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Original Article

Current status of uro-oncology training during urology residency and the need for fellowship programs: An international questionnaire study

Mehmet Ali Karagöz[1], Murat Bağcıoğlu[1], Arif Demirbaş[2], Serkan Özcan[3], Tuncay Taş[4], Emre Huri[5]

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ABSTRACT

Objective: This study aimed to evaluate the opinions of urologists from different countries about uro-oncology education, fellowship programs, and approaches to different urological malignancies at different stages using a questionnaire.

Material and methods: A total of 207 urologists from 22 countries were sent a questionnaire containing 18 items by email. The questions were related to urologic oncology training provided during residency, acceptance of uro-oncology as a sub-branch, the necessity of certification for treatment and follow-up, fellowship program preferences, adequateness of the programs, and approach differences to the different stages of urological malignancies among the urologists from different countries.

Results: In total, 111 (53.62%) urologists who completed the questionnaire were enrolled in the study, and 40.54% of the urologists reported that the uro-oncology training during the residency period was not sufficient. Furthermore, 79.27% of the urologists reported opinions about acceptance of uro-oncology as a sub-branch. The ratio of urologists who undertake the treatment of patients with muscle-invasive bladder cancer (radical surgery and urinary diversion) and prostate cancer (radical prostatectomy, definitive radiation therapy, experimental local treatment, and hormonal therapy) is 27.92% and 37.83%, respectively. The urologists reported that they perform nephron-sparing surgery (NSS), radical nephrectomy (RN), and laparoscopic NSS/RN treatments in patients with localized renal cancer at the rates of 61.26%, 47.74%, and 25.22%, respectively.

Conclusion: Uro-oncology training during the residency period seems to be inadequate in most of the countries, and a high number of the urologists tend to avoid high-volume operations and systemic treatments of uro-oncologic malignancies.

Keywords: Fellowships; laparoscopic training; residency training; uro-oncology training.

ORCID IDs of the authors:
M.A.K. 0000-0002-0144-2041;
M.B. 0000-0003-4927-9164;
A.D. 0000-0003-4984-3722;
S.Ö. 0000-0002-2459-139X;
T.T. 0000-0002-3816-4874;
E.H. 0000-0001-5563-4527.

[1]Department of Urology, Kafkas University Faculty of Medicine, Kars, Turkey
[2]Department of Urology, Afyonkarahisar Health Science University Faculty of Medicine, Afyon, Turkey
[3]Department of Urology, Katip Çelebi University Faculty of Medicine, İzmir, Turkey
[4]Department of Urology, İstanbul Surgery Hospital, İstanbul, Turkey
[5]Department of Urology, Hacettepe University Faculty of Medicine, Ankara, Turkey

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Corresponding Author:
Mehmet Ali Karagöz
E-mail:
dr_mali@msn.com

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Introduction

Although urologic oncology is not yet accepted as a specialist sub-branch, it has an important place in daily practice. Together with updated guidelines, changing treatment modalities; new oncological drugs and developments in advanced technology; and the increasing use of laparoscopic, robotic, and endoscopic techniques have made the subject of eliminating the deficiencies in or providing a continuation of urologic oncology training more prominent. For more than 30 years, different societies and groups have undertaken this important function with the certification and continuation of fellowship programs in different centers. These fellowship programs aim at providing the opportunity for urologists in the residency period or later to have specialist training in the medical and surgical treatment of urological diseases, primarily urological cancers.[1]

Although there might be differences in the uro-oncology patient follow-up and treatment intensity within a single center that provides urology specialist training, it may not always be possible to provide a homogeneous training program. With the currently increasing rates of

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minimally invasive techniques (laparoscopic, robotic, and so on), the approach to surgical procedures shows differences between the centers. Furthermore, as urologic oncology is a branch that requires a multidisciplinary approach, including medical oncology, radiation oncology, uropathology, and urological imaging, the approach to urologic oncology patients requiring follow-up shows variations between the clinics, and this has engendered debate about whether the training of the residents is adequate.

This survey study aimed at evaluating the opinions of urologists who have received urology resident training in different countries and centers about fellowship programs and the approaches to urological malignancies of different stages using a questionnaire.

Material and methods

The local ethics committee of Kafkas University Faculty of Medicine (29/05/2020 - 80576354-050-99/177) approved this cross-sectional questionnaire study among urologists. A total of 207 urologists from 22 countries (Figure 1) were sent a questionnaire containing 18 items by email between January and June 2018. Informed consent was obtained from the urologists to publish the results. Of these items, 8 were related to the period of being a urologist and their institution, opinions of the urologists about urologic oncology training, their participation in a fellowship program in their own country or abroad, the adequacy of the fellowship programs in their own country, where they would prefer to be a urology oncology fellow, the acceptance of urologic oncology as a sub-branch, and the need for certification for the treatment and follow-up of uro-oncologic patients. The remaining items in the questionnaire were related to the approaches to 4 main uro-oncologic malignancies (bladder, prostate, kidney, and testis) at different stages. Urologists who completed the questionnaire were included in the study evaluation. The data obtained were analyzed with respect to the general approaches of all the urologists from different countries. As this was a survey study reflecting the general views of urologists with no comparable group, only the percentages of the answers were calculated, and no further statistical analyses were performed.

Main Points:

- Many urologists do not feel capable of performing high-volume surgeries and are unfamiliar with the systemic therapies and thus do not want to undertake the treatment of urological cancers at these stages.
- Uro-oncology training during residency seems inadequate in most countries, and for urologists working and wishing to progress in this field, completion of uro-oncologic fellowship training after residency is essential.
- Uro-oncology is a continuously and rapidly developing area in both surgical (laparoscopic, robotic, endoscopic) and medical (new chemotherapeutics, new cytotoxic agents, immunotherapeutic modalities, and target-oriented hormonal treatments) treatment modalities; therefore, urologists working in this area have to stay abreast of the latest trends.
- Uro-oncology is an area requiring a multidisciplinary approach and collaboration; therefore, effective communication with medical oncologists, radiation oncologists, pathologists, and radiologists is necessary to decide the best treatment and follow-up for these patients.

Results

From the 207 urologists to whom the questionnaire was sent by email, 111 (53.62%) were included in the study. A total of

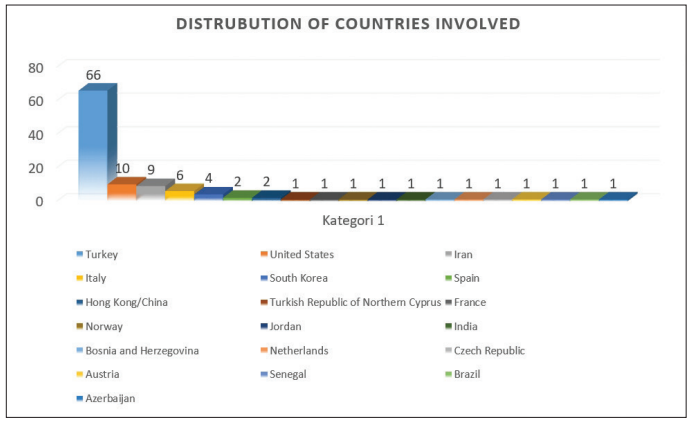

Figure 1. Distribution of the countries involved in the study

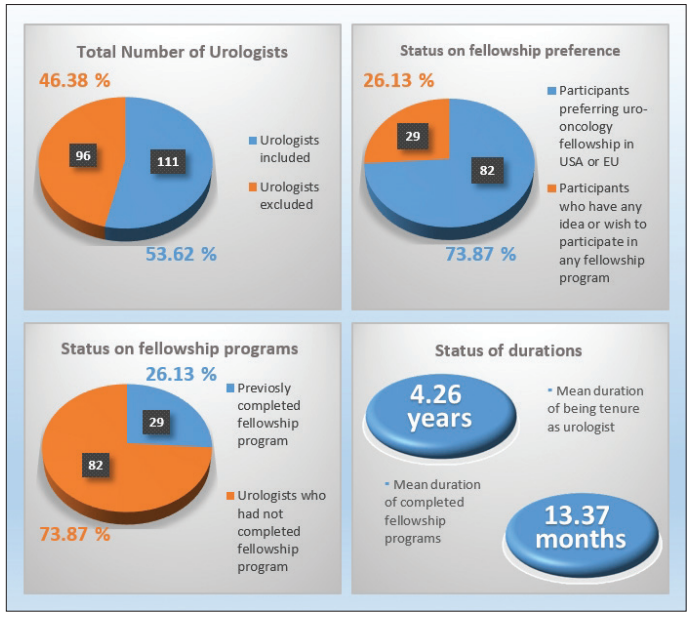

Figure 2. Percentages of urologists involved, fellowship preference, completed fellowship program, mean duration of tenure as a urologist, and completed fellowship programs

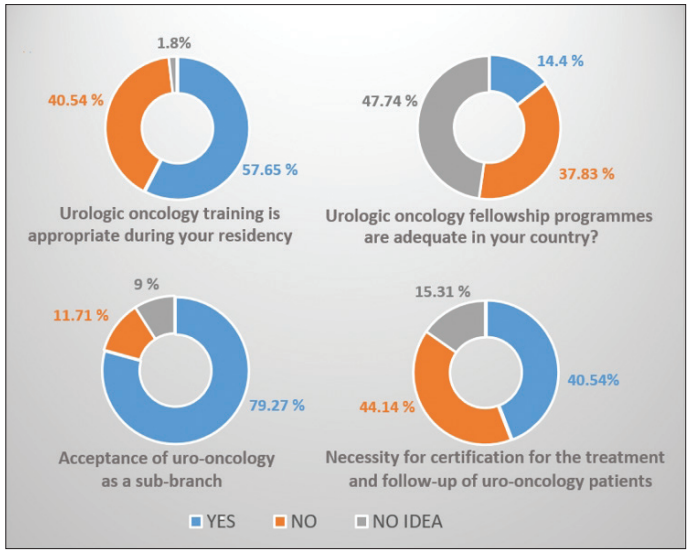

Figure 3. Percentages of answers to urologic oncology questions

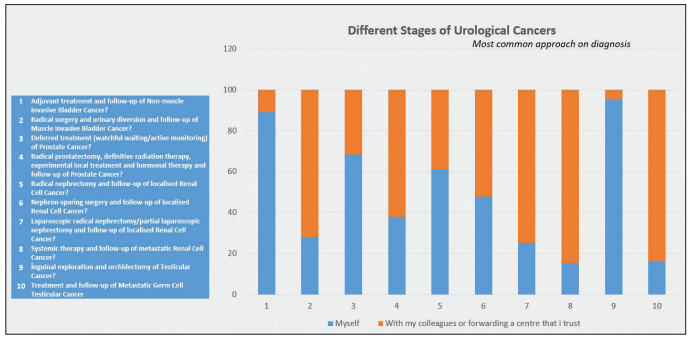

Figure 4. Most common approach of urologists to different stages of urological cancers

96 (46.38%) urologists were excluded from the study because they did not respond or did not complete the questionnaire. Of 111 urologists, 6 were residents who were still undergoing training. The mean duration of tenure as a urologist was 4.25 (range, 1–12) years. A fellowship program of mean 13.37 (range, 1.5–50) months had been previously completed by 29 (26.1%) urologists (Figure 2). After the demographic evaluation, the opinions of the participants about their preferences as a uro-oncology fellow, uro-oncology training during residency, acceptance of uro-oncology as a sub-branch, necessity for certification for the treatment and follow-up of uro-oncology patients, and fellowship training in their countries are listed in Figures 2 and 3.

When the approach to diagnosis, treatment, adjuvant intravesical treatment, and follow-up of non–muscle-invasive bladder cancer (NMIBC) was evaluated, 89.18% (99/111) of the urologists reported that they applied all the stages of NMIBC treatment by themselves. In the items that evaluated the approaches to the treatment of patients with MIBC (radical surgery and urinary diversion) and prostate cancer (radical prostatectomy, definitive radiation therapy, experimental local treatment, and hormonal therapy), the ratio of urologists who undertake the treatment of these patients is 27.92% (31/111) and 37.83% (42/111), respectively. When the approach to deferred treatment in prostate cancer (watchful waiting/active surveillance) was evaluated, 68.46% (76/111) of the urologists stated that they decided on follow-up and/or treatment by themselves.

In the evaluation of the approach to the treatment of localized patients with renal cancer with nephron-sparing surgery (NSS), radical nephrectomy (RN), and laparoscopic NSS/RN treatments, the urologists reported that they performed these interventions by themselves at the rates of 61.26% (68/111), 47.74% (53/111), and 25.22% (28/111), respectively.

When the most commonly applied approaches in the systemic treatment and follow-up of metastatic renal and germ cell testis cancer (GCTC) were evaluated, the urologists reported that they undertook the treatment and follow-up processes by themselves at the rates of 15.31% (17/111) and 16.21% (18/111), respectively. The treatment and follow-up of patients planning to undergo radical inguinal orchiectomy for the diagnosis of GCTC were reported to be undertaken by 95.49% (106/111) of the urologists by themselves (Figure 4).

Discussion

With changes and developments in techniques in the last 20 years in particular, laparoscopic, robotic, and endoscopic methods have acquired an important place in the treatment of urological tumors. Moreover, the advent of many Food and Drug Administration–approved systemic treatments, including new cytotoxic agents, immunotherapeutic modalities, and target-oriented hormonal treatments, in the recent years has created a need for continuously developing, changing, and sustainable training in the field of uro-oncology.

When these aspects are taken into consideration, the adequacy of the training received in the residency period; the need for training after residency; and the content, intensity, and lengthy period of fellowship programs continue to be the subjects of debate. Although some fellowships offer an intensive program in terms of open surgery and the opportunity to gain experience, they do not provide the same level of surgical experience in minimally invasive techniques (laparoscopic, robotic, and so on). In contrast, other programs focus on laparoscopic or robotic surgery and offer limited opportunities for open surgery. Significant differences can also be seen between the programs with respect to multidisciplinary approaches and treatment applications.[1]

In a previous study conducted by Huri et al.[2] on last-year residents in Turkey, it was reported that the residents do not feel

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adequately equipped to take uro-oncological decisions and treatments. In our study, 40.54% of the urologists did not find the uro-oncology training in their own country to be sufficient. This high ratio shows that there is a need for training after residency to be supported by not only the authorities but also the urologists in the field. Similarly, the vast majority of the urologists (79.27%) support the acceptance of uro-oncology as a sub-branch. On the need for certification for the treatment and follow-up of uro-oncology patients as a supporting result to previously argued issues, almost half of the urologists (44.14%) stated that certification is essential. In this section of the survey, our study revealed that only 14.4% of the urologists found the fellowship training in their countries to be adequate. We know that it is crucial to treat and follow up the uro-oncology patients either surgically or medically. The results of our survey make it evident that the urologists specializing in this area should keep up with the research and adequately equip themselves because urologic oncology is a rapidly changing and developing branch of urology. Moreover, the urologists must ensure to perform all the treatment and follow-up steps in the most effective manner possible.

Therefore, urologic oncology fellowship programs make great efforts to provide intense training and surgical experience focused on oncology theory and skills to fill the gaps in the practical and theoretical training given in the residency period and to be able to follow the developing technology and molecular medicine. In this context, a small-scale prospective cohort study demonstrated that fellowship training facilitated the learning curve of radical prostatectomy.[3] In another population-based study that evaluated the positive surgical margin (PSM), which is an important marker of biochemical recurrence after radical prostatectomy, revealed that a significantly lower PSM was determined in the surgeries performed by urologists who had participated in a fellowship program.[4,5] Another study conducted on radical cystectomy (RC) found better rates of overall survival (OS), bladder cancer–specific survival (BCSS), and recurrence-free survival (RFS) in patients with bladder cancer treated by subspecialized urologists compared with those treated by urologists experienced in terms of age and number of cases. Although BCSS and RFS were obtained in patients treated by urologists who had received uro-oncology fellowship training, there was no contribution to OS.[6]

We all agree that urologic oncology is not only about performing good or high-volume surgeries. Our study found that while evaluating patients with MIBC who required RC and urinary diversion, approximately 27.92% of the urologists reported that they undertook the treatment and follow-up of these patients by themselves. Similarly, only 37.83% of the urologists stated that they performed all the stages of curative treatment of prostate cancer, including radical prostatectomy (open/laparoscopic/robotic), which is the most frequently applied surgery and requires experience like RC. The results of this study showed that urologists performed high-volume surgeries such as radical prostatectomy and RC at a lower rate, and the patients were referred to university/training hospitals or managed by their colleagues. In contrast to these results, it was observed that urologists were more prominent in all the diagnostic and treatment stages of patients with NMIBC compared with the high volume surgeries of bladder and prostate cancer.

Since the introduction of laparoscopic nephrectomy in 1991 by Clayman et al.,[7] with developments in technology over time, laparoscopy has an important place in the treatment of primary urological cancers and in residency training and has become an indispensable part of urologic oncology practice. Although the level of laparoscopy training received during the residency period is continuously increasing, advanced-level laparoscopy training and robotic surgery are still included in the fellowship programs. Similar to the results mentioned earlier, open/laparoscopic partial/RN surgery applied to patients with localized renal cancer was undertaken less by urologists, and more than half of all patients with renal cancer were referred to higher level centers. Moreover, urologists did not seem to prefer laparoscopic surgery to treat renal cancer. A vast majority of urologists do not undertake radical surgery in patients with MIBC and prostate cancer, and they also do not perform radical and partial nephrectomy on patients with renal cancer. These results suggest that many urologists do not feel capable of performing high-volume surgeries and do not want to undertake the treatment of urological cancers at these stages. Therefore, the training and practice given on more risky and high-volume operations should be reviewed. However, it should also be taken into consideration whether the hospital undertaking this function is suitable for surgeries of this dimension.

In patients who have received a diagnosis of prostate cancer, active surveillance predicting patient follow-up according to certain criteria without losing the chance of curative treatment and the watchful waiting approach including palliative treatments aimed at overcoming complications were applied approximately by two-thirds (68.46%) of the urologists, whereas a small proportion of the urologists decided to transfer these patients to their colleagues or other centers. The fact that no surgical procedure was performed or chemotherapeutics administered at this stage or that treatment was not given until complications developed or progression was seen can be explained by the urologists adopting a similar approach to these patients.

In patients with metastatic renal cancer, although cytoreductive nephrectomy or metastasectomy are frequently performed, targeted antiangiogenic, immunotherapeutic, and chemotherapeutic treatments have a place in the basic treatment of these patients. A vast majority of these patients (84.68%) are referred by urologists for reasons such as the inclusion of new agents in treatments, ongoing developments with approval for use, and the need for collaborative work with medical oncology. Similar-

ly, the fact that chemotherapeutics are used more and the rate of treatment of patient with metastatic GCTC, including retroperitoneal lymph node dissection surgery, reduced to only 16.21%, show that urologists do not feel confident and adequate in situations requiring chemotherapy and a multidisciplinary approach. This finding is similar to that with patients with metastatic renal cancer. Thus, a multidisciplinary approach is indispensable, and the importance of providing this cooperation must be kept in mind.[8]

Finally, almost all the urologists (95.18%) did not avoid surgery in patients with testicular cancer who required inguinal radical orchiectomy. This surgery has a much lower risk and complication rates than those for other urological malignancies, and it is effectively performed in small centers.

There are some limitations to this study. First, this was a questionnaire study, and there was no homogenization with respect to the countries where the participating urologists had trained, urology experience, the hospitals where they were working, and the facilities they had. Moreover, no questions were asked about the differences in the insurance systems of the countries and the urologists' concerns about medico-legal issues. This may have affected the responses to questions related to taking responsibility for risky oncology patients and high-volume surgeries. Furthermore, the status of the urology residency and fellowship training of the participating countries may not have been accurately reflected because of the personal motivation and opinions of the respondents. Finally, the results of the questionnaire reflect the opinions at the time it was administered, and because this is an area which is constantly developing and changing, the opinions could be different from those of today. Nevertheless, the findings from this study offer a framework of the current environment and a good entry point for a discussion on uro-oncology education during residency.

In conclusion, uro-oncology training during residency seems inadequate in most of the countries, and many urologists do not feel capable of performing high-volume surgeries and are unfamiliar with the systemic therapies. To ensure the competency of urologists in uro-oncology, the urology resident training core syllabus should be revised, and the urologists must be encouraged to learn and follow both surgical techniques and therapies other than surgery during training after the residency period. Irrespective of whether urologic oncology is accepted as a sub-branch specialty, it is an incontrovertible fact that this area requires a multidisciplinary approach and collaboration in the treatment and follow-up of oncology patients with ongoing developments in the endourological techniques, systems, and treatments, which have become personalized and reduced to the molecular level. Finally, for the urologists working and wishing to progress in this field, completion of uro-oncologic fellowship training after residency period should be considered as a necessary process.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Kafkas University Faculty of Medicine (29.05.2020/80576354-050-99/177).

Informed Consent: Informed consent was obtained from the urologists to publish the results.

Peer-review: Externally peer-reviewed.

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