

Clampless; Group 2 Suture/Clamp). Student's T Test for unpaired samples was performed for age, operative time, Dmax at preoperative TC, pre and postoperative hemoglobin (Hb), pre and postoperative serum creatinine, pre and post operative Estimated Glomerular Filtration Rate (eGFR). Logistic regression analysis was used to assess the association between the surgery technique performed and impaired renal function (serum creatinine >1,21 ng/ml). We assumed  $p \leq 0.05$  as level of statistical significance.

**Results:** Student's T test for unpaired samples highlighted the following results: we didn't find a statistical difference for age ( $70,68 \pm 10,879$  vs  $70,92 \pm 10,110$ ,  $p = 0.9$ ), Dmax of cancer at preoperative TC ( $2,83 \pm 1,20$  vs  $2,89 \pm 1,13$ ,  $p = 0.77$ ), preoperative Hb ( $13,56 \pm 1,86$  vs  $13,20 \pm 1,74$ ,  $p = 0.34$ ), postoperative Hb ( $12,00 \pm 1,62$  vs  $11,59 \pm 1,67$ ,  $p = 0.22$ ), preoperative serum creatinine ( $1,02 \pm 0,44$  vs  $1,03 \pm 0,23$ ,  $p = 0.93$ ), postoperative serum creatinine ( $1,34 \pm 0,66$  vs  $1,07 \pm 0,30$ ,  $p < 0.05$ ), preoperative eGFR ( $72,89 \pm 18,97$  vs  $79,31 \pm 20,58$ ,  $p = 0.31$ ), postoperative eGFR ( $66,00 \pm 29,35$  vs  $78,56 \pm 17,81$ ,  $p = 0.14$ ). However we found statistically difference between the two groups in terms of operative time ( $131,40 \pm 25,11$  vs  $84,16 \pm 26,09$ ,  $p < 0.05$ ) and postoperative serum creatinine ( $1,34 \pm 0,66$  vs  $1,07 \pm 0,30$ ,  $p < 0.05$ ). At the logistic regression analysis adjusted for age the kind of surgery performed was not positively associated with the risk impaired renal function ( $p = 0.502$ ).

**Discussion:** In our series, the choose of a clampless/sutureless technique, despite a statistically significant difference between the two groups on postoperative serum creatinine, was not a predictor of impaired renal function. Both techniques proved to be safe with regard to postoperative blood loss. The greatest advantage of using the clampless/sutureless technique was in the shorter operative time compared to the clamp/suture technique. The data should be confirmed by prospective multicenter studies with larger samples.

## SC52

### On-clamp vs off-clamp laparoscopic partial nephrectomy: An intention-to-treat analysis from the Clock II randomized trial

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**Aim of the study:** To report a comparative analysis of perioperative outcomes of on-clamp vs off-clamp laparoscopic partial nephrectomy (LPN) in the setting of a randomized controlled trial.

**Materials and methods:** 217 patients with RENAL masses  $\leq 10$  were randomized to on-clamp (106) vs off-clamp (111) LPN (The CLOCK II trial - ClinicalTrials.gov NCT 02287987). Data were collected at 5 participating institutions. One experienced surgeon per institution performed all the surgeries. Baseline and perioperative outcomes were collected and analyzed. The intention-to-treat analysis is reported herein.

**Results:** After randomization, treatment groups were comparable at baseline in age, BMI, comorbidities, clinical tumor size, RENAL score, serum creatinine, hemoglobin. Regarding the perioperative outcomes, no significant differences were found in the resection technique, the renorrhaphy technique, the use of hemostatic agents, the complications' and transfusions' rates, the perceived intraoperative bleeding and blood loss, the operative time and the hospital stay. A similar proportion of malignant lesions was found at final pathology, with no significant differences in the positive surgical margins rate.

**Discussion:** At the intention-to-treat analysis of the randomized controlled trial reported herein, off-clamp and on-clamp LPN resulted in similar perioperative outcomes. No significant difference was found in the positive surgical margins' rate as well.

## SC53

### Shifting from a planned off-clamp to an on-clamp partial nephrectomy: Comparison of two randomized trials

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**Aim of the study:** To compare the perioperative outcomes of robotic vs laparoscopic partial nephrectomy (RPN vs LPN) in a specific subgroup of patients.

**Materials and methods:** Specifically for the purpose of the study, patients who were randomized to off-clamp and who were converted to on-clamp RPN and LPN were extracted from the CLOCK I and II randomized controlled trials (ClinicalTrials.gov NCT 02287987). Analysis of baseline data and perioperative outcomes was performed.

**Results:** 61 out of 152 (40%) and 36 out of 111 (32%) patients were shifted to on-clamp RPN and LPN and were extracted from the CLOCK I and II trials. Groups were comparable at baseline in age, BMI, comorbidities, RENAL score, serum creatinine, hemoglobin. Tumor size was larger in the LPN group ( $4.0$  (2.5–4.9) vs  $3.5$  (2.6–4.2)). Regarding the perioperative outcomes, operative time and blood losses were higher in LPN. No differences were found in the complications rate. Ischemia time averaged 15 min in both groups. No difference in positive surgical margins was found.

**Discussion:** Results from two randomized showed that it is more likely to shift from off-clamp to on-clamp during RPN. In the subgroup of patients shifted to on-clamp, operative time and blood losses are lower for robotic although tumor size was larger in the pure laparoscopic group. On the other hand, no differences in complications, ischemia time and positive surgical margins were found.

## SC54

### Safety of off- and on-clamp robotic partial nephrectomy: Final results from a randomized clinical trial (the CLOCK trial)

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**Aim of the study:** To compare the perioperative outcomes and complications of robotic partial nephrectomy (RAPN) performed with an on-clamp vs off-clamp approach.

**Materials and methods:** 302 patients with RENAL masses  $\leq 10$  were randomized to on-clamp (150) vs off-clamp (152) RAPN (CLOCK trial - ClinicalTrials.gov NCT02287987). Data were collected at 7 institutions. One experienced surgeon per institution performed the surgeries. Perioperative outcomes and complications (Clavien-Dindo) were analyzed.

**Results:** The per-protocol analysis was considered as including the patients who actually completed the treatment. The enrolled patients were allocated to 129 on-clamp vs 91 off-clamp RAPNs were analyzed. A significant difference in clinical tumor size (off-clamp vs on-clamp, median diameter  $2.2$  vs  $3.0$  cm,  $p < 0.001$ ) and RENAL score ( $5$  cm vs  $6$  cm,  $p < 0.001$ ) was noted. Retro-peritoneal approach was preferred for off-clamp procedures (22% vs 8%,  $p = 0.005$ ), within a shorter operative time ( $115$  min vs  $120$  min,  $p = 0.005$ ) and less frequently with a single-layer renorrhaphy (59% vs 84%,  $p = 0.011$ ). Perception of severe bleeding was more frequent in the off-clamp group ( $p = 0.011$ ). No differences regarding intra-operative blood loss, post-operative complications rate, post-operative anemia, acute kidney injury, and positive surgical margins. At multivariable analysis, a significant