837 | Predictors for perioperative complications in cytoreductive nephrectomy: Analysis of the registry for metastatic RCC (REMARCC)

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Introduction & Objectives: Cytoreductive nephrectomy (CN) plays an important role in the treatment of a subgroup of metastatic renal cell carcinoma (mRCC) patients. This study was set up to evaluate morbidity associated with this procedure and identify predictors for complications with the goal of improving the outcome of this surgical procedure.

Materials & Methods: Data from 736 mRCC patients undergoing CN at 14 institutions was retrospectively recorded in the REgistry for MetAstatic RCC (REMARCC). Complications were graded using the Clavien-Dindo Classification (CDC). Logistic regression analysis was used to identify predictors for intraoperative and postoperative complications as well as 30-day readmission rates.

Results: Two hundred seventeen patients (29,5%) encountered any grade of postoperative complication (AGC) while 45 (6,1%) encountered a high grade complication (HGC) (CDC3-5) of which 10 (1,4%) resulted in death. Twenty-four patients (3,3%) had multiple postoperative complications. The nature of complications was vascular/lymphatic in 29,9%, infectious in 18,8%, cardiopulmonary in 17,4%, gastro-intestinal in 14,7%, urological in 10,3%, wound-related in 5,8% and neurologic in 3,1% of cases, respectively.
On univariate analysis, cT-stage, estimated blood loss (quantiles) (EBL), thrombectomy and surgical approach (open vs. minimally invasive) were predictive for AGC. Karnofsky performance score, pre-operative lactate dehydrogenase (LDH), cT-stage, EBL, adjacent organ removal, lymph node dissection, thrombectomy and CN case load (quantiles) were predictive solely for HGC. Cytoreductive nephrectomy case load (HR 0.13, 95%CI 0.03-0.59, p=0.009) and EBL (HR 2.93, 95%CI 1.20-7.15, p=0.02) remained significant predictors for HGC on multivariate analysis.
Intraoperative complications were observed in 69 patients (10,9%). Univariate analysis revealed international metastatic renal cell carcinoma database consortium (IMDC) score, pre-operative LDH, cN-stage, adjacent organ removal and thrombectomy to be predictive for intraoperative

complications. Only thrombectomy (HR 1.94, 95%CI 1.19-11.08, p=0.008) remained a significant predictor on multivariate analysis. Forty-one patients (11,5%) were readmitted within 30 days of surgery. No significant predictors were identified.

Conclusions: Morbidity associated with CN is not negligible. Predictors for high grade postoperative morbidity are predominantly indicators of complex surgery and should warrant increased vigilance towards postoperative complications. Estimated blood loss is a strong predictor for both low and high grade complications. Cytoreductive nephrectomy case load correlates with lower high grade morbidity and highlights the benefit of centralization of complex surgery. However, risks and benefits should be balanced when considering CN in mRCC patients.