



## Wake-up call for more doctor–patient communication and an increase in public information campaigns on the risk factor of smoking with regard to the development and prognosis of bladder cancer

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Dear Editor,

It was with great interest that we read the recently published data in the World Journal of Urology from the renowned Melbourne working group headed by Nathan Lawrentschuk [1]. In this study, a survey was presented with 10 descriptive and 24 explorative items for the assessment of patients' knowledge about the risk factor of smoking in general and in particular regarding urological aspects. Between November 2015 and March 2016, a total of 134 patients with either benign or malignant urological diseases took part in this survey; 112 of them could then be included in the final data analysis. As a result of the study, the Australian colleagues reported that smoking was named by 95% of patients as a risk factor for lung cancer, but only 46% identified smoking as a risk factor for urothelial carcinoma of the bladder (UCB) [1]. It is justified to ask: what is going wrong in the UCB information campaigns and in the targeted doctor–patient communication on this subject, which is so extremely important for both tumour prevention and the course of the disease?

These data that alarm the urological community are by no means an “Australian problem”, as our German working group arrived at very similar results [2–5]. For this, we supplied a survey comprising 23 explorative items

developed with the aim of assessing knowledge and awareness level of urologic in-house patients with histologically confirmed genitourinary malignancy (UCB, renal cancer, prostate cancer, and testicular cancer) on the association of their tumour (and other urological tumours) with smoking (concerning tumour development and prognosis). Selective questions were integrated to assess (1) the manner and the extent of medical consultations conducted here and (2) the resources provided to patients for smoking interruption or cessation. Former smokers were asked for the reasons that had led them to stop smoking, and current smokers were questioned on their further intention regarding cigarette consumption. Prior to study initiation, the survey was validated on 25 patients with uro-oncological diseases to confirm the comprehensibility and clarity of questions. Study inclusion criteria were histologic confirmation of a urologic malignancy, the capability of informed consent, and an age of at least 18 years. The study title was defined as “Knowledge of tumour patients regarding the Risk Association of smoking habits and Urological Tumours” (KRAUT study). The study was conducted between September 1st 2013 and December 31st 2014 in two urological departments (Caritas St. Josef Medical Center, University Regensburg; St. Elisabeth Hospital Straubing). In addition to the 23 items of the survey, demographic, clinical, and oncological information was obtained from all enrolled 258 patients (UCB,  $n = 88$ ; renal cancer,  $n = 34$ ; prostate cancer,  $n = 124$ ; testicular cancer,  $n = 12$ ).

One of our goals was to define patient-specific criteria which could be of assistance to the doctor in their consultation with smokers among the urological tumour patients. According to our data, female and younger patients with urological tumours were more motivated to stop smoking or reduce the number of cigarettes because of their tumour disease (or had already done so) [5]. If our results are now compared with those of the Australian colleagues, our data

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**Table 1** Multivariate logistic regression models with establishment of the influence of sex, age and smoker status on the two endpoints **a** “Smoking is known as a risk factor for the development of bladder cancer” and **b** “Smoking is known as a risk factor for the disease course of bladder cancer” in a survey study on 258 patients with urological tumour disease (urothelial carcinoma of the bladder,  $n=88$ ; renal cancer,  $n=34$ ; prostate cancer,  $n=124$ ; testicular cancer,  $n=12$ )

Variable	OR (95% CI)	<i>p</i>	<i>p</i> (bootstrap-corrected)
<b>a. Smoking is known as a risk factor for the development of bladder cancer</b> [Of 258 patients, 83 patients (32.2%) reached the endpoint <b>a</b> .]			
Male ( $n=226$ , 87.6%)	Reference	–	–
Female ( $n=32$ , 12.4%)	0.50 (0.30–0.81)	0.005	0.008
Age quartile 1 (< 58 years) ( $n=58$ , 22.5%)	Reference	–	–
Age quartile 2 (58–65 years) ( $n=82$ , 31.8%)	1.05 (0.54–2.04)	0.878	0.871
Age quartile 3 (> 65–71 years) ( $n=64$ , 24.8%)	1.05 (0.51–2.19)	0.890	0.895
Age quartile 4 (> 71 years) ( $n=54$ , 20.9%)	0.72 (0.33–1.55)	0.398	0.409
Non-smoker ( $n=98$ , 32%)	Reference	–	–
Former smoker ( $n=99$ , 38.4%)	1.19 (0.67–2.13)	0.557	0.549
Active smoker ( $n=61$ , 23.6%)	1.49 (0.76–2.94)	0.248	0.241
<b>b. Smoking is known as a risk factor for the disease course of bladder cancer</b> [Of 258 patients, 75 patients (29.1%) reached the endpoint <b>b</b> .]			
Male ( $n=226$ , 87.6%)	Reference	–	–
Female ( $n=32$ , 12.4%)	0.60 (0.37–0.97)	0.039	0.049
Age quartile 1 (< 58 years) ( $n=58$ , 22.5%)	Reference	–	–
Age quartile 2 (58–65 years) ( $n=82$ , 31.8%)	0.68 (0.35–1.33)	0.265	0.280
Age quartile 3 (> 65–71 years) ( $n=64$ , 24.8%)	0.71 (0.34–1.49)	0.369	0.390
Age quartile 4 (> 71 years) ( $n=54$ , 20.9%)	0.37 (0.16–0.84)	0.017	0.026
Non-smoker ( $n=98$ , 32%)	Reference	–	–
Former smoker ( $n=99$ , 38.4%)	1.40 (0.77–2.55)	0.272	0.291
Active smoker ( $n=61$ , 23.6%)	1.15 (0.57–2.31)	0.696	0.725

for lung cancer are as follows: 65% identified smoking as the main risk factor in the pathogenesis, a further 10% considered it possible, and 25% did not know the answer (not a single patient ruled out smoking as a risk factor for lung cancer!). For UCB, however, we analysed the following results: 10% of the patients identified smoking as the main risk factor, a further 22% considered it a possible risk factor, and 53% did not know the answer (15% of the patients, on the other hand, clearly ruled out smoking as a risk factor for UCB!). The knowledge about smoking as a risk factor for the disease course of UCB is similarly poor: 29% of the patients considered it a risk factor and 54% did not know the answer (17% of patients even ruled it out completely as a risk factor!). Bootstrap-corrected, multivariate logistic regression models were then formed for the two endpoints: (a) “Smoking is known as a risk factor for the development of UCB” and (b) “Smoking is known as a risk factor for the course of the disease of UCB (recurrence and/or progression)”, and were adjusted according to the predictors of sex, patient’s age (categorised in the four age quartiles) and smoker status (non-smoker, former smoker, and active smoker). For the endpoints A and B, the female urological patients showed in comparison with their male counterparts knowledge that was reduced by 50% ( $p=0.005$ ) and 40% ( $p=0.039$ ), respectively (Table 1). Patients in the highest age quartile (> 71 years) in comparison with patients in the

reference category (< 58 years) showed reduced knowledge by 63% ( $p=0.017$ ) regarding endpoint B (Table 1).

The work of Khan et al. and also our KRAUT study are extremely important as they are a wake-up call. Both studies show how little this eminently important subject on the simple prevention of UCB or prognosis improvement in diagnosed tumours is spoken about during the daily routine with urological patients (or how limited patient knowledge is here). It should thus be encouraged that we speak clearly about the connection between smoking and UCB with every patient that consults with us and that public general information campaigns are also carried out here (to achieve a similar awareness here as has already been attained for lung cancer). Every urologist should aspire, on the one hand, to face their patient as the primary contact person for setting up the individual therapy management of their urological disease, yet, on the other hand, to be a competent advisor for him/her on the reduction of modifiable lifestyle risk factors. The negative impact of smoking on the development of UCB, upper urinary tract carcinoma (UUTC), renal cancer, and penile cancer, the disease course of UCB, UUTC, and prostate cancer, and the increase of erectile dysfunction and cardiovascular morbidity has been known for many years—it is high time to begin sufficient dialogues about this with our urological patients.

**Author contribution statement** MM, CG, and MB: protocol/project development; PJS, OM, and MKD: data collection or management; MM and MKD: data analysis; and CG, PJS, OM, MKD, MB, and MM: manuscript writing/editing.

### Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

**Research involving human participants and/or animals** The study was in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments. Informed consent was affirmed from all individual participants included in the study and ethical committee approval was obtained (BLAEK-EC No. 13012).

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