

## Decreased Incidence of Hypothermia and Peritoneal Irritation in Laparoscopic Donor Nephrectomy Using A Filter-Hydrator- Heating Device (Insuflow<sup>®</sup>)

**Authors:** Raja Kandaswamy, MD, K. Gillingham, J. Harmon, M. Asolati

**Affiliation:** Department of Surgery, Medical School, University of Minnesota,  
Minneapolis, MN

**Introduction:** Creation of pneumo-peritoneum involves the use of CO<sub>2</sub> at 20 degrees C and 0% relative humidity. Warmed, humidified CO<sub>2</sub> (36 degrees C and 95% relative humidity) may decrease hypothermia and peritoneal pain from desiccation and irritation of the peritoneum. We evaluated the Insuflow<sup>®</sup> device for this purpose.

**Conclusions:** The Insuflow<sup>®</sup> device decreases the incidence of hypothermia and shivering and may be associated with decreased peritoneal desiccation leading to decreased incidence of shoulder tip pain.

**Methods:** Insuflow<sup>®</sup> was used in 10 laparoscopic kidney donors during a 2 month period. The data was compared with 10 contemporaneous donors without Insuflow<sup>®</sup> use. Results were calculated using Wilcoxon two-sided tests for calculating differences in means. Surface and IV fluid warming devices were used in all patients. Temperature monitoring was done by esophageal probe.

**Results:** The Insuflow<sup>®</sup> group was younger (36.8 vs. 44.5 years) (p=0.09). Other demographics were comparable. The volume of CO<sub>2</sub> used (591 vs. 487 liters) volume of irrigation (400 vs. 450 liters), or room temperature (67.7 vs. 67.9 degrees F), duration of surgery (250 vs. 227 minutes) were not different. Length of hospital stay (3.3 vs. 3.8 days) and postoperative analgesic use measured in morphine equivalents (62 mg vs. 69 mg) were not different between groups. However, Insuflow<sup>®</sup> patients spent less time in the recovery room (94 vs. 140 minutes) (p=0.02), had decreased incidence of shoulder pain (0% vs. 40%) (p=0.09) and shivering (0% vs. 40%) (p=0.09). At the end of the procedure, seventy percent (70%) of non- Insuflow<sup>®</sup> patients were hypothermic (<36 degrees C) compared to none (0%) of the Insuflow<sup>®</sup> group.