

## **PUMPLESS EXTRACORPOREAL LUNG ASSIST - EXPERIENCE WITH THE FIRST 20 CASES**

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### **Objective**

Test the feasibility and efficacy of pumpless extracorporeal lung assist with iLA.

### **Study Design**

Prospective observational clinical trial.

### **Study Population**

20 adult patients (mean age 41 years meeting the criteria of the American-European consensus conference on ARDS).

### **Methods**

Patients were enrolled after interdisciplinary consensus on the reversibility of the individual patients pulmonary injury. In 4 patients iLA was installed after ECMO had failed due to thrombus formation within the system or pump head disfunction. Those patients were switched to iLA according to inclusion criteria. Patients underwent a protective ventilation protocol while on iLA.

### **Results**

Within 24 hours after initiating iLA a significant improvement in Oxygenation  $paO_2$  48.1 mmHg  $CO_2$  removal  $paCO_2$  32.7 mmHg was observed. 60% of patients could be discharged from hospital. During iLA no spontaneous bleeding forcing the interruption of treatment or signs of lymph ischemia were noted. In one case localized bleeding at the arterio punctures required surgical intervention. On thrombus in cannula required cannula replacement. 4 of the prototype lungs had to be exchanged due to plasma leakage or thrombus formation. 3 devices lasted for 24, 27 and 32 days respectably.

### **Commentary**

This study was performed with a prototype of iLA that utilized a standard gas exchange membrane, which caused the reported incidence of plasma leakage. With the PMP membrane used since 2003 no plasma leakage has been observed.

