

## HEMODYNAMIC STABILITY DURING ARTERIOVENOUS CARBON DIOXIDE REMOVAL FOR ADULT RESPIRATORY DISTRESS SYNDROME: A PROSPECTIVE RANDOMIZED OUTCOMES STUDY IN ADULT SHEEP

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### Objective

Evaluate the ability of extracorporeal CO<sub>2</sub> removal to maintain hemodynamic stability during treatment of ARDS.

### Study Design

Randomized prospective experimental outcome study comparing extracorporeal CO<sub>2</sub> removal (n = 20) with sham (n = 8).

### Study Population

28 adult sheep (Suffolk ewes).

### Methods

Smoke inhalation injury (LD 50) plus 40% 3<sup>rd</sup> degree burn.

Measurement of ABG, CO<sub>2</sub> removal performance, PaO<sub>2</sub>/FiO<sub>2</sub> ratio, mechanical ventilation settings, outcomes.

### Results

At 48 hours after start of extracorporeal CO<sub>2</sub> removal heart rate, mean arterial pressure, cardiac output, pulmonary artery pressure, pulmonary arterial wedge pressure and central venous pressure were not different between groups.

Extracorporeal CO<sub>2</sub> removal allowed significant reduction in minute ventilation, FiO<sub>2</sub>, tidal volume, peak inspiratory pressure, and respiratory rate while normocapnia was achieved.

### Commentary

Extracorporeal CO<sub>2</sub> removal is an effective method that is hemodynamically well tolerated.

