

life regarding bladder outlet). Baseline and functional characteristics were combined in a score (bladder outlet-cancer score - BOCS). The correlation between the individual factors and the no-tumor free status after therapy at first follow-up was evaluated by univariate analysis (figure 3). A multivariate logistic regression analysis was carried out for the factors associated with no-tumor free status in the univariate analysis ( $p < 0.05$ ). In order to develop a risk scoring system, for each risk factor, we assigned a weight using the respective adjusted odds ratios (ORs) obtained by the logistic regression analysis (after excluding no statistically significant data). The square roots of the ORs were returned and the decimal points were rounded to the nearest unit. T-test, chi-square test, ROC curves, logistic correlation, multivariate analysis were applied.

**Results:** According to the multivariate analysis, the BOCS score based on the sum of the following parameters: age  $\geq 72$  years, ASA score  $\geq 2$ , stage  $\geq$  intermediate risk, PVR  $\geq 100$  ml, IPSS  $\geq 7$  and QoL (dissatisfaction). For each parameter, when occurring, we assigned 1 point; the score ranged between 0 and 6. Patients in group 2 had higher BOCS values compared to group 1, with statistically significant differences. We reported a linear correlation between BOCS and tumor risk categories ( $r^2 = 0,2181$ ,  $p < 0,05$ ). The ROC curves revealed an AUC of 0,928 (95% CI, 0,908–0,948) for BOCS when considering all tumor risk categories, with an optimal cut-off of 0–2 points (according to Youden's index). Patients with a BOCS score more than 2 had an OR of 5.73 to recur or progress.

**Conclusions:** Urinary retention might represent both an active factor promoting BCa and a prognostic factor of treatment response. Patients with worse "functional" parameters might recur or progress more than patients without significant bladder outlet disorders. The active treatment of urinary retention should be considered as an important therapeutic step to be integrated into the clinical management of BCa patients.

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**Impact of preoperative Controlling nutritional status (CONUT) score on perioperative morbidity and survival outcomes in patients with bladder cancer treated with radical cystectomy**

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**Introduction:** Despite several improvements in surgical technique, radical cystectomy (RC) remains an highly morbid operation and even in contemporary series the combined surgical, medical and disease morbidity results in a low 5-years overall survival (OS). Furthermore, the age of patients undergoing RC has increased and the ability to predict perioperative morbidity is crucial in the preoperative workup of RC. Immune-nutritional status have gained special attention in oncological patients and might play an important role in human cancer development and progression. The controlling nutritional status (CONUT), a score based on the serum albumin concentration, lymphocyte count and total cholesterol concentration, is a comprehensive index that could provide an immune response status and long-term nutritional effect of the host. Recently, its prognostic value has been reported in many types of malignancies but it's never tested in bladder cancer (BC). The aim of the study is to evaluate the role of preoperative CONUT score in the assessment of both oncological outcomes and perioperative morbidity in patients underwent RC for non-metastatic BC.

**Materials and methods:** We retrospectively evaluated data from 347 patients who underwent RC for BC at five european high-volume centers between January 2002 and December 2018. Patients were divided into two groups according to the optimal cut-off value of

CONUT score. Relationships of CONUT score with clinicopathological characteristics, perioperative complications (according to the Calvien-Dindo system), 30-days readmission, 90-days mortality, cancer-specific mortality (CSM), overall mortality (OM) and progression-free survival (PFS) were analyzed.

**Results:** Cut-off value to discriminate between high and low CONUT score was determined calculating the ROC curve: the area under the curve was 0.72 with an optimal cut-off of 3 points. A high preoperative CONUT score was.

significantly correlated with older age, worse ASA score, advanced pT stage, high grade and node-positive disease, positive surgical margins (PSM), higher median length of stay and 30-days readmission (all  $p < 0.05$ ). At multivariable binomial logistic regression analysis adjusted for age, sex, BMI, ASA score, pT, pN and type of urinary diversion, high CONUT was an independent predictor of perioperative major complications (grade 3–5) (OR 2.9; 95%CI 1.6–5.4;  $p < 0.001$ ) and 30-days readmission (OR 2.5; 95%CI 1.3–4.9;  $p = 0.001$ ). At multivariable Cox's regression analysis adjusted for age, sex, BMI, ASA score, presence of adjuvant therapy, pT, pN, LVI, PSM and concomitant cis, high CONUT was an independent predictor of CSM (HR 3.6; 95%CI 2.4–5.5;  $p < 0.001$ ), OM (HR 2.5; 95%CI 1.7–3.4;  $p < 0.001$ ) and worse PFS (HR 2.7; 95%CI 1.9–3.9;  $p < 0.001$ ).

**Conclusions:** Preoperative CONUT score can be used as a simple and inexpensive biomarker to predict perioperative morbidity and survival outcomes in patients with BC after radical cystectomy.

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**High prevalence and negative impact of sarcopenia on oncological outcomes in patients with upper tract urothelial carcinoma treated with radical nephroureterectomy**

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**Introduction:** To date, outlining an individual risk profile is the challenge of cancer care providers. It is increasingly evident that a holistic vision is needed, which focuses better on the patient, rather than only on the disease. This is even more true for upper tract urothelial carcinoma, an extremely heterogeneous disease for which optimal management is still under debate. Within a European multicenter effort involving eleven institutions, we focused on the meaning of sarcopenia, understood as loss of muscle mass and strength. We aimed to describe its prevalence in a large population of patients undergoing radical nephroureterectomy for non-metastatic upper tract urothelial carcinoma and its impact on oncological outcomes.

**Materials and methods:** To quantify the body muscle mass, CT images of each patient were acquired, and two independent radiologists selected the single axial shot at the level of the third lumbar vertebra, where both transverse processes were clearly visible. The skeletal muscle index was then calculated, using the attenuation thresholds of  $-29$  to  $+150$  Hounsfield Units with a validates software (Slice-O-Matic software). The sex-specific international consensus definitions of sarcopenia, based on two standard deviations below the norm for young healthy adults, were used to classify patients as sarcopenic or not sarcopenic. Survival curves were generated using the Kaplan-Meier method (log-rank test). The Cox proportional hazards model was used to evaluate the association between features of interest and disease recurrence and cancer-specific mortality occurrence.

**Results:** Three hundred one patients who underwent surgery between 2011 and 2016 were included. The median follow-up time was 26 months (IQR 10–56). 155 patients (51.5%) were sarcopenic. The 5-year recurrence-free survival and cancer-specific survival was 44% and 68%, 64% and 83% for sarcopenic and non-sarcopenic patients, respectively