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Heart Failure

IMPROVED CLINICAL OUTCOME FOLLOWING A MINIMALLY INVASIVE IMPLANTATION TECHNIQUE FOR LEFT VENTRICULAR ASSIST DEVICES IMPLANTATION IN ADULTS WITH SEVERE HEART FAILURE

Moderated Poster Contributions
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Authors: *Sebastian Vicente Rojas, Murat Avsar, Jasmin S. Hanke, Lena Fischer, Laura Repges, Anke Meyer, Tobias Thoms, Bernhard Fleischer, Bettina Wiegmann, Ingo Kutschka, Martin Strüber, Axel Haverich, Jan D. Schmitto, Department of Cardiothoracic-, Transplantation- and Vascular Surgery, Hannover Medical School, Hannover, Germany*

Background: Left ventricular assist devices (LVAD) are gaining more importance in the treatment of severe heart failure. The constant development of novel technologies in this field is being reflected by enhanced and considerably miniaturized LVAD-systems. However from a surgical point of view, complications like bleeding or right ventricular failure with liver impairment are still major hurdles in LVAD-therapy. Therefore, we recently developed a novel minimally invasive LVAD implantation technique in order to minimize complication rates and improve the operative outcome.

Methods: We reviewed the data of 100 consecutive end-stage heart failure patients (88% male, age 54,2 ± 12,8, DCM 58%, ICM 42%) who recently underwent LVAD implantation (HVAD, HeartWare) in our institution. Patients who were operated conventionally by a median sternotomy (group A; n = 50) were compared to patients receiving a minimal invasive upper hemisternotomy combined with an anterolateral thoracotomy (group B; n = 50).

Results: Intra-hospital-mortality was lower in group B (12,3% vs. 8,6%). ICU stay was significantly lower ($p < 0,05$) in group B (20,2 ± 4,9 days vs. 9,8 ± 2,7 days). Bleeding incidence was also significantly ($p < 0,05$) lower in group B (18.5% vs. 5,7%). Postoperative glutamate dehydrogenase (GLDH) levels were also significantly ($p < 0,05$) lower in group B (76,2 ± 238,5 U/L vs. 15,5 ± 52,1 U/L). None of the patients had a pump thrombosis.

Conclusions: Our data show that the applied minimally invasive LVAD-implantation technique improves the early postoperative outcome by improving survival and reducing bleeding events, liver impairment and postoperative ICU stay of terminal heart failure patients.