

## **ARTERIO-VEINUS CO<sub>2</sub> REMOVAL (AVCO<sub>2</sub>R) PERIOPERATIVE MANAGEMENT: RAPID RECOVERY AND ENHANCED SURVIVAL**

ZWISCHENBERGER JB, SAVAGE C, WITT SA, ALPARD SK, HARPER DD, DEYO DJ  
J INVEST SURG 2002;15(1):15-21

CE1-30

### **Objective**

Evaluate outcome of extracorporeal CO<sub>2</sub> removal compared with mechanical ventilation only.

### **Study Design**

Randomized prospective experimental outcome study comparing extracorporeal CO<sub>2</sub> removal (n = 9) with sham (n = 9).

### **Study Population**

18 adult sheep.

### **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**

All 8 animals undergoing extracorporeal CO<sub>2</sub> removal survived, while significant reduction of mechanical ventilation allowed lung protection. Only 3 out of 8 animals in the sham group survived 7 days after randomization. Extracorporeal CO<sub>2</sub> removal amounted to 92 to 116 ml/min (93–97 % of CO<sub>2</sub> production) at shunt flows of 11–14 % of cardiac output while increasing ventilator free days to 3.9 versus 0.2 in sham animals.

### **Commentary**

Substantial outcome improvement and significantly more ventilator free days with extracorporeal CO<sub>2</sub> removal give valuable information on the potential of this method in smoke inhalation/burn injury patients.

