Are the Oncologists Trained for Decision Making on Geriatric Cancer Patients - A Survey of Turkish Oncology Group (TOG)

Sule Karabulut Gul[1*], Huseyin Tepetam[1], Didem Colpan Oksuz[2], Omar Alomari[3], Muhammad Wasif Saif[4], Serdar Turhal[5], and Fazilet Oner Dincbas[2]

[1]Department of Radiation Oncology, Health Sciences University, Dr. Lutfi Kirdar Kartal Training and Research Hospital, Istanbul, Turkey

[2]Cerrahpasa Medical Faculty, Department of Radiation Oncology, Istanbul University, Istanbul, Turkey

[3]Hamidiye International School of Medicine, University of Health Sciences, Turkey

[4]Orlando Health Cancer Institute, Orlando, USA

[5]Department of Medical Oncology, Anatolian Health Center, İstanbul, Turkey

Correspondence should be addressed to Sule Karabulut Gul, University of Health Sciences, Dr. Lutfi Kirdar Kartal City Hospital Health Application Center, Cevizli, D-100 Guney Yanyol, Cevizli Mevkii, Kartal/Istanbul, Turkey

ABSTRACT

OBJECTIVE

The aim of this study is to assess the levels of education and training about geriatric oncology among Turkish physicians and to understand the factors affecting the treatment decision of oncologists on geriatric cancer patients on behalf of TOG Side Effects Study Group.

MATERIALS AND METHODS

A 24-questions survey was prepared to inquire the demographic information on the participating physicians, whether they had received training on how to approach the geriatric patients during their medical education and residency training, in what process(es) they had received the training, which of them are treating geriatric patients, what they care about when evaluating geriatric patients, and their thoughts about training and their preparedness for approaching geriatric patients. The questionnaire was sent to radiation oncologists and medical oncologists online and the questionnaire link was published on the websites of the Turkish Society of Radiation Oncology and the Turkish Society of Medical Oncology.

RESULTS

203 physicians participated in the survey, 131 of them were women, and the median age was 41.66 (24-69). 156 of them received their specialty education at the university hospital (76.1%). One hundred-three of them were radiation oncologists, 80 were medical oncologists. The rate of having geriatric education before specialization on oncology was 19.7% and was 6.9% after specialization on oncology for both medical and radiation oncologists. The rate of using the geriatric assessment tools by

radiation oncologists in determining suitability for radiotherapy was 10.7% and by medical oncologists in determining suitability for chemotherapy was 13.8%. 177 of the physicians (86.3%) thought that geriatric evaluation can independently increase the survival rate. According to the physicians, patients' cognitive status, functional status, physiological age, polypharmacy, geriatric specialist recommendations, inpatient services, patient relatives and similar factors were found to be effective in treatment decision. 92.7% of physicians believed that receiving education will change their perspective on treatment in geriatric patients.

CONCLUSION

Our results provide perspectives for developing knowledge and skills on the geriatric training among oncologists. Training on approach to geriatric patients is necessary for oncologists who are more frequently confronted with geriatric patients with cancer.

KEYWORDS

INTRODUCTION

With the aging of the population, the number of geriatric patients diagnosed with cancer is also increasing. WHO (World Health Organization) has brought a new chronological classification to aging in human life. The onset of old age is 65 according to this new classification, 65-years - 74-years of age are defined as young old age, 75-years to 84-years of age as advanced old age, and 85-years and over as very advanced old age. The number and proportion of people aged 60-years and older in the population is increasing. In 2019, the number of people aged 60-years and older was 1 billion. According to the published data by WHO this number will increase to 1.4 billion by 2030 and 2.1 billion by 2050 [1]. It is predicted that the rate of population over 65 years old, which was 1/14 in the 2000s, will be 1 out of 6 people in the 2050s. In North America, 50%-60% of newly diagnosed cancer cases and 70% of all cancer cases are 65-years and older. In 2010-2030, new cancer cases are expected to increase by 67% in adults aged 65 and over [2-4]. According to Turkey's 2018 population data, the population aged 65-years and over has been reported as 8.8% [5].

Management of elderly patients has gained importance in oncology practice, as the world population is aging and aging itself is one of the most important risk factors for cancer. Geriatric patients are biologically, functionally, psychologically and socially different from younger patients. For this reason, the approach to geriatric patients requires a different perspective. The geriatric patient population is heterogeneous. It is important to identify patients who can benefit from aggressive treatment in the patient group with a long-life expectancy in geriatric patients. Geriatric oncology awareness and education is very important during patient selection for treatment and management of the patient during and after the treatment. However, in general, most oncologists do not know how to evaluate and manage the geriatric age group. Even if the physiological conditions of elderly cancer patients are suitable, most cases might be left untreated, assuming that they cannot tolerate aggressive treatments. In this regard, oncologists need training to improve their knowledge and skills.

The needs to identify the most appropriate treatment modalities of cancer patients in the aging population and education for this purpose have been addressed and in the

published review by the American Society of Clinical Oncology (ASCO) in 1988 [4]. In this review, the gaps in the education, the need for continuing educational interventions and the strategies to achieve success in this regard were suggested. ASCO-Hartford Geriatric Oncology Scholarship, which deals with the education of physicians treating the elderly oncology patients, has been the biggest and best-known educational initiative. The International Society of Geriatric Oncology (SIOG) is working to build a global database of training opportunities available in geriatric oncology. One of the SIOG's top priorities is to address to the need to integrate geriatric oncology education into the education programme of both doctors and nurses working on geriatrics. Geriatric oncology topics were included in the curriculum of ASCO in 2005 and ASCO-ESMO in 2010, recognizing the importance of educating medical oncologists in geriatric principles [4,6-10].

Increasing population of geriatric patients diagnosed with cancer raised the question: "How much do we know about the approach to geriatric patients?". In addition to the comorbidities and diminished performance status, it is recommended that geriatric patients can be evaluated more comprehensively and a personalized treatment decision should be made.

The aim of our study is to evaluate whether oncologists received training on geriatric patients, their approach to geriatric cancer patients and factors that effects treatment decision and the management during treatment on behalf of "*The Turkish Oncology Group Early and Late Side Effect Study Group*".

MATERIALS AND METHODS

A 24-questions survey was prepared to inquire the demographic information on the participating physicians, whether they had received training on how to approach the geriatric patients during their medical education and

residency training, in what process(es) they had received the training, which of them are treating geriatric patients, what they care about when evaluating geriatric patients, and their thoughts about training and their preparedness for approaching geriatric patients. The survey was prepared and delivered to the physicians via the internet. This questionnaire was prepared in concordance with the study published by Morris et al. in 2017 investigating "Are Future Radiation Oncologists Equipped with the Knowledge to Manage Elderly Patients with Cancer" and the permission to use the questionnaire was obtained from the author [11]. In the questionnaire: 7 descriptive questions (age, gender, geriatric education status, specialty, working year, geriatric education before/after specialty training, the institution where specialization training was received, the institution he/she worked for), 6 questions with 5-scale (cognitive evaluation, getting geriatric expert support, comorbidity management, self-confidence in treatment), 2 evaluation questions with 7-scale for geriatric patients (factors affecting radiotherapy dose selection, factors affecting chemotherapy dose selection), 3 questions for geriatric patients' treatment recommendation, education with 5-scale and 6 comment questions were used. The members of Turkish Radiation Oncology Society and Turkish Medical Oncology Society contributed to the survey by utilizing the published survey link on their website. The ethical approval of the study was taken from Dr. Lutfi Kirdar Kartal Education and Research Hospital Ethics Committee with the number of 2019/514/146/15.

Statistical Analysis

SPSS (Statistical Package for the Social Sciences) 20.0 program was used for the statistical analysis of the data obtained in the study. Sociodemographic and clinical categorical variables obtained from the participants were evaluated with numbers and percentages. The crossed chi-square test was used to compare classified categorical variables. Fisher Exact test was used in cases where the minimum expected value was less than 5, and Pearson Chi-

square test was used in other cases. p value <0.05 was interpreted as statistically significant.

RESULTS

Two hundred and three physicians had participated in the survey. 123 were radiation oncologist, 80 were medical oncologist. 131 of them were women (63.9%), and the median age was 41.6 (24-69) years old. The mean age of the radiation oncology physicians participating in the survey was 41.19, and 95 (77.2%) were women. The mean age of the surveyed medical oncology physicians was 42.39, of which 45 (56.3%) were male.156 of them received their specialty education at a university hospital (76.1%). The number of physicians with working year of less than 10 years was 96, and 107 with a working year over 10 years. Demographic information and the characteristics of the physicians are shown in (Table 1). The most common primary tumor group of interest of the physicians was breast cancer (77.6%), followed by gastrointestinal system cancer (65.9 %) and lung cancer (64.4 %), respectively. 20.5% of the physicians defined age 65-years as the elderly patient while only 1% of them stated that over the age of 85-years was considered elderly patients.

	Radiation Oncologist N (%)	Medical Oncologist N (%)
Gender		
Male	27 (13.3)	45 (22.2)
Female	96 (47.3)	35 (17.2)
Education received from		
University	94 (46.3)	64 (31.5)
Education hospital	29 (14.1)	16 (7.9)
Working years at the field		
1-10	44 (21.7)	52 (25.6)
10-20 years	59 (29.1)	15 (7.4)
Over 20 years	20 (9.9)	13 (6.4)
Geriatric education Before speciality		
Received	20 (9.9)	20 (9.9)
Not received	103 (50.7)	60 (29.6)
Geriatric education After speciality		
Received	9 (4.4)	5 (2.5)
Not recieved	114 (56.2)	75 (36.9)
Age defined as the elderly patient		
65	37 (18.2)	32 (15.8)
70	47 (23.2)	25 (12.3)
Over 70	39 (19.2)	23 (11.3)

Table 1: Demographic information and characteristics of the participants.

The rate of receiving geriatric education before oncology education was 19.7% and this rate was 6.9% during oncology education. The rate of receiving education on topics such as delirium, mental capacity assessment, falls, polypharmacy, and urinary retention that may affect elderly patients was 31.2%. 1.5% of them stated that they received their training online and 5.9% from sessions in symposiums or congresses. However, 41% of the physicians think that they can provide relevant management in polypharmacy, falls, incontinence, and multiple comorbid conditions observed in elderly people (Figure 1).
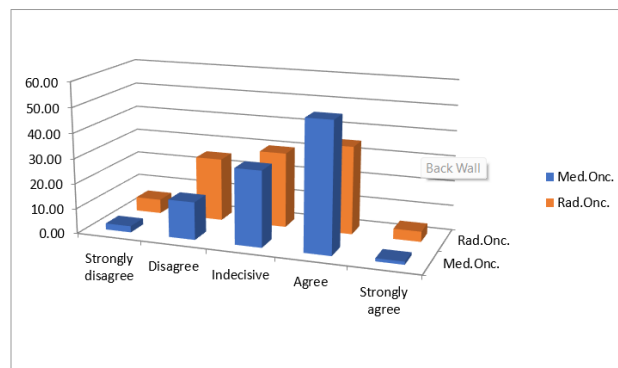

Figure 1: Percentage of physicians (medical oncologists and radiation oncologists) who think that they can provide relevant management in polypharmacy, falls, incontinence and multiple comorbid conditions observed in elderly people.

The use of geriatric assessment tools in determining suitability for radiation therapy was rare. 88.6% of the radiation oncologists and 86.3% of medical oncologists rarely or never used it. Cognitive assessment was used regularly by only 58% of the participants. 177 of the physicians (86.3%) thought that geriatric evaluation can independently predict overall survival rate. According to the physicians, patients' cognitive status, functional status, physiological age, polypharmacy, geriatric specialist recommendations, inpatient services, patient relatives and similar factors were found to be effective in deciding on treatment (Table 2). More than half of the physicians have followed-up older patients more frequently than younger patients.

Factors affecting the treatment decision in geriatric patients	Extremely important	Important	Indecisive	Less important	Not important
Chronological age	10(%4,9)	122(%60,1)	3(%1,5)	61(%30)	7(%3,4)
Cognitive status	45 (%22,2)	138 (%68)	5(%2,5)	15 (%7,4)	
Functional state	65 (%32)	125 (%61,6)		13 (%6,4)	
History of fall	18 (%8,9)	145 (%71,4)	15 (%7,4)	23 (%11,3)	2(%1)
Social support state	24,1 (%76,3)	136(%67)		17 (%8,4)	1(%0,5)
Comorbidity	84(%41,4)	105 (%51,7)	2(%1)	12 (%5,9)	
Dietitians suggests	22 (%10,8)	144(%70,9)	14 (%6,9)	21 (%10,3)	2(%1)
Polypharmacy	38(%18,7)	136 (%67)	11 (%5,4)	18 (%8,8)	
Geriatric Specialists suggests	27 (%13,3)	136 (%67)	24 (%11,8)	15 (%7,4)	1(%0,5)
Diet	64 (%31,5)	124 (%61,1)	3(%1,5)	12 (%5,9)	
Depression	44 (%21,7)	136 (%67)	7(%3)	13 (%6,9)	3(%1,5)
Senior colleague recommendations	22 (%10,8)	154 (%75,9)	12 (%5,9)	14 (%6,9)	1(%0,5)
Physiological age	64(%31,5)	121 (%59,6)	7(%3,4)	11 (%5,4)	
Patients' parents' requests	17(%8,4)	118 (%58,1)	22 (%10,8)	34 (%16,4)	12 (%5,9)
Inpatient service facilities	40 (%19,7)	131 (%64,5)	14 (%6,9)	17 (%8,4)	1(%0,5)
Patients' biochemical findings	55(%27,1)	124 (%61,1)	8(%3,9)	15 (%7,4)	1(%0,5)

Table 2: Factors affecting the treatment decision in geriatric patients.

A 57.6% of the physicians were confident in the treatment of elderly cancer patients. When deciding whether to treat by radiotherapy or chemotherapy, only 3 (1.5%) physicians received support from geriatric specialists. 52.7% of the physicians indicated that more training about the management of the elderly patients would be beneficial. 52.7% physicians believed that specific learning objectives related to the management of the elderly with cancer patients would be valuable in the radiation oncology and medical oncology education curriculum. 51.7% of the physicians stated that geriatric evaluation may independently increase the survival rate in some oncological diseases and may affect the treatment regulation. In addition, 92.7% of them declared that getting an education would change their perspective on elderly patients. 69.8% of the physicians stated that they would prefer face-to-face training on the approach to geriatric patients (Table 3).

Factors affecting radiotherapy fraction dose selection for radiation oncologists and chemotherapy dose selection for medical oncologists	Radiation Oncologists		Medical Oncologists	
	important	not important	important	not important
Patients' age	89	33	62	18
	(% 72,4)	(%26,8)	(% 77,6)	(% 22,6)
Patients'' choice	87	30	70	9
	(% 70,8)	(% 24,4)	(% 87,6)	% 11,3)
Social support	104	17	76	3
	(% 84,5)	(% 13,8)	(% 95,1)	(% 3,8)
Physiological age	106	14	74	4
	(% 86,2)	(% 11,4)	(% 92,6))	-5%
Patients' disease	114	8	78	2
	(% 92,7)	(% 6,5)	(% 97,5)	(% 2,5)
Convenient access, accommodation, and transportation	110	13	77	3
	(% 89,4)	(% 10,5)	(% 96,3))	(% 3,8)
Using geriatric assessment	97	26	72	4
	(% 78,9)	(% 21,1)	-90%	-5%
Anatomic localization	107	13	67	8
	-87%	-16%	-83.80%	-10%
Concurrent systemic therapy	112	10	74	4
	(% 91,1)	(% 8,1)	(% 92,6)	-5%
Cognitive status	112	9	76	3
(Delirium, Demands)	(% 91,1)	(% 7,5)	-95%	(% 3,8)
Opinion of senior colleagues or clinical supervisors	101	15	72	5
	(% 81,1)	(%12,2)	(% 90,1)	(% 6,3)

Table 3: Factors affecting radiotherapy fraction dose selection for radiation oncologists and chemotherapy dose selection for medical oncologists.

Factors affecting radiotherapy fraction dose selection for radiation oncologists and chemotherapy dose selection for medical oncologists were summarized in (Table 3). Patient age, patient preference, social support, physiological age, patient's disease, access to hospital, accommodation, location of cancer, receiving concomitant treatment or not, cognitive function status, opinion of senior colleagues was reported as important factors in both groups.

35% of radiation oncologists find comorbidities, 28.5%, functional status, 28.5% physiological age, 27.6% diet very important for decision of RT treatment, while 51.3% of medical oncologists think that comorbidities, 37.8% diet, 37.5% functional status, 36.3% physiological age very important for decision of systemic treatment. These findings were similar in both groups. Medical oncologists also indicate that, they could monitor geriatric patients differently than younger patients (p: 0.000028).

Trained physicians use the mini mental test to evaluate cognitive functions more frequently than non-trained physicians (p: 0.02). The rate of consulting a geriatrician while treating the geriatric patient was found to be significantly higher in the trained group, compared to the untrained group (p: 0.001). 53.1% of physicians with experience less than 10 years, and 77.6% of physicians with experience more than 10 years, defined patients aged 70 and over as geriatric patients (p: 0.0003). Thirty-three physicians with experience exceeding 20-years have relatively less education about geriatry (p: 0.04). Physicians with experience less than 10 years stated that the approach to geriatric patients will change with training, compared to those with experience over 10 years (p: 0.02) and physicians with experience less than 20 years stated that the approach to geriatric patients will change with training (p: 0.01).

DISCUSSION

To our knowledge, this is the first survey performed to evaluate the approach and education of both radiation and medical oncologists to geriatric cancer patients in our country. In many countries around the world, education programs have been added to the specialty training program for those who are going to treat the geriatric oncology patients, however geriatric oncology-specific formal training is not included in the curriculum for oncology education in our country. Unfortunately, clinicians who provide care for elderly patients worldwide receive little or no formal training, hence, due to lack of adequate knowledge on the subject, distrust is observed in physicians [11]. The study conducted by Leifer et al. [12], which investigated the interest and training of radiation oncologists in geriatric oncology in Canada reported that the knowledge of the 83% of physicians was found to be insufficient in this regard, and similarly, in the study conducted by Maggiore et al. [13] among hematology specialists, the knowledge of the physicians in treating geriatric oncology patients was found to be insufficient.

As a result of our survey, 93.2% of the physicians did not receive any training during their oncology training. Also, 16.8% of radiation oncologists and 25% of medical oncologists received geriatric training before their oncology training. Only 5.9% of them received formal training given by geriatricians and geriatric oncology specialists. Studies have showed that performance status, survival benefit of treatment, life expectancy and quality of life were factors affecting the treatment decision, and similar answers were stated by the oncologists in our study. According to the physicians, patients' cognitive status, functional status, physiological age, polypharmacy, geriatric specialist recommendations, inpatient services and patient relatives' requests also affected the decision of the physicians regarding treatment [14-16] like our findings. Different than other studies, we had the chance to compare the factors affecting the treatment decision in geriatric patients between radiation oncologists and medical oncologists. We observed that factors affecting the treatment decision were similar in both groups. In addition, the factors affecting the radiotherapy fraction dose and chemotherapy dose selection were similar in our study and these are comorbidities, diet, functional status and physiological age. When we compare our study with the other studies, social support is also effective in treatment type decision.

Comprehensive Geriatric Assessment (CGA) is the "gold standard" for evaluating older adults. The origin of CGA dates to the 1940s and was developed by Dr. Marjory Warren from the UK when she needed better hospital evaluation of elderly patients who were bedridden due to chronic diseases. Over time, it has been accepted in many countries and geriatric centers. Today, many screening tools, forms and questionnaires including the experiences of different centers are used. G8 screening questionnaire, The Vulnerable Elders Survey-(VES-13), Flemish version of the triage risk screening tool (TRST), Osteoporotic fracture index, Groningen frailty indicator, Fried's frailty criteria, abbreviated comprehensive geriatric assessment (aCGA) test are the most commonly used of these tests and screening tools [17-20]. Generally, the rate of usage of the geriatric assessment scales is low (10.7%) for determining treatment suitability in geriatric patients. In our study, it was stated that cognitive status was taken into account when making a treatment decision, however mini mental tests were used only 11.7%. In most cases, the evaluation of the geriatric patients and the subsequent treatment decision making were performed without any testing.

In the surveys conducted up to date, it has been observed that oncologists refrain from intensive cancer treatment in the elderly patient group while giving treatment. For this reason, many patients who otherwise would benefit treatment may remain untreated due to their chronological age. Ulger et al. stated that considering only chronological age as the decision factor is insufficient to guide treatment and survival will increase if geriatric patients who can tolerate aggressive treatment are distinguished and such group of patients will not be left untreated [21].

KP et al. underlined that geriatric assessment can identify areas of vulnerability, predict survival and toxicity, help in clinical treatment decisions, and guide interventions in routine oncology practice. Ideally, all older patients who are being considered for cancer treatments should receive a geriatric assessment as a part of their evaluation; however, in settings of limited time and resources, a geriatric screening tool could be used [22]. Shahrokni A. et al. detected that keeping a patient-centered mindset and enabling older patients to be involved in choices are crucial to providing effective and efficient care. Communication among members of the care team is the key to avoiding fragmented care, unnecessary expense, and unwanted outcomes. Targeted interventions could result in significant improvements in the quality of life of the older patient with cancer throughout the cancer continuum [23].

Physicians in our study did not feel confident in deciding the treatment on geriatric oncology patients. 57.6% of the radiation oncologists and medical oncologist stated that additional education during their training for elderly patients could change their perspectives and addition of specific learning objectives about geriatric oncology in education curriculum is needed. Younger physicians are more inclined to receive training on the management of geriatric patients and 69.8% of them prefer to have face-to-face training, while the rate of those who want online education is 53.2%. Such training is important not only for the oncologists but also for all other disciplines dealing with the geriatric patient group on geriatric principles as well. Even an online education can be very effective for the education of a large audience and can be a stepping stone for further education.

In conclusion, the geriatric cancer patient population is a heterogeneous group. Comprehensive evaluation, individualization of the treatment decision and proper management will increase the quality of life and survival of geriatric cancer patients. We conclude that the formal education about the geriatric oncology in our country appears to be inadequate. Improvement of geriatric-based competencies within oncology education "core curriculum "is needed. Our results provide perspectives for developing knowledge and skills on the geriatric training among

radiation and medical oncologists. So that oncologists who will confront more and more geriatric cancer patients in line with the increase in the elderly population will feel and act more confident in providing appropriate cancer treatments and care to the elderly patients.

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