AERO-MEDICAL EVACUATION WITH INTERVENTIONAL LUNG ASSIST IN LUNG FAILURE PATIENTS

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Objective
Scientifically evaluate the feasibility of iLA in long range aero-medical evacuation.

Study Design
Animal study.

Study Population
Eight female pigs.

Methods
Cannulation was performed in the right axillary artery and the right jugular vein. Mechanical ventilation was adjusted to below half of the needed minute volume prior to the use of iLA. The animals went through different modalities of transportation in ambulances, helicopters and aircraft. Two of the pigs were tested in a hypobaric chamber, and another two animals underwent a 7.5 h intercontinental transportation from Denmark to Greenland in a Hercules C130J transport airplane. The setting was a mobile intensive care compartment aboard the airplane.

Results
It was possible to maintain physiological $PaCO_2$ and PaO_2 in normal flight altitudes with iLA. Compared to pump-driven ECMO systems iLA is safer and more efficient. The current study demonstrates the feasibility of iLA during military aeromedical evacuation. No serious complications occurred.

Commentary
This work is of interest because recent use of iLA in military medicine demonstrated the need for such an enabling device and procedure to evacuate and treat patients, e.g. in case of blast injury which requires transport to larger hospitals with better treatment capabilities.