Thoracic endovascular aortic repair (TEVAR) initially developed for the treatment of degenerative aneurysms of the descending thoracic aorta, has been applied to the entire spectrum of descending thoracic aortic pathology including emergent settings.

Last year in our institution, three patients with an average age of 46.6 years (range 39-55) underwent emergent TEVAR for acute aortic injury during traffic accident; two in the car, and one on the motorcycle. The technical success rate was 100%. A standard Medtronic thoracic aortic stent graft VALIANT was used. There was no procedure-related complications: no stroke, spinal cord ischemia, or complications connected with vascular access. In all three cases graft was positioned bellow left subclavian artery. All three patients had polytrauma, and after successful graft implantation underwent other surgical procedures (ruptured diaphragm, subdural hematoma, multiple pelvic fractures).

Fortunately all three patients overcome their complicated medical conditions. The control MSCT of aorta, before hospital discharge, has shown widely patent stent grafts with no migration and no change in the configuration.

After 1 year, 8 month and 6 month of follow up, our patients confirm that TEVAR is a reliable method for the treatment of traumatic thoracic aortic injuries, even favorable in comparison with historical open surgery, with good results in the short- and medium-term follow-up.

**KEYWORDS:** thoracic aorta, endovascular repair, thoracic stent graft, traumatic aortic injury.

**Literature**