

## BRIDGE TO LUNG TRANSPLANTATION WITH THE EXTRACORPOREAL MEMBRANE VENTILATOR NOVALUNG IN THE VENO-VENOUS MODE: THE INITIAL HANNOVER EXPERIENCE

FISCHER S, HOEPER MM, TOMASZEK S, SIMON A, GOTTLIEB J, WELTE T, HAVERICH A, STRUEBER M  
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### Objective

To describe initial experience with the Novalung<sup>®</sup> extracorporeal membrane ventilator in a pump-driven veno-venous mode in bridge-to-lungtransplantation (Ltx) patients suffering severe ventilator-refractory hypoxemia.

### Study Design

Observational study on two case report.

### Methods

For veno-venous cannulation, a 22F 5-stage Heartport cannula was inserted into a femoral vein for drainage and a 17F single-stage cannula was inserted into an internal jugular vein for blood return percutaneously. Blood flow was provided by a centrifugal pump. This setting enabled blood flow across the device of 4.5 to 5.1 lpm in patient 1 and 3.5 to 3.7 lpm in patient 2.

### Results

The length of veno-venous support was 17 days in patient 1 and 9 days in patient 2. Both were successfully bridged to Ltx. PaO<sub>2</sub> improved from 38 mmHg (patient 1) and 37 mmHg (patient 2) before Novalung<sup>®</sup> implantation to 77 mmHg and 122 mmHg at 6 hours post implantation. On day 7, measures of PaO<sub>2</sub> in both patients showed values of 92 mmHg and 76 mmHg, respectively.

### Discussion

The Novalung<sup>®</sup> iLA Membrane Ventilator<sup>™</sup> has not been approved for pump-driven venovenous operation so far. Nevertheless, this approach has proven it's feasibility and appeared to be safe, as none of the typical side-effects of ECMO were seen with the veno-venous Novalung<sup>®</sup> in these patients. Improvement in arterial oxygenation was seen from the early beginning of iLA therapy and remained constant for the following 7 days.

