

conducted evaluating demographic characteristic of each patient, intraoperative and postoperative parameters. We analyzed the number of resections, number of total recurrences, time of recurrences, and histopathology details. The population was divided into two main groups: treated and untreated with 5-ARIs. Patients were treated with dutasteride for lower urinary tract symptoms due to prostatic hyperplasia (mean treatment time 16.8 months). The patients were followed according to EAU follow-up guidelines for NMIBC. Mean follow-up time was 29.5 months (range 24–50 months).

**Results:** No significant differences were observed among the different groups at baseline. The group treated with 5-ARIs presented a lower rate of recurrences (14.78%) than the untreated group (37.11%). Regarding the mean number of recurrences statistically significant difference was observed between the untreated ( $1.944 \pm \text{SD } 0.141$ ) and the treated group ( $1.235; \pm \text{SD } 0.206$ ;  $p$ -value: 0.0066), respectively. Furthermore, evaluating the recurrences, the 5-ARIs group showed a lower T stage when compared to the untreated group ( $p$ -value = 0.037). No significant differences were obtained regarding the grade of the recurrences ( $p$ -value = 0.756).

**Discussion:** Long-term treatment with 5-alpha-reductase inhibitors might play a role in reducing the risk of tumour recurrence and pT and extension of the lesions. Starting from this experience, a long-term, randomized prospective study could definitively assess the possible role of this widely used drugs in NMIBC.

## SC72

### Bladder cancer and aploidentical bone marrow transplant with immunotherapy: Which is the relationship?

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**Aim of the study:** Lymphocytes T replete Aploidentical Transplantation (AT) after bone marrow ablation by radiotherapy and chemotherapy is the gold standard treatment for haematological cancer when an allogeneic transplantation is necessary. Nevertheless, this type of AT is affected by high rate of recurrence and potentially lethal infections. For this reason, an immunotherapy including an inoculation of lymphocytes T-regulator and T-conventional was added in order to decrease the risk of transplant rejection and the Graft versus host disease leading to survival improvement. Primary aim was to analyze the incidence of secondary urological neoplasms in patients undergone bone marrow transplant from Hla aploidentical donor for haematological cancer. Secondary aim was to investigate the potential relationship between bone marrow transplant from Hla aploidentical donor and secondary urological malignancies.

**Materials and methods:** Patients undergone AT with lymphocytes T regulator and T-conventional were prospectively enrolled from September 2008 to December 2018. Those who had previous or synchronous malignancies were excluded. The demographic and pathological data were analyzed focusing on the age at the time of tumor diagnosis, the haematological disease that led to bone marrow transplantation, the timing between the transplantation and the urological tumor diagnosis, the histological type, the immunosuppressive regimen, any episode of rejection, the age and sex of the donor, any early and late complication and finally the cancer specific survival related to haematological and urological cancer. For statistical analysis, the software SPSS ver. 21 (SPSS Inc., Chicago, IL, USA) assuming significance cut-off value  $P < 0.05$ .

**Results:** All data were resumed in table. 179 patients (86 female and 93 male) were included. Of these, 17 (24%) underwent TURB for bladder cancer. Histologic examination revealed 16 low-grade urothelial carcinoma and one case of recurrence of lymphatic acute leukemia with atypical localization. These secondary bladder neoplasms arose after mean time of 30.7 months (3–77) from bone marrow

transplantation. The Wilcoxon test revealed that the patients undergoing bone marrow transplantation had a significant correlation with the development of bladder cancer ( $p = 0.011$ ).

Age group	18-34 y	34-49 y	50-65 y
n.° patient	48 (26.8%)	60 (33.5 %)	71 (39.7%)
Ematologic disease	34 LMA	36 LMA	53 LMA
	13 LLA	18 LLA	13 LLA
	1 LH	4 LH	1 LH
		2 MM	4 MM
Follow-up	32.2 months (1-119)	32.95 months (1-113)	25.76 months (1-111)
secondary malignancy	0 (0%)	0 (0%)	17 (24%)
Time secondary malignancy			30.7 months (3-77)

**Discussion:** To our knowledge, the incidence of urological tumor secondary to bone marrow transplantation for haematological cancer was evaluated for the first time in Literature. We found a significant correlation between AT with lymphocytes T regulator and T-conventional and the development of bladder cancer.

## SC73

### Comparison of 2 newly developed bladder cancer tests in the follow up of patients with non muscle invasive bladder cancer (NMIBC)

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**Aim of the study:** Cystoscopy is the most efficient method currently available for the diagnosis of primary or recurrent Bladder cancer (BC), but it is invasive and causes significant discomfort to the patient. Furthermore, flat tumors or carcinoma in situ may be difficult to detect. Urinary cytology is not invasive and very effective in diagnosing high grade lesions but it has a low sensitivity in low grade tumours. The limitations of both, cytology and cystoscopy, for monitoring patients with bladder cancer led to the development of new urine tests for the early detection of BC. The aim of this study was to compare the diagnostic value of two newly developed urine tests, the mRNA based Xpert BC Monitor and the DNA methylation based Bladder Epicheck in patients under follow-up after TUR.

**Materials and methods:** 230 patients (median age 73 yrs, range 43–90) under follow up for NMIBC were studied prospectively. Samples were analyzed with the Bladder Epicheck Test, the Xpert BC Monitor and voided urinary cytology. Subsequently to urine collection, the patient underwent cystoscopy and if cystoscopically positive, a TUR-B. Cytologies were evaluated according to the Paris System of reporting cytology. For the Bladder Epicheck Test a software calculates the EpiScore, a number between 0 and 100 representing the overall methylation level of the sample. If the EpiScore is equal or above 60 it is considered positive. The results of the Xpert BC Monitor are interpreted by the GeneXpert® Instrument System and given as LDA totals and Analyte Results on the Test Report. A cut-off is set at a LDA of  $>0.5$ . Sensitivity, specificity, PPV and NPV of Bladder Epicheck, Xpert BC Monitor and cytology were calculated using cystoscopy/histology as gold standard.

**Results:** 9.3% of the patients had to be excluded due to insufficient DNA in the Bladder Epicheck Test. 53 out of 230 remaining patients had histologically verified BC of the bladder, 33 low grade (LG) and 20 high grade (HG); 177/230 patients were negative cystoscopically and/or histologically. Of the 53 patients with BC, 31 (58.5%) were found positive for Bladder Epicheck and 34 (64.1%) for Xpert BC Monitor and 15 (28.3%) for cytology. The sensitivity of Bladder Epicheck increased from 45.5% for LG to 80% in HG tumours, whereas the sensitivity of

Xpert BC Monitor increased from 51.5% in LG to 85% in HG one. Specificity was 80.7% (125/177) for Bladder Epicheck, 70.6% (26/40) for Xpert BC Monitor and 98.3% (174/177) for voided urinary cytology.

**Discussion:** Xpert BC Monitor performs better in sensitivity, while the Bladder Epicheck shows higher specificity. Both tests did not reach the high specificity of cytology. Xpert BC Monitor is easy and fast to perform while the Bladder Epicheck requires dedicated technicians and is more time consuming. Both tests are, however, of interest as an additional tool in the follow up of patients with NMIBC, by reducing the number of cystoscopies.

## SC74

### Xpert bladder cancer monitor in the follow up of patients affected by non muscle invasive bladder cancer (NMIBC): An update

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**Aim of the study:** Bladder cancer (BC) has one of the highest recurrence rates, ranging from 50% to 70% within 5 years of the first treatment and requiring a lifelong follow up with cystoscopy and cytology, limited by its low sensitivity in low grade tumours. The Xpert BC Monitor kit is a new urinary marker test based on the evaluation of 5 targets mRNAs (ABL1, CRH, IGF2, UPK1B and ANXA10), over-expressed in patients with BC. The aim of our study was to further evaluate the diagnostic accuracy of the Xpert BC Monitor test in the follow up of patients with history of NMIBC and to compare it with urinary cytology, cystoscopy and/or histology.

**Materials and methods:** 517 patients under follow up for NMIBC were included in this prospective study. Samples were analyzed with the Xpert BC Monitor kit and urinary cytology. Subsequently to urine collection, the patients underwent cystoscopy and if positive a TUR-B. Cytologies were evaluated according to the Paris System of reporting cytology. For statistical analysis, negative for high grade urothelial cancer (UC) and atypical urothelial cells were grouped as negative, suspicious for high grade UC, high grade UC and low grade urothelial neoplasia as positive. The Xpert BC Monitor test was reported by the software as negative or positive (cut-off total LDA = 0.5). Sensitivity, specificity, PPV and NPV of Xpert BC Monitor and cytology were calculated using cystoscopy or histology results, if available, as gold standard.

**Results:** Median age of the patients was 73 years (range 28–95). Two patients had to be excluded due to a not diagnostic cytology and Xpert BC Monitor. Of the remaining 517 patients, 128 had tumour recurrence (95 LG (74.2%), 33 HG (25.8%)). Overall sensitivity was 21% (27/128) for cytology, 57% (73/128) for Xpert BC Monitor and 59.3% (76/128) for the two tests combined. The sensitivity of cytology increased from 5.3% (5/95) in low grade (LG) to 66.6% (22/33) in high grade (HG) tumours whereas, for the Xpert BC Monitor, the sensitivity was 48.4% (46/95) in LG and 81.8% (27/33) in HG tumours. Combined cytology and Xpert<sup>®</sup> BC Monitor yielded an overall sensitivity of 49.5% (18/60) for LG and 87.8% (16/17) for HG tumours. Overall specificity was 98.2% for cytology and 74.3% for Xpert<sup>®</sup> BC. PPV for cytology was 79.4% and for Xpert BC Monitor 42.2% while NPV was similar for the 2 tests: 79% for cytology versus 84% for Xpert BC Monitor.

**Discussion:** Our data confirm that the sensitivity of the Xpert BC Monitor Test is significantly higher than for cytology as previously reported. In combination with cytology the test improves early diagnosis of tumour recurrence and the number of cystoscopies can be reduced in low risk patients.

## SC75

### Impact of antiplatelet or anticoagulation therapy in patients newly diagnosed bladder cancer: Preliminary results of a independent analysis of the Identify Study Italian cohort

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**Aim of the study:** The most common symptom of bladder cancer (BCa) is haematuria. Although macroscopic haematuria has long been assumed to be the earliest and most frequent symptom of BCa, its effect on current urologic practice deserves better investigation because of some novel epidemiologic and clinical findings. Antiplatelet and anticoagulant therapy (AAT) represents one of the most widely used treatments in medical practice. The aim of this study is to evaluate whether patients taking AAT might experience haematuria at an earlier stage or grade of BCa in the setting of IDENTIFY study: the largest ever prospective, international, multi-centre study of patients referred to secondary care, with or without haematuria, for the investigation of suspected urinary tract cancer.

**Materials and methods:** Data were collected prospectively from five Italian tertiary referral centers including 618 consecutive patients undergoing cystoscopy because of urothelial cancer suspicion and with no history of previous urological tumours, from December 2017 to May 2018. For the purpose of this sub-analysis patients with subsequent diagnosis of BCa were divided into two groups: patients receiving antiplatelet or anticoagulant therapy (AAT) and patients who are not receiving it at the moment of enrollment.

**Results:** We included 109 patients with complete follow up and histopathology. 34 (31.2%) of patients took AAT at the time of enrollment. The mean age of the population was 72.3 years ( $\pm 11.4$ , SD) and the majority of patients were males (88.9%). Distribution of data in BMI, smoke habits, family history of urological cancer, tumour focality, tumor size, tumour location, final pT stage, grading according to WHO and histologic variants of BCa was homogenous (all  $p > 0.05$ ). Data regarding mean age at recruitment ( $p < 0.0001$ ), gender ( $p = 0.02$ ), type of haematuria (visible or not,  $p < 0.0001$ ) were statistically significantly different between the two populations. A multivariable binomial logistic regression analysis adjusted for age, sex, tumour size, tumour focality, active smoke habit and AAT confirmed the absence of statistically significant differences in predict high grade or stage BCa at final pathology report ( $p = 0.43$ ).

**Discussion:** In this preliminary independent analysis of the Italian cohort of the IDENTIFY study, patients without history of urological malignancies undergoing cystoscopy because of suspicious urothelial cancer do not seem to experience haematuria significantly earlier (regarding pT stage and or grading) if using AAT. Whilst IDENTIFY definitive results are awaited to confirm our findings, investigation for suspect urothelial cancers should not differ from the standard in these patients.

## SC76

### Utility of serum markers in the assessment of perioperative and postoperative morbidity and mortality after radical cystectomy

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**Aim of the study:** Despite significant improvements in surgical techniques, radical cystectomy (RC) remains a highly morbid operation. The ability to predict complications and create prevention