

Contemporary Patterns of Multidisciplinary Care in Patients With Muscle-invasive Bladder Cancer

Lauren C. Harshman,¹ Abhishek Tripathi,¹ Matthew Kaag,² Jason A. Efstathiou,³ Andrea B. Apolo,⁴ Jean H. Hoffman-Censits,⁵ Walter M. Stadler,⁶ Evan Y. Yu,⁷ Bernard H. Bochner,⁸ Eila C. Skinner,⁹ Tracy Downs,¹⁰ Anne E. Kiltie,¹¹ Dean F. Bajorin,⁸ Khurshid Guru,¹² William U. Shipley,³ Gary D. Steinberg,⁶ Noah M. Hahn,¹³ Srikala S. Sridhar¹⁴

Abstract

Multidisciplinary care is crucial for the optimal treatment of patients with muscle-invasive bladder cancer. We surveyed practitioners regarding the multidisciplinary care models currently used in their practices. Most providers used some form of multidisciplinary care, with sequential clinic visits on different days the most common approach. However, most providers preferred an integrated multidisciplinary care protocol involving same-day concurrent or sequential clinic visits.

Background: Multidisciplinary clinics integrate the expertise of several specialties to provide effective treatment to patients. This exposure is especially relevant in the management of muscle-invasive bladder cancer (MIBC), which requires critical input from urology, radiation oncology, and medical oncology, among other supportive specialties.

Materials and Methods: In the present study, we sought to catalog the different styles of multidisciplinary care models used in the management of MIBC and to identify barriers to their implementation. We surveyed providers from academic and community practices regarding their currently implemented multidisciplinary care models, available resources, and perceived barriers using the Bladder Cancer Advocacy Network and the Genitourinary Medical Oncologists of Canada e-mail databases. **Results:** Of the 101 responding providers, most practiced at academic institutions in the United States (61%) or Canada (29%), and only 7% were from community practices. The most frequently used model was sequential visits on different days (57%), followed by sequential same-day (39%) and concurrent (1 visit with all providers; 22%) models. However, most practitioners preferred a multidisciplinary clinic involving sequential same-day (41%) or concurrent (26%) visits. The lack of clinic space (58%), funding (41%), staff (40%), and time (32%) were the most common barriers to implementing a multidisciplinary clinic. **Conclusion:** Most surveyed practitioners at academic centers use some form of a multidisciplinary care model for patients with MIBC. The major barriers to more integrated multidisciplinary clinics were limited time and resources rather than a lack of provider enthusiasm. Future studies should incorporate patient preferences, further evaluate practice patterns in community settings, and assess their effects on patient outcomes.

Clinical Genitourinary Cancer, Vol. ■, No. ■, ■-■ © 2017 Elsevier Inc. All rights reserved.

Keywords: Bladder cancer, Chemotherapy, Cystectomy, Multidisciplinary clinic, Radiation

L.C.H. and A.T. are co-first authors.

¹Lank Center for Genitourinary Oncology, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA

²Penn State Milton S. Hershey Medical Center, Hershey, PA

³Massachusetts General Hospital, Harvard Medical School, Boston, MA

⁴National Cancer Institute, National Institutes of Health, Bethesda, MD

⁵Sidney Kimmel Cancer Center, Thomas Jefferson University, Philadelphia, PA

⁶The University of Chicago, Chicago, IL

⁷Fred Hutchinson Cancer Research Center, Seattle, WA

⁸Memorial Sloan Kettering Cancer Center, New York, NY

⁹Stanford University School of Medicine, Stanford, CA

¹⁰University of Wisconsin, Madison, WI

¹¹Cancer Research UK/Medical Research Council, Oxford Institute for Radiation Oncology, Oxford, United Kingdom

¹²Roswell Park Cancer Institute, Buffalo, NY

¹³Johns Hopkins University School of Medicine, Baltimore, MD

¹⁴Princess Margaret Cancer Centre, Toronto, ON, Canada

Submitted: Aug 17, 2017; Revised: Nov 16, 2017; Accepted: Nov 27, 2017

Address for correspondence: Lauren C. Harshman, MD, Lank Center for Genitourinary Oncology, Dana-Farber Cancer Institute, 450 Brookline Avenue, Boston, MA 02215

E-mail contact: LaurenC_Harshman@dfci.harvard.edu

Multidisciplinary Care in Bladder Cancer

Introduction

Globally, bladder cancer comprises approximately 450,000 new cases and 165,000 deaths every year.¹ One third of patients will present with muscle-invasive disease, for which radical cystectomy remains a cornerstone of curative treatment.^{2,3} Complementing cystectomy with cisplatin-based perioperative chemotherapy can further improve outcomes by enhancing local control and eliminating micrometastatic disease.⁴⁻⁸ In carefully selected patients without high-risk features, an alternative approach is bladder preservation, which often incorporates a trimodality strategy of maximal transurethral resection of bladder tumor, followed by induction and/or concurrent chemotherapy and radiation, which can result in outcomes comparable to those with radical cystectomy.⁹⁻¹¹

The treatment of patients with muscle-invasive bladder cancer (MIBC) can be challenging. Providers must consider the often older age of bladder cancer patients (median age, ~73 years), with their resultant competing comorbidities. Patient preferences can have a significant influence on treatment decisions as well, especially in terms of the importance of bladder preservation. Factors that can influence patient choice include the potential morbidities of the different treatments and the effect on their quality of life, sexual function, and changes in body morphology and body image. Shared decision making that values the patient's individual priorities has become increasingly integrated into the creation of treatment plans. A multidisciplinary clinic can be instrumental in fostering open communication regarding the potential risks and benefits of the different treatment modalities and can facilitate critical informed and collaborative decision making between patients and their providers.

Previous population-based studies have shown that only one half of patients with MIBC are treated with curative modalities such as cystectomy or curative intent radiation therapy.¹² Among the patients treated with curative intent, incorporation of neoadjuvant chemotherapy has been low in the United States, with contemporary studies reporting its use in only 21% of newly diagnosed MIBC patients despite level 1 evidence of its benefit.^{13,14} The lack of timely referral between specialties has been recognized as a barrier to the uptake of neoadjuvant chemotherapy in several previous studies.¹⁵⁻¹⁷ The institution of a multidisciplinary clinic, in which patients are evaluated by multiple providers on the same day, can potentially mitigate the challenges involved in the referral process among different specialties, thereby increasing the usage of curative treatments, including neoadjuvant chemotherapy and the timely application of local therapies.

The optimal treatment of patients with MIBC mandates an informed discussion with the patient about the risks and benefits of the various options and clear communication between the different oncologic specialties in a multidisciplinary fashion. Achieving this goal requires well-integrated care with patients evaluated by providers from different specialties either concurrently or through sequential visits. The specific model used varies considerably across institutions. In the present study, we sought to characterize the diverse multidisciplinary care models implemented across different institutions and/or to capture their absence. Our secondary goals were to investigate the degree of physician interest in executing a multidisciplinary clinic for managing MIBC and to identify the

potential barriers to delivering the preferred models of multidisciplinary care.

Materials and Methods

We conducted an online survey of providers treating patients with MIBC. We targeted radiation oncologists, urologists, and medical oncologists. The e-mail databases of the Bladder Cancer Advocacy Network and Genitourinary Medical Oncologists of Canada were used to reach out electronically to clinicians in both academic and community practice settings during July and August 2015. The survey consisted of 10 multiple choice questions addressing the multidisciplinary clinic models currently in place, individual provider preferences, available resources, and potential barriers to effectively implementing a multidisciplinary care model (Figure 1; the full survey has been provided in the [Supplemental Material](#)). The providers were allowed to choose multiple options when applicable. Additional free text space was provided for comments if thought necessary by the responders. The data were populated from the online survey into an Excel file, which was used for descriptive analyses. Only de-identified information was used. The response to the survey was considered implied consent, and a formal consent process was not used.

Results

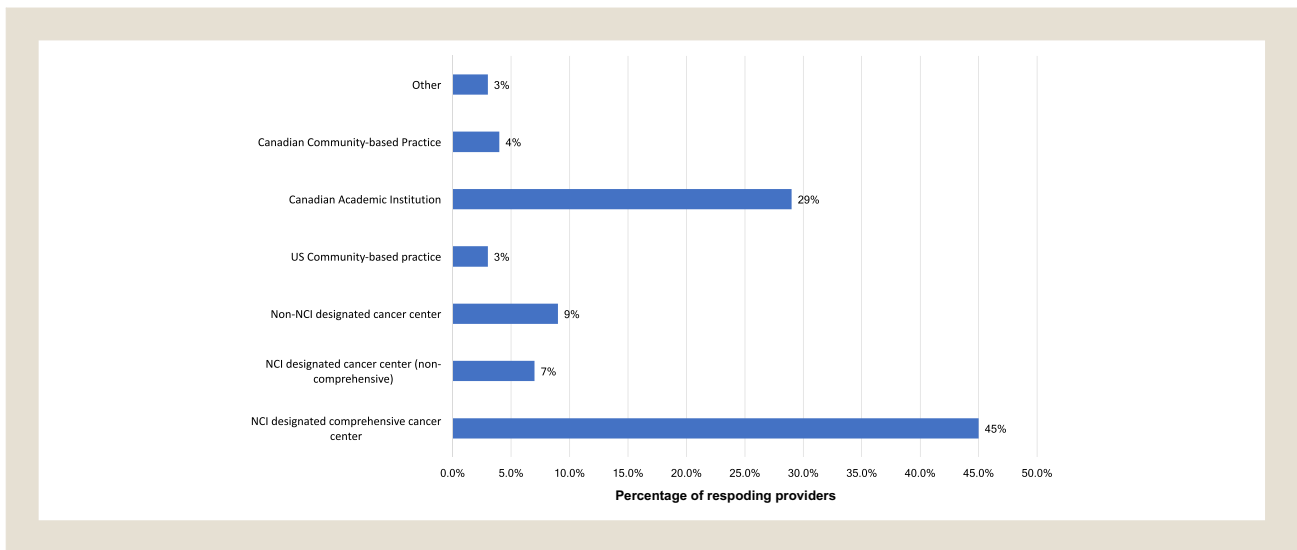
The e-mail surveys were sent out to 344 providers through Bladder Cancer Advocacy Network and Genitourinary Medical Oncologists of Canada. Most were from US or Canadian academic

Figure 1 Survey Used to Capture Multidisciplinary Approaches and Physician Preferences

-
- Q1 Please tell us your contact information. This is optional but preferred data is at least name, institution, and email. All responses will be kept strictly confidential.
- Q2 Please choose the description that best fits the type of your clinical practice:
- Q3 Please estimate the number of muscle invasive bladder cancer patients (e.g., T2N0M0 or TanyN+M0) that are seen each month in your practice? Use a whole number (e.g. 5)
- Q4 What type of multidisciplinary approach does your practice have? Choose multiple if applicable.
- Q5 If you have a multidisciplinary team, what is your preferred approach?
- Q6 Which of the following resources are available to you in your clinic?
- Q7 What resources or barriers do you feel you are lacking that would make a multidisciplinary approach easier to execute or more successful? Choose all that apply.
- Q8 Do you have a mechanism in place by which patients are prepared ahead of time such as with written instructions or a phone call by a clinical nurse specialist to discuss their diagnosis and the rationale behind the multidisciplinary approach?
- Q9 If you have a multidisciplinary clinic, has it enriched your practice?
- Q10 Please add other comments here.

Abbreviation: Q = Question.

Figure 2 Practice Settings of Respondents



institutions, and only 5% ($n = 16$) practiced in the community setting. Close to 30% of the providers ($n = 101$ of 344) completed the survey. Most of the respondents (45%) were from academic National Cancer Institute (NCI)-designated comprehensive cancer centers in the United States, and 29% practiced at Canadian academic institutions (Figure 2). The providers practicing at US or Canadian community-based practices accounted for only 7%. The median number of MIBC patients seen by the participating responders every month was 5 (range, 0-40). In the survey, the providers were asked to report all types of multidisciplinary care models used in their clinics and their preferred type. Two providers were excluded from the final analysis because of a lack of responses for most of the survey.

Of the 99 providers included in the final analysis, the approach used by most responders (57%) was sequential visits on separate days (Table 1). Fully integrated multidisciplinary clinics were

defined as care models that used sequential same-day or concurrent visits with different specialties. Sequential same-day and concurrent visits were incorporated by 39% and 22% of the providers, respectively. Several providers endorsed using > 1 multidisciplinary clinic model at their institution. Overall, 95% of responders reported incorporating visits from multiple specialties in some form. Other less commonly used nonintegrated approaches included informal (“curbside”) consultations either in the clinic (19%) or by e-mail (14%). In terms of preference, most practitioners favored multiple visits on the same day, either sequentially (41%) or concurrently (26%). Most providers endorsed having access to urologic and medical oncology services within the same clinic (61% and 62%, respectively; Table 2). Radiation oncologists were a part of the multidisciplinary clinic in 44% of cases and were available for consultation either in the same building (52%) or by referral (41%). Similarly, most practitioners had access to pathology review, real-time radiology review, and supportive services such as wound/os-tomy care, psychology, and social work in the same clinic or same building or by referral.

Restricted clinic space was the most commonly reported barrier to implementation of a multidisciplinary clinic (58%), followed by a lack of funding (41%), an inadequate number of staff or coordinators (40%), and time constraints (32%; Figure 3). Other less common reasons reported by 23% of the physicians included low patient volumes, physical separation of the different oncologic specialties, perceived inefficiency of the approach, difficulties in communicating the complexities of the decision-making process, and concerns regarding overwhelming the patient and family with large volumes of information from multiple providers at the same visit. From the responses, mechanisms for preparing patients and their families about their upcoming visits appeared to be lacking in most practices. Despite these limitations and possible barriers, the survey demonstrated a strong overall interest toward a team-based multidisciplinary clinic model, and most practitioners believed that it had enriched their practice and enhanced the patient experience.

Table 1 Existing and Preferred Multidisciplinary Clinic Models as Reported by Participating Providers

Variable	Existing Multidisciplinary Model ^a (%)	Preferred Multidisciplinary Model ^b (%)
Sequential, with same day appointments among different specialties	39	41
Sequential, with different day appointments among different specialties	57	15
Concurrent (one-time slot with multiple physicians seeing patient at once)	22	26
Corridor curbside	19	0
E-mail curbside	14	0
None	5	2

^aExisting could include multiple different types of models; thus, sums to > 100%.

^bPreferred model does not equal 100% because not all respondents answered.

Multidisciplinary Care in Bladder Cancer

Table 2 Institutional Resources Available as Part of Multidisciplinary Models

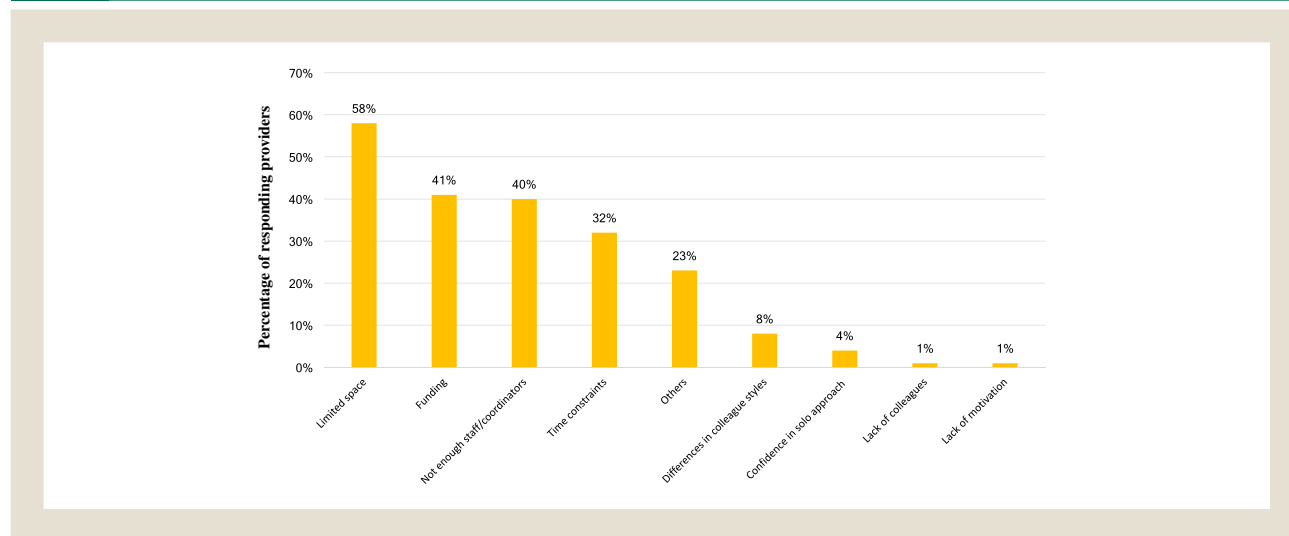
Variable	Available (%)			Not Available (%)
	Within Same Clinic	Within Same Building	By Referral	
Urologic oncologist	62	41	44	2
Medical oncologist	62	44	39	1
Radiation oncologist	44	53	41	1
Pathology	16	56	47	0
Radiology	22	60	43	1
Clinical nurse	56	35	28	14
Wound/ostomy care nurse	25	45	47	3
Psychologist	16	45	58	5
Social worker	29	52	52	2

Discussion

Increasingly, multidisciplinary clinics are being used in the management of malignancies, including bladder cancer. Ideally, this team-based approach permits providers from multiple oncologic specialties to lend their insight regarding the advantages of 1 treatment modality over the other in real time on the same day and promotes a patient-centered decision-making process that balances evidence-based guidelines with individual patient preferences. Specifically, it allows patients to meet with physicians from different oncologic specialties and learn about the relative advantages and disadvantages of each therapeutic approach, with the ultimate goal of enhanced understanding and individualization of the treatment plan. For the physicians involved, it can foster interdisciplinary communication and education, thought-provoking discussion, and improved coordination of care. It is key to distinguish between a truly integrated multidisciplinary clinic in which the patient receives input from different specialties at the same time (concurrent consultation) or same-day versus a less-integrated form in which it spans multiple days or is communicated through only 1 or 2 providers. Most respondents in our analysis (61%) used an integrated multidisciplinary clinic.

Although more effective communication and coordination of care appear to be the most obvious advantages, multidisciplinary care has the ability to potentially affect practice patterns and improve patient outcomes. Levine et al¹⁸ compared the management of colorectal cancer for patients treated in their multidisciplinary clinics to a cohort treated by the same physicians but in their specialty private offices with no concurrent input from other specialties.¹⁸ Patients treated in the multidisciplinary setting were more likely to undergo a more complete preoperative evaluation and to receive multimodality therapy in the perioperative setting. However, improvements or differences in outcomes stratified by the incorporation of multidisciplinary therapy were not reported in that study.

Real-time radiology and institutional pathology review can complement multidisciplinary clinics and can ensure proper staging and histologic diagnosis, which can have significant effect on treatment recommendations. In a study evaluating the influence of a single-day multidisciplinary clinic on management of pancreatic carcinoma, changes in disease staging and pathologic diagnosis were noted in 19% and 3% of patients, respectively, and resulted in a change in treatment recommendations in 24% of cases.¹⁹ Pathologic staging is especially critical in bladder cancer given the

Figure 3 Perceived Barriers to Implementation of a Multidisciplinary Clinic Model*

*Multiple answers permitted

significant differences in the degree of treatment required between noninvasive and muscle-invasive disease. The potential power of concurrent pathologic and multidisciplinary input was illustrated by a study of a single-institution multidisciplinary clinic, in which changes in diagnosis and treatment plan were observed in 23% and 44% of bladder cancer patients, respectively.²⁰

A prime example of how a multidisciplinary model can influence treatment recommendations is the increase in the usage of neoadjuvant chemotherapy in MIBC. Despite level 1 randomized clinical trial data supporting its clinical benefits, preoperative systemic therapy has traditionally had poor uptake in contemporary studies.^{13,14} This low usage has been attributed to patient-related factors (eg, age, comorbidities, and stage), physician disbelief in the degree of benefit, and referral patterns at nonacademic institutions.^{15,17} A previous survey of genitourinary medical oncologists in Canada revealed that the referral rates for neoadjuvant chemotherapy were the greatest in the setting of an established care pathway or a multidisciplinary clinic.¹⁶ Supporting this observation, other studies have demonstrated a significant increase in adherence to guidelines and usage of neoadjuvant chemotherapy with the initiation of a multidisciplinary model.^{21,22}

Finally, multidisciplinary clinics can provide an opportunity for critical review of existing data among the different specialists. They can foster an environment in which outstanding questions and challenging clinical issues can be identified, and research studies to address them can be developed. The effect of multidisciplinary clinics on outcomes has not been evaluated in patients with MIBC. Gomella et al²³ reported improved survival in patients with prostate cancer who were treated in their multidisciplinary clinic compared with outcomes reported in Surveillance, Epidemiology, and End Results database.²³ Although it has not been evaluated in MIBC patients, it makes sense that multidisciplinary care could also have a significant effect on outcomes in patients with bladder cancer and should be prospectively evaluated.

Multidisciplinary clinics do have disadvantages. They are resource intensive and time consuming. Coordinating the schedules of 2 to 3 busy specialists with patient preferences is no small feat. Same-day appointments risk overwhelming the patient and their families with information overload. Although a comprehensive presentation of all available options would seem ideal, for some patients it can be confusing, especially if a consensus or uniform message is lacking among the involved specialties.

In our sampling, most respondents reported that the lack of adequate space, funding, and support staff were the most significant barriers to their implementation of multidisciplinary care. Although most providers had access to radiation, medical, and urologic oncologists in the same clinic, real-time access to radiology, pathology, wound care, psychologists, and social workers was somewhat limited and only available by referral for most cases. These are modifiable factors and by potentially increasing access or more efficient usage of the available resources, the multidisciplinary care model could be implemented in a much larger scale across different institutions and settings.

Although our study has provided important insights into the current practice patterns, it had several limitations. Most practitioners who received the survey and responded practiced in academic or NCI-designated institutions, and community providers

were underrepresented. It is possible that providers from academic institutions with multidisciplinary clinics already in place were more likely to respond than were community practitioners. However, the response rate among the 16 community providers invited to participate in the survey ($n = 7$; 43%) was greater than that among the 328 providers from NCI-designated, non-NCI-designated US and Canadian academic institutions ($n = 94$; 29%), making such a bias unlikely. However, the sampling of non-community-based practices was significantly larger. As such, the results of our survey reflect the practice patterns in academic institutions, and further characterization of the use of multidisciplinary clinics is needed in the community setting. Our study did not survey patients; however, gathering their input is critical to designing effective interventions and is a planned component of a future investigation by our group. Specifically, although most providers preferred same-day concurrent or sequential visits, it remains unclear whether such an approach would be desirable for patients, because they might be overwhelmed and fatigued by multiple provider visits on the same day. Ultimately, it is unlikely that a one size fits all model will work for all patients and institutions, and these approaches will need to be tailored to the individual practice and patient preferences.

Conclusion

Prospective study of multidisciplinary clinics and approaches is required to prove that they enhance clinical outcomes and are worthy of the intensive resources needed. Future objectives of our working group include gauging patient preferences, developing strategies to overcome potential barriers, identifying examples of successful multidisciplinary clinics in both academic and nonacademic settings, and integrating these results with patient preferences to optimize patient care and outcomes.

Clinical Practice Points

- Most academic practitioners treating patients with MIBC incorporate a multidisciplinary clinic.
- The most common form of multidisciplinary clinic was sequential visits with different specialists over multiple days; however, most practitioners preferred a sequential same-day or concurrent approach.
- The lack of clinic space, staff, and time constraints were the major perceived barriers to implementation of a multidisciplinary clinic.
- Future studies should focus on surveying patient preferences, evaluating practice patterns in the community setting, and assessing the effect of these approaches on outcomes.

Acknowledgments

The authors are grateful to the Bladder Cancer Advocacy Network and the Genitourinary Medical Oncologists of Canada for their assistance in sending out the survey to practitioners through their e-mail databases.

Disclosure

L.C.H. reports advisory role for Bayer, Genentech, Dendreon, Pfizer, Medivation/Astellas, Kew Group, Theragene, Corvus,

Multidisciplinary Care in Bladder Cancer

Merck, and Exelixis; research to the institution for Bayer, Sotio, Bristol-Myers Squibb, Merck, Takeda, Dendreon/Valient, Janssen, Medivation/Astellas, Genentech, and Pfizer; and Continuing Medical Education for Physician Education Resource (PER), Applied Clinical Education. J.A.E. reports a consultancy role for Taris Biomedical; advisory role for Genentech, EMD Serono/Pfizer; Co-Chair on the National Cancer Institute Bladder Task Force; and member of the NRG Genitourinary Core Committee. J.H.H.-C. reports medical writing services for Genentech; and consultancy role for Clovis Oncology and Foundation Medicine. W.M.S. reports consultancy role for Astra-Zeneca, Bayer, Bristol-Myer Squibb, Caremark/CVS, ClearLight Diagnostics, Eisai, Genentech (Roche), Pfizer, and Sotio; grant/research support (to institution) from Astra-Zeneca, Astellas/Medivation, Bayer, Bristol-Myers Squibb, Boehringer-Ingelheim, Concept, Dendreon, Exelixis, Genentech (Roche), Johnson & Johnson (Janssen), Merck, Novartis, Pfizer, Takeda, and X4Pharmaceuticals; and miscellaneous/editorial services to Cancer (ACS), Up-To-Date. E.Y.Y. reports personal honorarium from Janssen, Dendreon, Sanofi-Aventis, Medivation, Bayer, Tolmar, Seattle Genetics, Merck, Genentech/Roche, Tokai, Agensys, Ferring, Lilly/Imclone, AstraZeneca, EMD Serono, and Churchill; and research funding (to institution) from Dendreon, Bayer, Agensys, Genentech/Roche, Merck, and Lilly/Imclone. G.D.S. reports scientific advisor/consultancy role for Heat Biologics, Cold Genesys, PhotoCure, Merck, Roche/Genentech, Ciclomed, Taris Biomedical, MDxHealth, Fidia Pharmaceuticals, Urogen, Spectrum Pharmaceuticals, Telesta, Biocancell, and Epivax Oncology. N.M.H. reports research funding (to institution) from Novartis, OncoGeneX, Mirati, Merck, Genentech, BMS, Heat Biologics, Acerta, AstraZeneca, and Principia Biopharma; and consultancy role for OncoGeneX, AstraZeneca, Merck, Bristol-Meyer Squibb, Genentech, Inovio, Principia Biopharma, Champions Oncology, Health Advances, TARIS Biomedical, Seattle Genetics, Incyte, TransMed, and Rexahn. S.S.S. reports advisory role for Bayer, Astellas, Roche, Astra Zeneca, and Merck. The remaining authors declare that they have no competing interests.

Supplemental Data

The supplemental material accompanying this article can be found in the online version at [10.1016/j.clgc.2017.11.004](https://doi.org/10.1016/j.clgc.2017.11.004).

References

- McGuire S. World Cancer Report 2014. Geneva, Switzerland: World Health Organization, International Agency for Research on Cancer, WHO Press, 2015. *Adv Nutr* 2016; 7:418-9.
- Kirkali Z, Chan T, Manoharan M, et al. Bladder cancer: epidemiology, staging and grading, and diagnosis. *Urology* 2005; 66:4-34.
- Stein JP, Lieskovsky G, Cote R, et al. Radical cystectomy in the treatment of invasive bladder cancer: long-term results in 1,054 patients. *J Clin Oncol* 2001; 19:666-75.
- International Collaboration of Trialists; Medical Research Council Advanced Bladder Cancer Working Party (now the National Cancer Research Institute Bladder Cancer Clinical Studies Group); European Organisation for Research and Treatment of Cancer Genito-Urinary Tract Cancer Group. International phase III trial assessing neoadjuvant cisplatin, methotrexate, and vinblastine chemotherapy for muscle-invasive bladder cancer: long-term results of the BA06 30894 trial. *J Clin Oncol* 2011; 29:2171-7.
- Grossman HB, Natale RB, Tangen CM, et al. Neoadjuvant chemotherapy plus cystectomy compared with cystectomy alone for locally advanced bladder cancer. *N Engl J Med* 2003; 349:859-66.
- Advanced Bladder Cancer Meta-analysis Collaboration. Neoadjuvant chemotherapy in invasive bladder cancer: a systematic review and meta-analysis. *Lancet* 2003; 361:1927-34.
- Leow JJ, Martin-Doyle W, Rajagopal PS, et al. Adjuvant chemotherapy for invasive bladder cancer: a 2013 updated systematic review and meta-analysis of randomized trials. *Eur Urol* 2014; 66:42-54.
- Sternberg CN, Skoneczna I, Kerst JM, et al. Immediate versus deferred chemotherapy after radical cystectomy in patients with pT3-pT4 or N+ M0 urothelial carcinoma of the bladder (EORTC 30994): an intergroup, open-label, randomised phase 3 trial. *Lancet Oncol* 2015; 16:76-86.
- Mak RH, Hunt D, Shipley WU, et al. Long-term outcomes in patients with muscle-invasive bladder cancer after selective bladder-preserving combined-modality therapy: a pooled analysis of Radiation Therapy Oncology Group protocols 8802, 8903, 9506, 9706, 9906, and 0233. *J Clin Oncol* 2014; 32:3801-9.
- Efstathiou JA, Spiegel DY, Shipley WU, et al. Long-term outcomes of selective bladder preservation by combined-modality therapy for invasive bladder cancer: the MGH experience. *Eur Urol* 2012; 61:705-11.
- Kulkarni GS, Hermans T, Wei Y, et al. Propensity score analysis of radical cystectomy versus bladder-sparing trimodal therapy in the setting of a multidisciplinary bladder cancer clinic. *J Clin Oncol* 2017; 35:2299-305.
- Gray PJ, Fedewa SA, Shipley WU, et al. Use of potentially curative therapies for muscle-invasive bladder cancer in the United States: results from the National Cancer Data Base. *Eur Urol* 2013; 63:823-9.
- Zaid HB, Patel SG, Stimson CJ, et al. Trends in the utilization of neoadjuvant chemotherapy in muscle-invasive bladder cancer: results from the National Cancer Database. *Urology* 2014; 83:75-80.
- Reardon ZD, Patel SG, Zaid HB, et al. Trends in the use of perioperative chemotherapy for localized and locally advanced muscle-invasive bladder cancer: a sign of changing tides. *Eur Urol* 2015; 67:165-70.
- Miles BJ, Fairey AS, Eliasziw M, et al. Referral and treatment rates of neoadjuvant chemotherapy in muscle-invasive bladder cancer before and after publication of a clinical practice guideline. *Can Urol Assoc J* 2010; 4:263-7.
- Hsu T, Black PC, Chi KN, et al. Treatment of muscle-invasive bladder cancer in Canada: a survey of genitourinary medical oncologists and urologists. *Can Urol Assoc J* 2014; 8:309-16.
- Apolo AB, Kim JW, Bochner BH, et al. Examining the management of muscle-invasive bladder cancer by medical oncologists in the United States. *Urol Oncol* 2014; 32:637-44.
- Levine RA, Chawla B, Bergeron S, Wasvary H. Multidisciplinary management of colorectal cancer enhances access to multimodal therapy and compliance with National Comprehensive Cancer Network (NCCN) guidelines. *Int J Colorectal Dis* 2012; 27:1531-8.
- Pawlik TM, Laheru D, Hruban RH, et al. Evaluating the impact of a single-day multidisciplinary clinic on the management of pancreatic cancer. *Ann Surg Oncol* 2008; 15:2081-8.
- Kurpad R, Kim W, Rathmell WK, et al. A multidisciplinary approach to the management of urologic malignancies: does it influence diagnostic and treatment decisions? *Urol Oncol* 2011; 29:378-82.
- Nayan M, Bhindi B, Yu JL, et al. The initiation of a multidisciplinary bladder cancer clinic and the uptake of neoadjuvant chemotherapy: a time-series analysis. *Can Urol Assoc J* 2016; 10:25-30.
- Rehman S, Crane A, Din R, et al. Understanding avoidance, refusal, and abandonment of chemotherapy before and after cystectomy for bladder cancer. *Urology* 2013; 82:1370-5.
- Gomella LG, Lin J, Hoffman-Censits J, et al. Enhancing prostate cancer care through the multidisciplinary clinic approach: a 15-year experience. *J Oncol Pract* 2010; 6:e5-10.