

## **Lithium dilution cardiac output measurement in oleic acid-induced pulmonary edema**

Kurita T, Morita K, Kawasaki H, Fujii K, Kazama T, Sato S. *J Cardiothorac Vasc Anesth*. 2002 Jun;16(3):334-7. doi: 10.1053/jcan.2002.124143.

**Objective:** To determine whether lung injury influences the accuracy of lithium dilution cardiac output (CO) measurement.

**Design:** Animal experimental study.

**Setting:** Animal experimental laboratory.

**Participants:** Swine (n = 23) weighing 26.4 +/- 2.47 kg (mean +/- SD).

**Interventions:** The animals were anesthetized and tracheotomized, then a pulmonary artery catheter was inserted into the right jugular vein, and a catheter (18G) was placed in the femoral artery. After median sternotomy and pericardiotomy, a left ventricular catheter (18G) was directly inserted. CO was measured by giving a bolus injection of lithium chloride into either the right atrium or the left ventricle in each animal. After control measurements, permeability pulmonary edema was initiated by infusing oleic acid into the central vein (injury). About 2 hours after oleic acid infusion, CO measurements were repeated in the same manner as the control measurement had been taken.

**Measurements and main results:** Under each condition, right atrium lithium injection was similar to left ventricle lithium injection. The mean of these differences at injury (-0.06 +/- 0.55 L/min) was the same as that at control (-0.05 +/- 0.36 L/min).

**Conclusions:** Although the variability of lithium dilution CO measurement after oleic acid-induced pulmonary edema was greater than that of the control, this technique was acceptable even in cases of lung injury.