

**ABSTRACT**

**Title:** Analysis of the results of thoracoabdominal aneurysms treatment.

**Introduction:** Endovascular treatment of thoracoabdominal aneurysms is a less invasive method of treatment compared to open surgery and therefore ensures lower mortality and a lower rate of complications.

**Objective:** The aim of the study was to evaluate the early results of endovascular treatment of thoracoabdominal aneurysms using a branched stent-graft.

**Methods:** A two-center, retrospective analysis was performed of over 500 patients treated with t-Branch stent-graft (Cook Medical, Bloomington, IN) for thoracoabdominal aortic aneurysm from 2014–2019.

The primary endpoints were: technical success and early mortality, and the secondary endpoints were complication rates and target vascular patency.

Multivariate regression models were used to determine the independent association of risk factors with mortality and spinal cord ischemia.

Additionally, a retrospective analysis of the results of endovascular treatment of patients with aneurysm in the visceral or intercostal patch after open repair of a thoracoabdominal aneurysm was performed, which required, due to the limited number of these patients in both centers, the inclusion of 28 patients from 7 additional hospitals to obtain adequate statistical power.

**Results:** 542 patients were included in the study, including 388 men (72%) and 154 women (28%). The technical success rate was 97% (526/542). Overall 30-day mortality was 12.3% (8.5% for elective, 15% for symptomatic, and 30% for limited rupture). Multivariate regression analysis showed an association of the mortality rate with older age and a lower baseline glomerular filtration rate. The rate of spinal cord ischemia was 10.5% (6.5% transient, 4% permanent). The incidence of renal failure was 13%, stroke 2.5%, myocardial infarction 1.8% and access-related complications 7.7%. The primary patency rate of the right renal artery was 99.6%, the left renal artery was 100%, the superior mesenteric artery was 99.4%, and the celiac trunk was 99.8%.

Multivariate analysis did not show that gender was an independent predictor of complications.

An analysis of the outcomes of visceral/intercostal patch aneurysm treatment in 29 patients showed 100% technical success, 0% early (30-day) mortality, and an overall minor complication rate of 17% (5 patients).

**Conclusions:** The use of t-Branch stent-graft with branches to visceral arteries is an effective method of treating thoracoabdominal aneurysms in urgent and planned cases, with low mortality and an acceptable rate of complications.