Exposure to radiation and medical oncology training: A survey of Canadian urology residents and fellows.

Amandeep S. Taggar, MD, MS[1]; Kevin Martell, MD[2]; Siraj Husain, MD[2]; Michael Peacock, MD[3]; Michael Sia, MD[3]; Geoffrey Gotto, MD[4]
[1]Department of Radiation Oncology, Sunnybrook Odette Cancer Centre, University of Toronto, Toronto, ON; [2]Department of Radiation Oncology, Tom Baker Cancer Centre, Calgary, AB;
[3]Department of Radiation Oncology, BC Cancer Agency, Vancouver, BC; [4]Department of Surgery, Division of Urology, University of Calgary, Calgary, AB; Canada

This manuscript was presented in part at the Canadian Urology Association Annual Scientific Meeting in Toronto from June 24-27, 2017. Presentation #MP-10.10

Cite as: *Can Urol Assoc J* 2018 May 28; Epub ahead of print.
http://dx.doi.org/10.5489/cuaj.5147

Published online May 28, 2018

***

Abstract

Introduction: Residency experiences and teaching in oncology among urology residents are variable across Canada. We sought to identify how radiation and medical oncology concepts, as they pertain to genitourinary malignancies, are taught to urology residents.
Methods: A total of 190 trainees enrolled in Canadian urology residency training programs were invited to participate in the study from January 2016 to June 2016. Participants completed an online questionnaire addressing the training they received.
Results: The overall response rate was 32%. Twenty-three percent of respondents were in their fellowship year; 17%, 20%, 10%, 17%, and 12% were first-, second-, third-, fourth-, and fifth-year residents, respectively, with a median of four (range 1–9) respondents from each training program. Ninety-five percent of respondents had academic half-day (AHD) as part of their training that included radiotherapy (61%) and chemotherapy (51%) teaching. Most respondents indicated their main exposure to chemotherapy and radiation came from informal teaching in urology clinics. Twenty-nine percent and 41%, of participants had mandatory rotations in radiation and medical oncology, respectively. Only 6% of respondents used their voluntary elective time in these disciplines and most voluntary electives were of 1–2-week duration. Despite this, 90% of respondents preferred some mandatory radiation and medical oncology training.

Conclusions: Most of the limited exposure that urology residents have to medical and radiation oncology is through AHD or informal urology clinics, despite a desire among current urology trainees to have clinical exposure in these areas. Moving forward, urology residency programs should consider integrating medical and radiation oncology rotations into the residency program curriculum.

Introduction

Royal College of Physicians and Surgeons of Canada (RCPSC) requirements for residency training in urology are justifiably surgery intensive [1]. Generally, it is required that trainees complete 26 blocks in core surgical training, 39 blocks of urology residency training including 3 blocks of research or elective time. RCPSC training requirements also stipulate that urology residency programs may include some rotations in oncology as a subspecialty domain. A typical non-subspecialty urology practice can include up to 50% oncology patients, with prostate cancer being the most common diagnosis in these patients.

Oncology is a highly collaborative and interdisciplinary specialty with patients often seeing several specialists including but not limited to: urologists, radiation oncologists, medical oncologists, and palliative care physicians. There have been numerous surveys about urology residency training and most focus on the surgical experience, research opportunities, psychosocial stress and study habits of the residents enrolled in the residency programs [2–5]. To our knowledge there is no published report of urology residents' exposure to the other subspecialties, mentioned above, with whom the practising urologist may have close working relationships. We sought to identify what training in these subspecialties is available to residents in urology programs in Canada.

The primary objective of this survey was to highlight current training methods whereby urology trainees attain proficiency in oncology topics and identify processes that can be implemented to improve oncologic training of urology residents.

Methods

All Canadian urology residency programs were identified with assistance from the Canadian Urology Association (CUA). A 28-item questionnaire with both open- and closed-ended questions, designed using SurveyMonkey™ (www.surveymonkey.com Palo Alto, CA, USA) was sent to all currently enrolled residents and fellows via the CUA email directory, after obtaining approval from the residency program directors. Reminder emails were sent to all invitees if they had not responded. The survey was conducted between January and June 2016, inclusive.

Questions focused on academic half-day curricula, learning experiences pertaining to oncology subspecialties, mandatory and elective rotations in these subspecialties, opinions and biases regarding current urologic oncology case management. Data were anonymized and amalgamated into a single database and analyzed using Microsoft Excel™ (Seattle, WA, USA) for charting and R version 3.1.3 (www.r-project.org) for descriptive statistics and confidence

intervals of estimates corrected for finite population size of 190 when analyzing the entire cohort and 160 and 40 when analyzing for resident and fellows, respectively.

All data was collected in accordance with the Health Information Act of Alberta after online ethical review using the Alberta Research Ethics Community Consensus Initiative (ARECCI) method [6].

Results

A total of 60 responses were collected (response rate 32%). Fifteen out of 60 respondents (25%) were in their fellowship year and the rest were from various residency years: 10 (17%), 12 (20%), 6 (10%), 10 (17%) and 7 (12%) were from 1st, 2nd, 3rd, 4th and 5th year of their residency, respectively. Seventy-six percent of respondents were male, as compared to only 24% of respondents who were female. Demographically, all major regions of Canada were represented in the survey.

Ninety-five percent of residents reported that they have structured academic half-days (AHDs) as part of their residency curriculum. Didactic teachings during AHD provided the bulk of radiation and medical oncology exposure for the respondents along with informal instruction during regular urology clinics. However, when asked if their structured AHD has dedicated teaching about radiotherapy, chemotherapy and endocrine therapy, only 60% responded "yes". Figure 1 depicts the proportion of resident respondents that have dedicated teaching about oncologic topics during their structured AHD. Other ways in which respondents felt they were exposed to these subspecialties included weekly tumor board conferences (TBCs). When asked "how many times a year do you attend tumor board conference?"; 11 out of 49 (22%) responded they attended more than 21 TBCs per year, another 11 (22%) reported they attended between 11-20 TBCs, and the remaining 56% of respondents attended less than 10 TBCs per year. When considering resident respondents only: 10 out of 42 (24%), 6 (14%) and 26 (62%) attended greater than 21, 11-20 and less than 10 TBCs per year, respectively. Close inspection of the individual responses indicated that trainees in the higher years of training attended higher numbers of TBCs.

When asked about the ways to gain experience in radiation or medical oncology, more than 90% of respondents prefer to do at least some clinical rotations in these disciplines. However, more than half of respondents indicated they had no mandatory or elective rotations in radiation or medical oncology during their residency training, Figure 2.

In order to the gain further understanding of the knowledge acquired by the trainees we asked specific questions about common urologic oncology scenarios. Figure 3 shows an example of two scenarios, where residents were asked to recommend a treatment option for a man presenting with early prostate cancer. In the open-ended scenario, almost all trainees recommended active surveillance to a patient with low-risk disease. However, for the patient who refused active surveillance, 78% all respondents (and 81% of resident respondents) recommended radical prostatectomy (RP), despite no clear evidence that RP is superior to any

other treatment modality and despite 70% of respondents believing that prostatectomy and brachytherapy (BT) would yield similar outcome for low-risk patients (Table 1). For head-to-head comparisons of various treatment modalities, the responses were mixed; most respondents answered that RP was superior to BT for low-tier intermediate risk prostate cancer, but equal to external beam radiotherapy (EBRT). For high-tier intermediate risk and high-risk patients, the responses were again diverse, with half of the respondents answering that RP yielded superior outcome compared EBRT and a further 41% answering that the two modalities would provide equal results.

Discussion

Modern oncology practice requires a highly collaborative approach that involves multiple disciplines. A practising urologist is in essence an oncologic surgeon, as she/he may be involved in treating cancer patients, and most often deals with topics that include radiation and medical oncology discussions. This is the first ever survey of its kind designed to understand methods in which urology trainees acquire knowledge of oncology topics that they would encounter during their practice. We found that academic half day is the primary method of exposure to these topics for residents in Canadian urology programs. Interestingly, up to half of respondents indicated they received no teaching in these areas. Furthermore, most respondents agreed that spending between 2 and 4 weeks of clinical rotation time in radiation and medical oncology would be beneficial to their training.

Although urology training programs across the country vary in their structure and design, they generally focus on core surgical and urology training.[1] There is little dedicated training in radiation and/or medical oncology. Urologists are often the first point of contact for patients and they routinely outline treatment options to their patients including those that may be offered by radiation and/or medical oncologists. In one study it was observed that initial recommendation by a urologist correlate with the treatment received by the patient.[7] The authors of this study also found that the initial patient preference, prior to consultation with the urologist, did not predict for actual treatment received by the patient. Figure 3 and Table 1, for example, highlight scenarios designed to elucidate urology trainees' understanding of various treatments modalities for prostate cancer. Although there is no level 1 evidence that supports one treatment option as superior than the other for low-risk and low-tier intermediate risk patients, more than 50 percent responded that they would recommend RP as they believed it has superior outcomes compared to brachytherapy. This perception is likely based on biases acquired through clinics and informal teaching, rather than evidence. The AUA guidelines state that for a patient with low risk localized prostate cancer, brachytherapy, external beam radiotherapy and radical prostatectomy are appropriate monotherapy options and the outcomes data do not provide a clear-cut evidence for the superiority of any one treatment (www.auanet.org). ProtecT randomized trial showed that there was no difference in clinical progression, incidence of metastases or overall survival between RP or EBRT for low- and low-tier intermediate-risk patients.[8] Therefore, we believe that to better help trainees prepare for discussions involving treatment outcomes, an

understanding of what these treatments involve and outcome comparisons with urologic interventions is/are necessary. In the study regarding patient decision making and global health related quality of life (gHR-QOL), Drummond et al found that an informed patient generally actively participates in shared treatment decision making process, that may lead to better gHR-QOL outcome.[9]

Another approach to an informed patient decision making process is implementation of multidisciplinary care clinics.[10] Aizer et al found that consultation at a multidisciplinary care clinic was associated with significantly increased rate of active surveillance in men with low risk prostate cancer.[11] Others have shown that individual specialists prefer the treatment modality that they themselves deliver.[12,13] Furthermore, Aizer et al also found that the number of physicians and specialities seen at the multidisciplinary clinic was significantly associated with patient's choice of treatment received. Multidisciplinary clinics have also been shown to enhance patient decision and management in other cancers.[14–17] The implementation of multidisciplinary clinics, however, requires a significant investment of time from health care providers, as well as other allied health services and administrative support from hospitals and health systems.[18] Therefore, providing urology residents and fellows with a more comprehensive exposure to the non-surgical treatment modalities for prostate cancer has the potential to improve the decision making process for patients who are not seen in multidisciplinary clinics or until such multidisciplinary clinics become a more common reality.

Currently, the most common method for learning in residency training programs is exposure through clinical rotations as a means of practical application of knowledge obtained through study. This allows a deeper understanding of and confidence in interpreting the information. Contemporary studies show that trainees enhance their skills on a particular topic when they undertake mandatory or elective 2 to 4 week clinical rotations.[19,20] Our survey found that a majority of urology residents do not receive clinical exposure to radiation or medical oncology to supplement their knowledge obtained through informal teaching or academic half-day settings. This may explain why urology residents would prefer having longer clinical rotations in those fields.

When interpreting the current study, it is important to be mindful of it being based on a survey with a moderate response rate (32%) raising the potential for response bias. To help mitigate this, finite population confidence intervals were calculated and are presented. Also, a proportion of the respondents were in their first or second year of training (37%) and may not have completed an entire academic half-day teaching cycle. However, when analyzing their responses separately they did not have significantly different treatment recommendations or preference for surgical intervention.

Conclusion

This study shows a perceived need for radiation and medical oncology rotations in Canadian urology training programs.

References

1. Royal College of Physicians and Surgeons of Canada. Specialty Training requirements in Urology. 2011.
2. Lavi A, Tzemah S, Hussein A, et al. The Urology Residency Program in {Israel-Results} of a Residents Survey and Insights for the Future. *Rambam Maimonides Med J*. 2017;8(4). doi:10.5041/RMMJ.10317.
3. Borgmann H, Arnold HK, Meyer CP, et al. Training, Research, and Working Conditions for Urology Residents in Germany: A Contemporary Survey. *Eur Urol Focus*. 2016. doi:10.1016/j.euf.2016.12.001.
4. Cocci A, Patruno G, Gandaglia G, et al. Urology Residency Training in Italy: Results of the First National Survey. *Eur Urol Focus*. 2016. doi:10.1016/j.euf.2016.06.006.
5. Skinner TAAAA, Ho L, Touma NJ. Study habits of Canadian urology residents: Implications for development of a competence by design curriculum. *Can Urol Assoc J*. 2017;11(3-4):83-87. doi:10.5489/cuaj.4132.
6. Hagen B, O'Beirne M, Desai S, Stingl M, Pachnowski CA, Hayward S. Innovations in the Ethical Review of Health-Related Quality Improvement and Research: The Alberta Research Ethics Community Consensus Initiative (ARECCI). *Healthc Policy*. 2007;2(4):e164-77.
7. Scherr KA, Fagerlin A, Hofer T, et al. Physician Recommendations Trump Patient Preferences in Prostate Cancer Treatment Decisions. 2017;37(1):56-69. doi:10.1177/0272989X16662841.
8. Hamdy FC, Donovan JL, Lane JA, et al. 10-Year Outcomes after Monitoring, Surgery, or Radiotherapy for Localized Prostate Cancer. *N Engl J Med*. 2016;375(15):1415-1424.
9. Drummond FJ, Gavin AT, Sharp L. Incongruence in treatment decision making is associated with lower health-related quality of life among prostate cancer survivors: results from the PiCTure study. 2017:1-10. doi:10.1007/s00520-017-3994-z.
10. Brar SS, Hong N, Wright FC. Multidisciplinary cancer care: Does it improve outcomes? 2014;110(5):494-499. doi:10.1002/jso.23700.
11. Aizer AA, Paly JJ, Zietman AL, et al. Multidisciplinary care and pursuit of active surveillance in low-risk prostate cancer. *J Clin Oncol*. 2012;30(25):3071-3076. doi:10.1200/JCO.2012.42.8466.
12. Jang TL, Bekelman JE, Liu Y, et al. Physician visits prior to treatment for clinically localized prostate cancer. *Arch Intern Med*. 2010;170(5):440-450. doi:10.1001/archinternmed.2010.1.
13. Fowler FJ, McNaughton Collins M, Albertsen PC, Zietman A, Elliott DB, Barry MJ. Comparison of recommendations by urologists and radiation oncologists for treatment of clinically localized prostate cancer. *JAMA*. 2000;283(24):3217-3222.
14. Abdelaziz AO, Elbaz TM, Shousha HI, et al. Survival and prognostic factors for

hepatocellular carcinoma: an Egyptian multidisciplinary clinic experience. *Asian Pac J Cancer Prev*. 2014;15(9):3915-3920.

15. Gardner TB, Barth RJ, Zaki BI, et al. Effect of initiating a multidisciplinary care clinic on access and time to treatment in patients with pancreatic adenocarcinoma. *J Oncol Pr*. 2010;6(6):288-292. doi:10.1200/JOP.2010.000041.
16. Kozak VN, Khorana AA, Amarnath S, Glass KE, Kalady MF. Multidisciplinary Clinics for Colorectal Cancer Care Reduces Treatment Time. 2017;16(4):366-371. doi:10.1016/j.clcc.2017.03.020.
17. Patil R, K MJ, Hendricks BL, Patil YJ. Improving access and timeliness of care for veterans with head and neck squamous cell carcinoma: A multidisciplinary team's approach. 2016;126(3):627-631. doi:10.1002/lary.25528.
18. Brar SS, Provvidenza C, Hunter A, et al. Improving Multidisciplinary Cancer Conferences: A Population-Based Intervention. 2013;21(1):16-21. doi:10.1245/s10434-013-3296-8.
19. Kamholz BW, Lawrence AE, Liverant GI, Black SK, Hill JM. Results from the Field: Development and Evaluation of a Psychiatry Residency Training Rotation in Cognitive-Behavioral Therapies. *Acad Psychiatry*. 2017. doi:10.1007/s40596-017-0720-6.
20. Cole DC, Giordano CR, Vasilopoulos T, Fahy BG. Resident Physicians Improve Nontechnical Skills When on Operating Room Management and Leadership Rotation. *Anesth Analg*. 2017;124(1):300-307. doi:10.1213/ANE.0000000000001687.

Figures and Tables

Fig.1. Exposure to various subspecialities and urological oncology topics during structured academic half-day of urology residents. Endo: endocrinologist; MO: medical oncologist; RO: radiation oncologist; Uro: urologist.

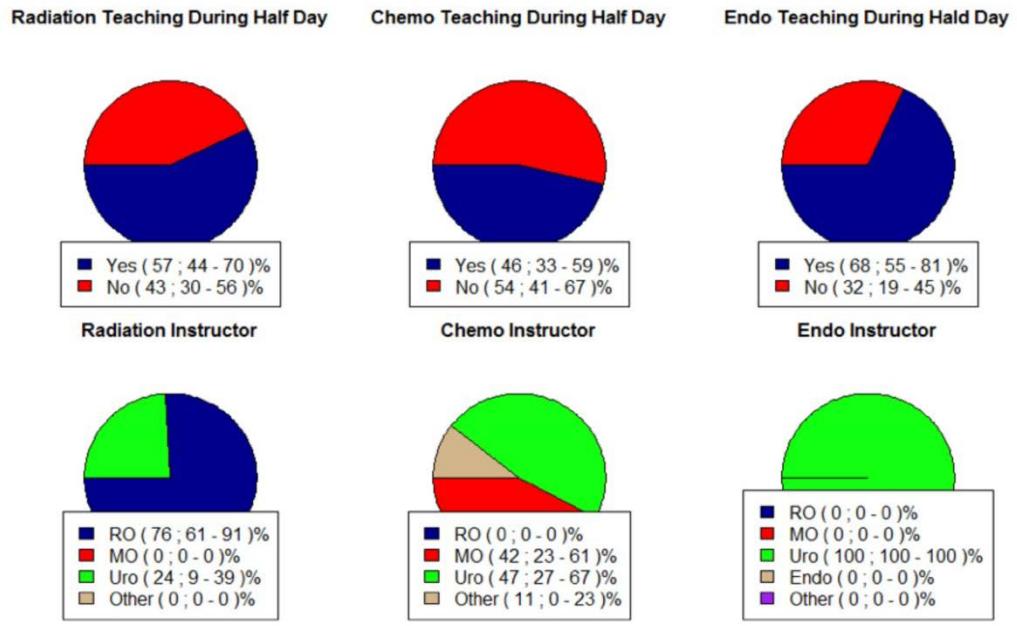

Fig. 2. Urology residents and fellows' preferred length of radiation and medical oncology rotations during residency vs. actual time spent in those subspecialities during residency.

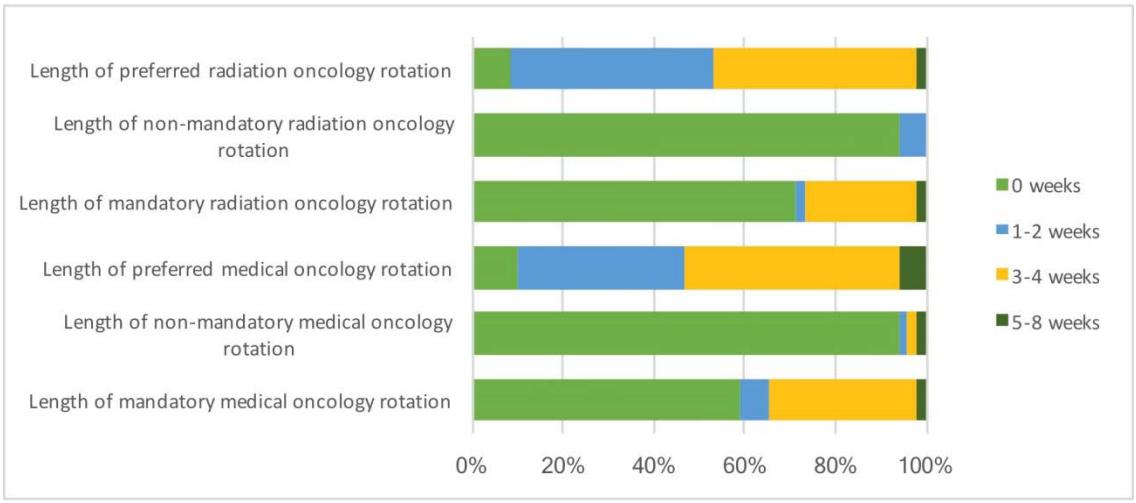

Fig. 3. Trainee response to recommend treatment options for a man presenting with localized low-risk prostate cancer. AS: active surveillance; BT: brachytherapy; EBRT: external beam radiotherapy; PC: patient choice; RP: radical prostatectomy; WW: watchful waiting.

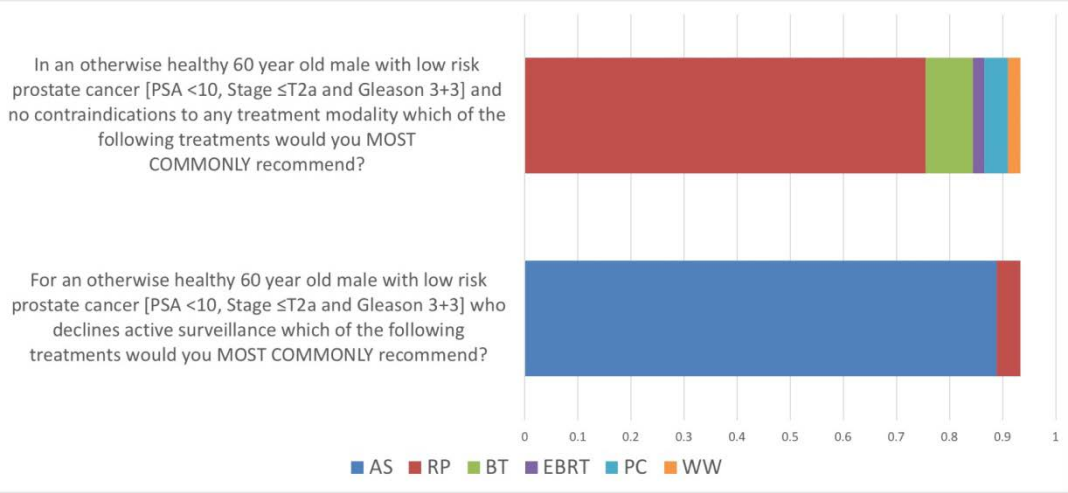

Table 1. Responses to questions regarding biochemical relapse free survival for a similar patient treated with different modalities

		All respondents n (%) (95% CI)	**Resident respondents n (%) (95% CI)**
Low-risk (n=48)	RP superior to BT	14 (29) (18–40)	12 (29) (17–41)
	RP inferior to BT	1 (2) (0–6)	1 (2) (0–7)
	RP equal to BT	33 (69) (57–80)	28 (68) (56–81)
Low-tier-intermediate risk (n=46)	RP superior to BT	30 (65) (53–77)	26 (65) 952–78)
	RP inferior to BT	1 (2) (0–6)	0 (0) (n/a)
	RP equal to BT	15 (33) (21–44)	14 (35) (22–48)
(n=45)	RP superior to EBRT	15 (33) (21–44)	13 (33) (20–46)
	RP inferior to EBRT	1 (2) (0–6)	1 (3) (2–7)
	RP equal to EBRT	29 (64) (52–76)	25 (64) (51–78)
High-tier-intermediate risk (n=45)	RP superior to EBRT	22 (49) (36–67)	18 (46) (33–60)
	RP inferior to EBRT	2 (4) (0–10)	2 (5) (1–11)
	RP equal to EBRT	21 (47) (34–59)	19 (49) (35–62)
High-risk (n=44)	RP superior to EBRT	22 (50) (37–63)	20 (53) (39–67)
	RP inferior to EBRT	4 (9) (2–17)	3 (8) (0–15)
	RP equal to EBRT	18 (41) (28–54)	15 (39) (26–53)

BT: brachytherapy; CI: confidence interval; EBRT: external beam radiation therapy; RP: radical prostatectomy.