

Long-term Outcomes of Treatment with Different Stent Grafts in Acute DeBakey Type I Aortic Dissection

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Abstract

Background: We developed an integrated triple-branched stent to treat acute DeBakey type I aortic dissection and modified it to enhance its adaptability. However, whether the patients treated by the modified stent would achieve better long-term prognosis is unknown. **Methods:** This study enrolled 147 patients with acute DeBakey type I aortic dissection. The original integrated triple-branched stents were used in 57 patients (group A) between July 2012 and August 2013, and the modified stents in 90 patients (group B) between September 2013 and March 2015. Clinical characteristics, surgical data, postoperative complications, mortality, and follow-up data of the two groups were analyzed. **Results:** The two groups presented comparable early death rate (group A=7.0%, group B=5.9%, $p=0.719$). The incidence of postoperative acute kidney injury was lower in group B (10.0%) vs group A (24.6%) ($p=0.018$). Compared with the original integrated triple-branched stent graft, the modified stent could reduce the risk of early postoperative acute kidney injury [OR (95%CI)=0.36(0.14, 0.94)]. Early endoleak rate was lower in group B (1.0%) vs group A (9.4%) ($p=0.004$). During follow-up, there were five deaths in group A (9.4%) and six deaths in group B (7.2%) ($p=0.646$). Chronic kidney injury (7.5% vs 3.6%, $p=0.311$), delayed endoleak (11.3% vs 4.8%, $p=0.157$), and late reinterventions (7.5% vs 2.4%, $p=0.155$) in the two groups were similar. **Conclusions:** In patients with acute DeBakey type I aortic dissection, the modified stent could provide feasible and safe treatment outcomes, with better protection of kidney function and reduced early endoleak. However, they had similar long-term effects.

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