

BERLIN HEART EXCOR® BVAD

CASE REPORT

BRIDGE TO TRANSPLANTATION

Case Example

This report details the case of Mr. H., whose life became acutely dependent on ventricular assist devices in the medium term following his very severe heart failure. The difficult period of time prior to heart transplantation was able to be successfully bridged using the Berlin Heart EXCOR® BVAD.

Case History

The patient M.H., who is now 43 years old, had suffered from a mitral valve prolapse for approximately 20 years. This led to a severe mitral valve failure, which became symptomatic at the beginning of March 2019. At this time, the biventricular pumping function of the heart was retained.

Therapy and postoperative course

The surgical reconstruction of the valve took place on 6th May 2019 (annuloplasty, cusp and chordae reconstruction). Postoperatively, persistent ventricular fibrillation and prolonged medicinal and mechanical resuscitation occurred. The coronary status was normal at this point, the TEE showed an extremely reduced LVEF, as well as paradoxical posterior wall and septal motions with akinesia. Due to additionally increasing right heart decompensation, a VA-ECMO was implanted as an emergency short-term solution.

Bridge to Transplant

Several weaning attempts from ECMO were unsuccessful due to incipient multiple organ dysfunction syndrome (heart, kidneys, liver, lungs) and high catecholamine support. Due to persistent biventricular failure (EF: 10-15% TAPSE 7mm), Mr. H. was put on the high-priority list for heart transplantation on May 16th. The increasing complications with the ECMO necessitated a change of the support strategy at the same time. After a total of 29 days of ECMO, a medium- to long-term ventricular assist device was needed, which could bridge the unknown period of time until transplantation would be possible.



Heart Failure

Advanced decompensated heart failure is a serious, life-threatening disease that cannot be adequately treated with medication in its final stage. The final stage in therapy of heart failure is the use of ventricular assist devices.

Use and clinical course of the Berlin Heart BVAD system

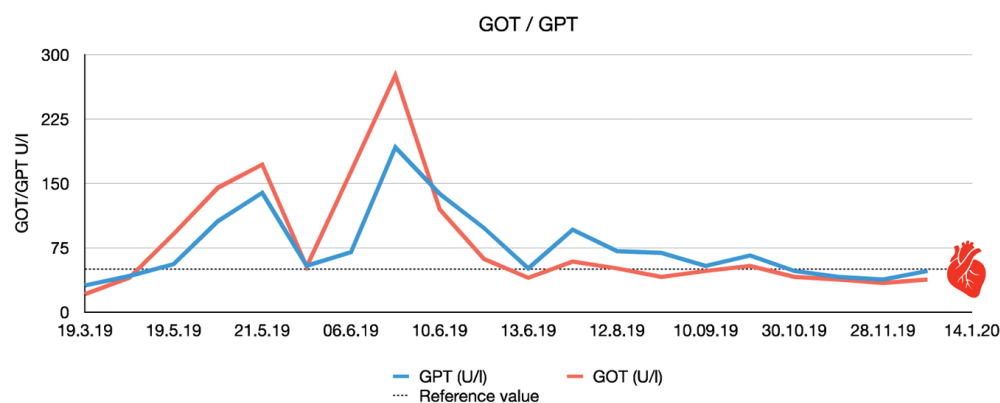
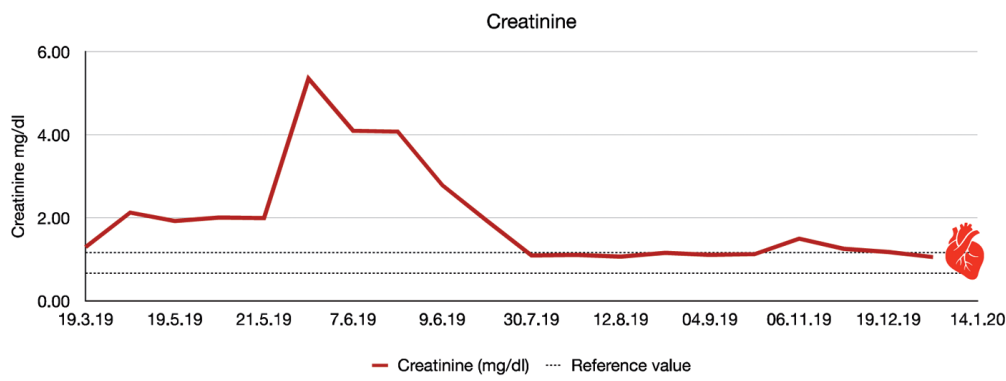
The Berlin Heart EXCOR®, which was implanted in Mr. H. on June 5th, offered this opportunity. The ventricular assist device enabled biventricular implantation, whereby the right ventricle could also be sufficiently supported. This is important for the overall support of the heart and was imperative for a positive outcome in this specific case, due to the reduced right ventricular pumping function as well as multiple organ failure. Withdrawal from the respirator could be started in the tracheotomized patient as early as the first day post surgery. At a circulatory support level of 4.2L/min, renal function gradually recovered; on the sixth postoperative day sufficient spontaneous diuresis had been regained. The infection values were also regressing, so the antibiotic therapy could be de-escalated.

Due to the marked clinical improvement, the need for improved mobilization also arose at this point. This could be ensured by switching the EXCOR® IkuS driving unit (stationary unit) to the Excor mobil (mobile unit). This allowed the patient to be discharged home for the first time in a good general state of health.

In order to illustrate the positive impact of Berlin Heart EXCOR® in this case, the patient's kidney and liver values are shown below with a respective peak at the EXCOR® BVAD implantation and marked improvement over time. The reference values achieved and the associated normalized organ function are part of a good preconditioning prior to the upcoming heart transplantation.

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„After the very stressful and long period in hospital, I was just happy to be back home with my family and recovering“
(Mr. H.)



*20 laboratory values were used to produce each of the diagrams.

Living with the Berlin Heart EXCOR®

Mr. H. was supported a great deal by his family on this difficult journey and also demonstrated a high level of self-motivation. In August, Mr. H. spent a few days in a rehabilitation clinic and was gradually able to build up his physical fitness again with the help of the Excor mobil driving unit. In mid-September, a huge step towards normality was taken as Mr. H. gradually resumed his professional occupation as an engineer.

Mr. H. was treated as an outpatient from then on. During the check-ups and the associated visual checks of the transparent blood pump casing, the beginning of deposit formation was noted. The blood pumps were exchanged without complications during an in-patient readmission, effectively reducing the risk of accompanying therapy complications.



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„Today I am feeling much better than I ever could have imagined at the start of therapy. I feel fit and well. Berlin Heart made it possible for me to survive the waiting period until my heart transplantation; it is the reason why I am still able to be with my family today.“
(Mr. H.)



The new heart

Mr. H. was put on the high-priority list for heart transplantation again on 14/01/2020 due to the mentioned complications. Thirty-seven days later, and after a total of almost nine months with the EXCOR® System, a suitable donor heart was found. The heart transplantation was successful. The patient could be extubated after just four days. The further clinical course was complication-free and demonstrated the patient's steadily improving physical and mental status; he could be discharged home on 13/03/2020. Today the 43-year-old man is doing well. He takes long walks almost daily and has experienced no problems with the donor heart so far. „It works wonderfully well,“ says the patient. Mr. H. hopes to return to work soon.

The access to some or all shown products may be restricted by country-specific regulatory approvals. The use of EXCOR® VAD for adults, RVAD-support, Excor mobile and EXCOR® Active is not FDA-approved.

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