Transfemoral Versus Conventional Aortic Valve Implantation - Early Postoperative Cognitive Outcome -

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Objectives
Reduction of cognitive function is a possible side effect after cardiac surgery. We investigated the effect of transfemoral versus conventional aortic valve replacement on cognitive performance early after surgery.

Methods
50 patients with transfemoral, catheter-based aortic valve implantations were compared to 50 patients with conventional surgical aortic valve replacement. Six neuropsychological subtests from the Syndrom Kurz Test and Alzheimer's Disease Assessment Scale were performed preoperatively and on the third postoperative day in a double blind fashion. To assess the overall cognitive function and the degree of cognitive change across all tests after surgery we combined the six test-scores by principal component analysis.

Results
The preoperative (S(pre)), as well as postoperative (S(post)) overall cognitive function scores, were not significantly different between the groups and showed deterioration within both groups (S(pre) conv. 0.2 ± 1.0 vs S(post) conv. -0.6 ± 1.1, p <0.0005 and S(pre) transfem. -0.2 ± 1.0 vs S(post) transfem. -0.6 ± 1.1, p = 0.002). This decline (S(pre) -S(post)) was not associated with the type of operation (p = 0.1).

Conclusion
Transfemoral aortic valve implantation has no cerebroprotective advantage since it leads also to an early postoperative decline of neuropsychological abilities, which is comparable to conventional aortic valve replacement.

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