

Smart Communications (SC68–SC79)

Bladder cancer: Diagnosis and prognostic factors

Smart Communications	Title
SC68	Risk factors of bladder cancer in patients undergoing transurethral cystoscopy: A multicentric Italian experience from the IDENTIFY study cohort
SC69	Bladder EpiCheck in high risk population
SC70	The feasibility and prognostic value of sequential evaluation of EGFR cell expression in bladder washings after transurethral resection of Non-Muscle Invasive Bladder Cancer: A new potential tool to identify patients at higher risk of disease progression
SC71	Possible role of 5-alpha reductase inhibitors in non-invasive bladder urothelial neoplasm: Multicentric retrospective study
SC72	Bladder cancer and aplodical bone marrow transplant with immunotherapy: Which is the relationship?
SC73	Comparison of 2 newly developed bladder cancer tests in the follow up of patients with non muscle invasive bladder cancer (NMIBC)
SC74	Xpert bladder cancer monitor in the follow up of patients affected by non muscle invasive bladder cancer (NMIBC): An update
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
SC76	Utility of serum markers in the assessment of perioperative and postoperative morbidity and mortality after radical cystectomy
SC77	Predictors of undetectable disease after radical cystectomy: Results from a single, large single-institution series
SC78	Survival outcomes according to salvage treatments for distant bladder cancer recurrences after radical cystectomy
SC79	Survival outcomes according to salvage treatments for local bladder cancer recurrences following radical cystectomy

SC68 Risk factors of bladder cancer in patients undergoing transurethral cystoscopy: A multicentric Italian experience from the IDENTIFY study cohort

R. Malinaric¹, A. Olivero, F. Claps, N. Pavan, M. Boltri, G. Pizzuto, S. Mazzoli, G. La Montagna, G. Tasso, S. Venturini, E. Patagonia, L. Dell'Atti, M. Tallè, A. Galosi, A. Minervini, C. Trombetta, P. Gontero, C. Terrone, G. Marra (Genova)

Aim of the study: Bladder cancer (BC) is the eleventh most commonly diagnosed cancer worldwide. The aim of this work was to evaluate the most significant predictive factors for the likelihood of bladder cancer based on the related risk factors in a contemporary Italian cohort.

Materials and methods: Demographic and clinical data were obtained from five Italian centers participating to the IDENTIFY study from December 2017 to May 2018, a large prospective, international,

multicentric study of patients undergoing cystoscopy, with or without hematuria, for the investigation of suspected urinary tract cancer. Patients with previous urological cancer were excluded. Age, sex, Body Mass Index (BMI), Smoke habit, family history of urological malignancies, professional exposure and hematuria (macroscopic or microscopic) data were collected. All cystoscopic urothelial cancer diagnosis were confirmed by subsequent pathological examination. The predictive value of each variable was measured using univariate analysis and multinomial logistic regression to develop the multivariate analysis.

Results: We recorded data of 618 patients from five Italian academic centers, 437 patients presented complete data and follow up and were included in the final analysis. 351 (80.3%) of the patients were male. Patients older than 60 years were the majority (80.1%). The smoke habit was present in 252 subjects (65.8%). Familiar history of urological malignancies was positive in 115 patients (26.3%). Patients presenting macroscopic hematuria were 320 (73.2%) while microscopic hematuria was demonstrated in 27 (6.2%) subjects. Professional exposure to

Variable	UC	Benign	Neg Cistocopy	RR	Range	p-value	Test- χ^2
SEX (437)							
M	189	73	89	1,5436	1,1383-2,0932	0,0052	0,0004
F	30	16	40	0,6478	0,4777-0,8785		
	219	89	129				
AGE (437)							
<40	7	2	8	0,8158	0,4586-1,4512	0,4884	0,1844
40-49	8	4	8	0,7905	0,4583-1,3635	0,3980	
50-59	19	11	20	0,7353	0,5095-1,0613	0,1005	
60-69	43	20	30	0,9037	0,7093-1,1515	0,4127	
≥ 70	142	52	63	1,2916	1,0558-1,5802	0,0129	
<60	34	17	36	0,7394	0,5586-0,9787	0,0348	0,0197
≥ 60	185	72	93	1,3525	1,0218-1,7903		
	219	89	129				
BMI (359)							
≤ 25	83	27	62	0,9400	0,7632-1,1578	0,5605	0,0555
25.01 -30	76	31	35	1,1276	0,9162-1,3877	0,2569	
≥ 30.01	20	14	11	0,8977	0,6379-1,2632	0,5356	
Missing data (78)	40	17	21				
	179	72	108				
Smoke habit (383)							
Ex-Smoker	91	28	35	1,2766	1,0539-1,5463	0,0125	0,0007
Active Smoker	58	12	28	1,2135	0,9906-1,4865	0,0617	
Never	48	34	49	0,6197	0,4838-0,7937	0,0002	
	197	74	112				
FAMILIAR HISTORY (437)							
Positive	68	29	18	1,2609	1,0414-1,5268	0,0175	0,0007
BC	11	5	3	1,1635	0,7835-1,7277	0,4529	
Prostate Cancer	8	9	3				
Kidney Cancer	0	0	3				
Negative	151	60	111	0,7931	0,6550-0,9603	0,0175	
	219	89	129				
HEMATURIA (437)							
Macroscopic (320)							
- single episode (142)	59	41	42	0,9848	0,7173-1,3520	0,9244	0,0009
- multiple episodes (178)	92	40	46	0,8039	0,6315-1,0233	0,0762	
Microscopic (27)	14	2	11	1,2440	0,9772-1,5835	0,0762	
				1,1051	0,7553-1,6169	0,6068	
PROFESSIONAL EXPOSURE (319)							
Yes (41)	23	11	7	0,9686	0,7257-1,2929	0,8288	0,0000
No (278)	161	6	111	1,0324	0,7735-1,3780		

Figure: (abstract: SC68).

related risk factors was present in 41 patients. Results of the univariate analysis in the prediction of BC are shown in the tables below. Male status ($p < 0.001$), age older than 60 years old ($p = 0.02$), smoke habit ($p < 0.001$), family history ($p < 0.001$) and multiple hematuria episodes ($p < 0.001$) were significantly associated with the risk of having diagnostic cystoscopy positive for urothelial cancer whilst BMI and professional exposure were not ($p > 0.05$). On the multivariate analysis current or previous smoking status ($p = 0.007$) and hematuria (macro or micro) ($p = 0.023$) were predictors of a diagnosis of urothelial cancer at cystoscopy.

Discussion: In this independent analysis of the Italian cohort of the IDENTIFY study, macro-hematuria and smoke habit better predicted the likelihood of bladder cancer in patients undergoing cystoscopy for urothelial cancer suspicion. Final results of the IDENTIFY study are awaited to confirm our findings.

SC69 Bladder EpiCheck in high risk population

L. Di Gianfrancesco, M. Ragonese, G. Palermo, M. Racioppi, F. Pierconti, M. Martini, P. Bassi (Roma)

Aim of the study: Bladder carcinoma (BCa) represents the most expensive cancer due to its high rate of recurrence. The main issue of BCa lies in the long follow-up and in the absence of urinary assays currently able to replace and overcome, in terms of diagnostic accuracy, the current gold-standard of follow-up (based on cystoscopy and cytology), in particular in high-risk population. Bladder EpiCheck is a new urinary test that analyzes DNA methylation biomarkers in order to identify high-risk urothelial cancer.

Materials and methods: A prospective, blinded, single-center, non-randomized phase-2 study was carried out. Urine for testing was collected before standard-of-care cystoscopy/TURBT. Cytology and

Bladder EpiCheck analysis were performed by two different blinded experienced urocytologist. The inclusion criteria were: patients with high risk BCa (high grade, T1, Carcinoma in situ) in follow-up or as first diagnosis, able to produce 10 ml of urine, and able to consent. We recruited 170 consecutive patients: 133 patients with history of high risk BCa (60 not treated in the last 3 months and 73 recently treated), 10 with a new diagnosis of high risk BCa; the latter were compared to 27 consecutive subjects undergoing endoscopic evaluation for macrohematuria or positive cytology. Sensitivity, specificity, negative predictive value (NPV) and positive predictive value (PPV) of Bladder EpiCheck test were evaluated and compared to cytology and cystoscopy results, taking the confirmatory pathology as the reference standard; when absent, the reference standard was considered positive if there was a clinical decision to start oncologic treatment.

Results: In case of first diagnosis, the diagnostic accuracy appeared comparable among the three approaches, with 100% of sensitivity and NPV rates for all of them. In case of previously (>than 3 months) treated patients, overall sensitivity and NPV of EpiCheck (90.5% and 91.1%) appeared higher than cytology (82.3% and 46.4%) and cystoscopy (83.3% and 68.1%); the same in case of recent treatment (95.6% and 97.3% for EpiCheck, 82.6% and 88.6% for cytology, 52.6% and 75.0% for cystoscopy, respectively). In patients with CIS, sensitivity and NPV did not differ between EpiCheck (88.0% and 87.0%, respectively) and cytology (88.0% and 84.2%, respectively) in previously treated patients, while the differences were higher in case of recent treatment (100% and 100% for EpiCheck vs. 81.8% and 86.7% for cytology, respectively).

Discussion: The Bladder EpiCheck test showed very high diagnostic values, higher than the currently gold standard assessment. The test might clinically improve the BCa management in terms of reduced number of inconclusive/suspicious reports of cytology and endoscopy, reduced number of further examinations, reduced associated patient and economic burdens. The non-invasive and not expensive Bladder EpiCheck should be incorporated in standard BCa follow-up setting.