



## Re: Intra-Abdominal Cooling System Limits Ischemia-Reperfusion Injury During Robot-Assisted Renal Transplantation

Meier RPH<sup>1</sup>, Piller V<sup>1</sup>, Hagen ME<sup>1</sup>, Joliat C<sup>1</sup>, Buchs JB<sup>1</sup>, Nastasi A<sup>1</sup>, Ruttimann R<sup>1</sup>, Buchs NC<sup>1</sup>, Moll S<sup>2</sup>, Vallée JP<sup>3</sup>, Lazeyras F<sup>3</sup>, Morel P<sup>1</sup>, Bühler L<sup>1</sup>

<sup>1</sup>Geneva University Hospitals and Medical School, Department of Surgery, Visceral and Transplant Surgery, Geneva, Switzerland

<sup>2</sup>Geneva University Hospital and Medical School, Department of Pathology and Immunology, Division of Clinical Pathology, Geneva, Switzerland

<sup>3</sup>University of Geneva Faculty of Medicine, Department of Radiology and Medical Informatics, Geneva, Switzerland

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### EDITORIAL COMMENT

Minimally invasive, especially robot-assisted kidney transplantation (RKT) is of interest, however, concerns have been raised about possible increases in warm ischemia times. For this purpose, the authors have compared ischemia-reperfusion injuries after open or RKT in a porcine model and also have described a novel intra-abdominal cooling system aimed at reducing kidney rewarming during the procedure. After performing standard open donor nephrectomy, the kidneys were transplanted with standard open technique with intermittent 4 °C saline cooling (group 1), RKT without (group 2) and with continuous intra-abdominal cooling (group 3). Group 1 had the shortest vascular anastomosis time while the other 2 groups had similar vascular anastomosis duration. Group 3 maintained lower renal cortex temperatures throughout the procedure when compared to other two groups. Magnetic resonance imaging showed that parenchymal heterogeneities and histologic ischemia-reperfusion lesions were more severe in the robotic group without cooling than in the open surgery and the robot-assisted group with cooling groups. Reperfusion injuries are more prone to occur during RKT without efficient kidney cooling. The use of a novel intraoperative cooling device may successfully prevent ischemia-reperfusion injuries in the era of minimally invasive surgery.

Yarkın Kamil Yakupoğlu, MD