Bladder Cancer

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Bladder cancer is the ninth most common malignancy worldwide [1]. It is a diverse disease with differing outcomes related to its underlying basic biology, responsiveness to therapy, and host-related factors. As a result, the spectrum of disease ranges from a relatively benign entity that is more bothersome than anything to a lethal variant with great metastatic potential. For these reasons, early detection, markers of disease outcome, and good surgical and medical therapies are paramount to impacting its natural history. Over the last 30 years, advances in endoscopic and surgical technique together with discoveries with immuno- and chemotherapy have resulted in substantial improvements to the care of patients suffering from this disease. With emerging techniques in outcomes research and with better access to tissue banks, better markers for disease outcome hold great promise to reconcile some of the heterogeneity seen. In this series of papers, we have highlighted recent discoveries that establish a new and emerging standard of care for the management of bladder cancer patients. These papers also demonstrate shortcomings of our current care thus reminding us, the scientific community, that we can never be complacent. We can and should do better!

The use of high-resolution and multiwavelength endoscopic cameras has resulted in the best ever image quality. Despite this, it can be challenging to distinguish areas of inflammation from *carcinoma in situ* and to ensure complete resection at the time of transurethral resection of bladder tumor. Among the selected papers, P. Patel et al. reviewed the use of photodynamic techniques to further enhance cancer detection rates. These may allow for a superior diagnostic assessment via cystoscopy and complete tumor resection/eradication. However, these improved technologies come at a financial cost as well as raise questions pertaining to whether this truly alters the natural history and metastatic potential imparted by such typically low-volume and/or grade occult bladder tumors.

Due mainly to surveillance and the escalating costs of healthcare, bladder cancer is one of the most expensive malignancies to diagnose and treat [2, 3]. Urine-based markers may mitigate some of these costs in the future by allowing for infrequent (if any) endoscopic evaluation and may, like photodynamic technologies, allow for the discovery of tumors missed by conventional cystoscopy. J. Parker and P. E. Spiess cover the topic of bladder tumor markers in a thorough review.

Once discovered by endoscopy, the aforementioned varied natural history of these tumors can lead to treatment dilemmas especially for patients with high-grade, nonmuscle-invasive bladder cancers. These tumors have high recurrence and progression rates and carry the risk of being understaged with potential fatal consequences [4]. Highlighting the challenge of managing patients with high-grade nonmuscle-invasive bladder cancer, the role for repeat resection and the recognition of BCG failure were reviewed by the preeminent experts in the field Drs. H. W. Herr and M. A. O'Donnell, respectively.

After the recognition of muscle invasion or the acceptance that the risk of nonmuscle-invasive disease is intolerable, radical cystectomy must be considered. This life saving treatment has been marred

with substantial morbidity and mortality, which have not been improved in decades [5]. Robotic-assisted, laparoscopic approaches may represent a significant advance as compared to the open approach. Richards and colleagues review the early experience with this new technique holding great promise to decrease the burden of this effective treatment.

Finally, when patients present with locally advanced or metastatic disease, neoadjuvant/adjuvant or salvage chemotherapy should be considered. Urologists counseling their patients often poorly understand the subtleties of the risks and benefits of this toxic, systemic approach as well as the agents available in the armamentarium. The paper by Drs. C. Constantini and F. Millard sheds some light on the subject providing a practical, clinician-focused approach to the management of patients with aggressive disease.

With up to 50% of patients presenting for radical cystectomy dying of bladder cancer at 5 years, clearly we have significant room for improvement in terms of prevention, early detection, and treatment of our patients [6]. We have chosen to focus our discussions on two areas of future research, which may help reduce this alarming rate of cancer-specific mortality.

Some of the greatest challenge that urologists and their patients face is to reconcile the heterogeneity of this disease and how aggressively patients should be managed in a stage-specific and/or risk-stratified fashion. One area of research that has the potential to bear fruit is biomarkers, a topic elegantly reviewed by Drs. R. F. Youssef and Y. Lotan.

Another area of discovery that has the potential to further our understanding of the biology of bladder cancer and provide for future therapeutic targets is research into bladder and bladder cancer stem cells as reviewed by Dr. R. T. Bryan.

I would like to thank the authors for their tremendous work in reviewing the body of literature that they have helped to contribute to. It is thanks to them and researchers like them that we have such a high level of care for this debilitating and possibly lethal disease. Despite this, much work lies ahead for researchers striving to make meaningful contributions to our field as it pertains to this complex disease and its heavily burdened patient population.

A. Karim Kader

REFERENCES

- [1] IARC, "Cancer Incidence, Mortality and Prevalence Worldwide (2002 estimates)," GLOBOCAN, 2002, <http://globocan.iarc.fr/>.
- [2] G. F. Riley, A. L. Potosky, J. D. Lubitz, and L. G. Kessler, "Medicare payments from diagnosis to death for elderly cancer patients by stage at diagnosis," *Medical Care*, vol. 33, no. 8, pp. 828–841, 1995.
- [3] M. F. Botteman, C. L. Pashos, A. Redaelli, B. Laskin, and R. Hauser, "The health economics of bladder cancer: a comprehensive review of the published literature," *PharmacoEconomics*, vol. 21, no. 18, pp. 1315–1330, 2003.
- [4] M. S. Cookson, H. W. Herr, Z. F. Zhang, S. Soloway, P. C. Sogani, and W. R. Fair, "The treated natural history of high risk superficial bladder cancer: 15- year outcome," *Journal of Urology*, vol. 158, no. 1, pp. 62–67, 1997.
- [5] N. Lawrentschuk, R. Colombo, O. W. Hakenberg et al., "Prevention and management of complications following radical cystectomy for bladder cancer," *European Urology*, vol. 57, no. 6, pp. 983–1001, 2010.
- [6] J. P. Stein and D. G. Skinner, "Results with radical cystectomy for treating bladder cancer: a 'reference standard' for high-grade, invasive bladder cancer," *BJU International*, vol. 92, no. 1, pp. 12–17, 2003.

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