosthesis. **Discussion** The data presented herein demonstrates that RELAY Branched is associated with favourable neurological outcomes and excellent technical success rates. Key design features of the endoprosthesis and good perioperative management can contribute greatly to mitigating neurological complications following endovascular aortic arch repair.

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