Letter to the editor

Re: "Multiparametric cystoscopy: opportunities to enhance bladder cancer detection"

Maximilian Christian Kriegmair[1], Christian Bolenz[2]

[1]Department of Urology, University Medical Centre Mannheim, Mannheim, Germany; [2]Department of Urology, University of Ulm, Ulm, Germany
Correspondence to: Maximilian Christian Kriegmair. Department of Urology, University Medical Hospital Mannheim, Theodor-Kutzer-Ufer 1-3, 68167, Mannheim, Germany. Email: maximilian.kriegmair@medma.uni-heidelberg.de.
Response to: Taylor J, Matulewicz RS. Multiparametric cystoscopy: opportunities to enhance bladder cancer detection. Transl Androl Urol 2020. doi: 10.21037/tau-20-848

Submitted May 06, 2020. Accepted for publication Jun 05, 2020.
doi: 10.21037/tau-20-915
View this article at: http://dx.doi.org/10.21037/tau-20-915

We appreciate the comment on our study on multiparametric cystoscopy for the detection of bladder cancer.

The main goal of "enhanced" white light cystoscopy is to improve detection rates and to achieve complete resection, thus avoiding residual cancer in the urinary bladder.

Real-time multispectral endoscopic imaging (rMSI) and the idea of multiparametric cystoscopy is in the very early stages of development (1). Further studies are required to evaluate its potential adoption into routine clinical practice. Assuming that an added value for bladder cancer detection exists, the acceptance and diffusion of any new technologies are highly dependent on whether it is easy and safe to handle for clinicians. Without any doubt multiparametric cystoscopy has a learning curve. The single modalities we applied (white light, PDD and NBI-like) are well known in the urological community and widely accepted in clinical practice (2). Therefore, we expect a maximum number of 50 cases required to sufficiently decrease the number of false positive findings on multiparametric cystoscopy similar to PDD. We also agree on the potential improvements by applying artificial intelligence (AI) in conjunction with multiparametric endoscopy. AI may both increase the accuracy of tumor detection and allow for the development of computer-aided diagnosis to guide surgeons during multiparametric TUR-BT (3,4).

Multiple tools have been suggested to further enhance tumor detection rates. In principle, the combination of multiparametric cystoscopy with probe-based techniques such as confocal laser endomicroscopy (CLE) or optical coherence tomography (OCT) is possible. Indeed, these techniques can increase diagnostic accuracy, in particular specificity. However, probe-based techniques have limitations. The small range of the probe may lead to significantly longer operating times. Given the low morbidity and good histological quality of biopsies in the urinary bladder, the additional value of these techniques is questionable. However, we believe that CLE and OCT have large benefits in the upper urinary tract where biopsies are challenging and of very limited quality (5).

The careful integration of available tools into clinical trials will help to test their added value for bladder cancer detection and resection. Multiparametric cystoscopy can be regarded as an integrative device. Real-time imaging of multiple signals of different origins, including fluorescence-labeled antibodies, offers great opportunities. This unique feature of rMSI technology warrants further investigation.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer review: This article was commissioned by the editorial office, *Translational Andrology and Urology*. The article did not undergo external peer review.

Conflicts of Interest: Both authors have completed the ICMJE uniform disclosure form (available at http://dx.doi.

org/10.21037/tau-20-915). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Cite this article as: Kriegmair MC, Bolenz C. Re: "Multiparametric cystoscopy: opportunities to enhance bladder cancer detection". Transl Androl Urol 2020;9(5):2318-2319. doi:10.21037/tau-20-915

References

1. Tully K, Palisaar RJ, Brock M, et al. Transurethral resection of bladder tumours: established and new methods of tumour visualisation. Transl Androl Urol 2019;8:25-33.
2. Waldbillig F, Hein S, Grüne B, et al. Current European Trends in Endoscopic Imaging and Transurethral Resection of Bladder Tumors. J Endourol 2020;34:312-21.
3. Gosnell ME, Polikarpov DM, Goldys EM, et al. Computer-assisted cystoscopy diagnosis of bladder cancer. Urol Oncol 2018;36:8.e9-15.
4. Shkolyar E, Jia X, Chang TC, et al. Augmented Bladder Tumor Detection Using Deep Learning. Eur Urol 2019;76:714-8.
5. Klein JT, Berger F, Linzenbold W, et al. Cryobiopsy in the Upper Urinary Tract: Preclinical Evaluation of a Novel Device. Urology 2019;123:273-9.

