Long-term results of bare metal stents and frozen elephant trunk prosthesis using in aortic dissection surgery

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Aim. Comparative assessment of long-term results of bare metal stents and frozen elephant trunk prosthesis using in aortic dissection I DeBakey type.

Methods. The retrospective comparative evaluation of different surgery results (2001–2017) in 213 patients with DeBakey type I aortic dissection was performed. Patients was divided in to 3 groups: Group 1 — standard treatment (hemiarch or total arch replacement) (n = 121), Group 2 — arch reconstruction with bare metal stent (n = 55), Group 3 — arch reconstruction with frozen elephant trunk prosthesis (n = 37). For groups equation we used propensity score matching analysis (PSM).

Results. A pairwise comparison with the formation of three groups equated by the PSM method was performed. Long-term mortality in PSM 1 was 88 [82; 96] % (Group 1) и 89 [79; 100] % — (Group 2) respectively (p = 0.893). Long-term mortality in PSM 2 was 85 [71; 100] % in Group 1 and 94 [84; 100] % — Group 3 respectively (p = 0.342). Long-term mortality in PSM 3 was 88 [77; 100] % in Group 2 и 80 [64; 100] % — Group 3 respectively (p = 0.457). Freedom from aortic and mortality events (surrogate end point) in PSM 1 was 68% and 75% (p>0.999), PSM 2 was 50% and 100% (p = 0.006), PSM 3 was 73% and 89% (p = 0.22).

Conclusion. There were no any statistical differences in long-term mortality and in surrogate end point (aortic events and mortality) between groups, but there was a trend to better results in Group 3.

Keywords: aortic dissection; frozen elephant trunk; prosthesis; propensity score; stents

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