RESEARCH ARTICLE

Awareness of Cancer Screening During Treatment of Patients with Renal Failure: A Physician Survey in Turkey

Ozlem Uysal-Sonmez[1], Ozgur Tanriverdi[2]*, Ummugul Uyeturk[3], Isil Irem Budakoglu[4], Rumeyza Kazancioglu[5], Ibrahim Turker[6], Burcin Budakoglu[6], Ulku Yalcintas-Arslan[6], Berna Oksuzoglu[6]

Abstract

Background: Today, survival rate of patients with chronic renal failure/hemodialysis has increased so that chronic illnesses are more likely to occur. Cancer is the main cause of morbidity and mortality in such patients. Aim: In this study, physician attitudes were examined about cancer screening in patients with renal failure. Materials and Methods: This study was done by face to face questionnaire in the 27th National Nephrology Congress to determine if the physicians dealing with chronic renal failure, hemodialysis or renal transplanted patients, recommend cancer screening or not and the methods of screening for cervix, prostate, breast and colon cancer. Results: One hundred and fifty six physicians were included in the survey. A total of 105 (67%) participants were male and the age of responders was 48±9 years. About 29% were specialists in nephrology, 28% internal medicine, and 5% were other areas of expertise. Some 48% of participants were hemodialysis certified general practitioners. Patients were grouped as compensated chronic renal failure, hemodialysis or renal transplanted. Of the 156 responders, 128 (82%) physicians recommended breast cancer screening and the most recommended subgroup was hemodialysis patients (15%). The most preferred methods of screening were combinations of mammography, self breast examination and physicianbreast examination. 112 (72%) physicians recommended cervix cancer screening, and the most preferred method of screening was pap-smear. Colon cancer screening was recommended by 102 (65%) physicians and prostate screening by 109 (70%) physicians. The most preferred methods of screening were fecal occult blood test and PSA plus rectal digital test, respectively. Conclusions: It is not obvious whether cancer screening in renal failure patients is different from the rest of society. There is a variety of screening methods. An answer can be found to these questions as a result of studies by a common follow-up protocol and cooperation of nephrologists and oncologists.

Keywords: Renal failure cases - hemodialysis - cancer screening - physician recommendations - Turkey

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Introduction

Cancer is frequently seen in patients with chronic renal failure and it is the main reason of morbidity and mortality in this group of patients. It has been shown in previous studies that the frequency of all malignancies has been increased by 20-50% in early and late stages of patients with renal failure. However, when compared with normal population at similar age and gender it has been reported that the relative death rate is 5-6 times more in normal population (Kyllonen et al., 2000; LeBrun et al., 2000; Adami et al., 2003; Vajdic et al., 2006; Wong et al., 2009).

The chance to provide curative therapy and long survival in cancer patients who have been diagnosed in early stages of the disease has led to early diagnosis and screening policies especially for the frequently seen breast, colorectal, cervix cancers but the effect of early diagnosis and cancer screening on the chance to be cured and on long survival is less clear in patients with chronic renal failure (Zarychanski et al., 2007).

The main reason to this is the high death rate and difficulty to provide optimum conditions due to the co-morbid diseases, and the management of side effects of the effective treatment and also nephrotoxicity. In addition cancer has worse prognosis in patients with chronic renal insufficiency and with renal transplants. Better survival rate is obtained nowadays because of extensive

*[1]Department of Medical Oncology, Sakarya University Education and Research Hospital, Sakarya, [2]Department of Medical Oncology, Mugla Sitki Kocman University Education and Research Hospital, Mugla, [3]Department of Internal Medicine, Division of Medical Oncology, Abant Izzet Baysal University Faculty of Medicine, Bolu, [4]Department of Medicine Education Gazi University Faculty of Medicine, [6]Dr. Abdurrahman Yurtarslan Oncology Education and Research Hospital, Clinic of Medical Oncology, Ankara, [5]Department of Nephrology Bezm-i Alem University Faculty of Medicine, Istanbul, Turkey *For correspondence: mugla.medicaloncology@gmail.com, dr.ozgur.tanriverdi@gmail.com*

usage of drugs which are aimed for the target and better management of side effects. These results are also valid for cancer patients with renal failure. For this reason, to emphasize the importance of early cancer diagnosis and to apply a different early diagnosis/ screening guideline may provide important advantage to this group (Zarychanski et al., 2007; Wong et al., 2009).

The aim of this study is the determination of physicians' attitudes who treat and follow up patients who are on hemodialysis/ renal transplanted on early diagnosis and screening of cancer.

Materials and Methods

Individuals and survey instrument

This study has been planned as a questionnaire to determine the attitude on diagnosis and screening methods of the physicians who deal with the treatments and follow up of patients with renal transplants and hemodialysis patients in Turkey.

This study was done by face to face questionnaire in the 27th National Congress of Nephrology, Hypertension, Renal Diseases and Transplantation to determine if the physicians dealing with chronic renal failure, hemodialysis or renal transplanted patients, recommend cancer screening or not and the methods of screening for cervical, prostate, breast and colorectal cancers.

This survey included the demographic properties of the physicians (age, sex, specialty, the length of working experience, the institution where they work, the place where he/she lives) as well as the questions which describe the attitudes on the methods of cancer screening and early diagnosis of cancer.

All the participants have been questioned in this survey whether they ask from their breast, cervical, colorectal and prostate cancer patients screening procedures and if yes which methods they chose and how frequently they propose the screening. The evaluation on four different cancer types has been done separately according to patients with chronic renal disease dialysis patients and with renal transplants.

Ethics

The protocol for this retrospective study was compatible with the local ethical guidelines. The study was approved by the Academic Committees in our center and written informed consent was obtained from all participants.

Statistical analyses

The data are expressed as the mean±standard deviation or the median and interquartile range (25-75%). The distribution of variables was analyzed with the Kolmogorov-Smirnov test. Quantitative variables with normal distribution were analysed with a two tailed, independent Student's test. Nonparametric variables were analysed with the Mann-Whitney U test. However , qualitative parameters were analysed with the Chi-Square test and Fisher's test. The Kruskal- Wallis test was used for comparisons between clinical and demographical variables. Finally, we used multivariate logistic regression analysis to indicate the effect of study variables on physicians recommendation ratio.

A significance value of $p<0.05$ was accepted as statistically significant. All of the analyses were performed using the Statistical Program for Social (SPSS) version 15.

Results

One hundred and fifty six patients were included in the survey. 105 responders were male (67%) and age average was 48±9. The most common age interval was between the ages of 40-49 (n=84, 53%). 29% of the physicians was nephrologists, 24% internal diseases specialist, 41% practitioners with dialysis certificates and 6% was from other specialties. Demographic properties of the participants were shown in Table 1.

82% of participants (n=128) propose breast cancer screening, 72% (n=112) propose routine screening for cervical cancer, 70% (n=109) for prostate cancer and 65% (n=102) for colorectal cancer. There was no statistically significant difference with Spearman correlation test between cervical screening proposals and prostate cancer screening proposals ($r=0.125$, $p=0.241$). However there was highly significant difference between the breast cancer screening and cervical cancer screening ($r=0.621$, $p=0.0025$), with colon cancer screening ($r=0.594$, $p=0.00014$) and with prostate cancer screening ($r=0.573$, $p=0.0031$). There was highly statistically significant difference between cervical screening proposal and colon cancer screening proposal ($p<0.01$, $r=0.42$) and with prostate cancer screening ($p<0.01$, $r=0.47$). In addition, the most significant difference was found between prostate cancer screening and colon cancer screening ($r=0.745$, $p=0.0013$).

By stratification of three groups as chronic renal disease or patients with transplants or patients who were

Table 1. Demographic Characterizations of Survey Responders in this Study (n=156)

Features		n	%
Gender	Female	51	33
	Male	105	67
Age groups (years)	<30	6	4
	30-39	54	35
	40-49	84	53
	50-59	10	7
	≥60	2	1
Duration of specialist practice (years)	1–5	56	36
	6–10	58	37
	11–15	27	17
	16–20	14	9
	≥20	1	1
Professions	Nephrologist	45	29
	Internist	37	24
	Practitioners	64	41
	Other	10	6
Location of work	City	122	78
	Town	34	22
Practice setting	Private hospital	65	42
	State hospital	91	58

on hemodialysis, it has been determined that all three patient groups were targeted with screening proposals for each type of cancer. 87% (n=91) of physicians proposed for breast cancer screening to all three groups, 82% (n=89) for prostate cancer in all three groups, 82% (n=91) cervical cancer in all three groups and for 71% (n=72) colorectal cancer in all three patient groups with renal disease. On the other hand when chronic renal failure patients at any stage of the disease (1-5) were taken as the basis, rate of physicians who propose cancer screening was 8% for breast cancer, 8% for colorectal cancer, 7% for prostate cancer and 5% for cervical cancer. Likewise, the rate of physicians who propose breast, colorectal, prostate and cervical cancer screening to their hemodialysis patients was 15 %, 15%, 15% and 10% respectively. The rate of physicians who propose cancer screening to their patients who had undergone renal transplants was 2% for breast cancer and 6%, 3% and 10% for colorectal, prostate and cervical cancers respectively. We have identified that cervical cancer screening proposal was significantly higher for patients with renal transplants when compared with other cancer types (df=2; χ^2=57.0; p=0.0011). No significant difference was observed between cancer screening types in patients with chronic renal insufficiency (1-5) and in patients on hemodialysis. With the stratification which was performed according to the diagnosis of the renal disease, the physician's proposals for each type of cancers the rates are heterogeneous the reason to that may be the insufficiency of the number of participating doctors and their general attitude towards this issue.

When reviewed in general, the proposed screening type for breast cancer is mammography, self breast examination and physicians' breast examination in combination. The screening proposals were for cervical cancers, pap- smear test, for colon cancers fecal occult blood test and for prostate cancers, PSA and rectal digital controls. Among separate analyses for each of the renal diseases there was no statistically significant difference regarding screening methods for breast, cervical and prostate cancers when compared with all renal diseases in total. However when screening methods for colon cancers were reviewed fecal occult blood test has been advised each year separately in patients with renal transplants unlike to other patients with renal diseases. When all the patients were considered physicians mostly advise breast, colorectal and prostate cancer screening to patients between 40-60 years of age interval. Cervical cancer screening was advised 2-3 years after the sexual activity has been ceased. Participants advised to patients breast cancer screening longer than every 2 years but smear test for cervical cancers and fecal occult blood test for colorectal cancers annually.

However, in logistic regression analysis there was no variable effective cancer screening (age, gender, professions, cancer type, duration of practice, and practice place).

Discussion

In this trial study we have tried to identify advises of the physicians among patient population with renal diseases including chronic renal insufficiency, patients on dialysis and patients with renal transplants for early diagnosis and screening of breast. Colorectal and prostate cancers which are the cancer types frequently seen in the community. We have identified that screening for breast and colorectal cancers are more prominent in this patient group and found that physicians offer less advises about this issue to this group of patients when compared to normal population.

Prior studies have shown that although there is no guideline or a study based evidence, nephrologists in many countries depending to their own personal experience advice cancer screening tests to their patients with chronic renal failure. When these studies are reviewed, we can see that nephrologists, without having a clear reason, advise breast and cervical cancer screening more frequently to their patients than colorectal cancer screening (Towler et al., 1993; Ward et al., 1998; Canfell et al., 2006; Gotzsche et al., 2006; Wong et al., 2008a; 2008b). In a similar study which was done by Wong et al. (2009) they have attracted attention to the fact that there was inconsistency between the nephrologists' approach to cancer screening and international early cancer diagnosis and screening guidelines. In our study also, it was shown that our group of physicians' advises of colorectal cancer screening were less frequent than the breast, cervical and prostate cancers in patients with chronic renal diseases.

The main reason of the inconsistency of the findings on screening advises for the normal population and this patient group could be the lack of an applicable and with highly detailed international guideline which is prepared with consensus.

In order to accept an evaluation as a cancer screening method, it has to meet some criteria, for example, the type of cancer has to be frequently seen in the society, cost- effectiveness of the method which will be used for screening has to be evaluated, and the ratio of the invasive intervention should be low, and the screening should not give harm to the patient (Wong et al., 2008; Rosenwasser et al., 2013; Scheid et al., 2013)

The reason of the little number of participants in the study of Wong et al. (2009) has been explained by the authors as the inadequate interest of nephrologists to the surveillance on cancer screening. In the same study it has been emphasized that cervical and breast cancers screening were more frequently advised by the physicians because of the national campaigns on these types of cancers in addition, they mention the influence of the interviews which appear in the media of the popular people where they give information on their health status without any reserve . It can be concluded that national campaigns may increase the awareness on cancer and fighting with cancer even among the physicians as individuals. Wong et al in their study (2009), referred to the limited number of studies and have shown that the ratio of screening proposals in their study is similar to the rates in other studies but indicated that the rate is below the national cancer screening statistics. Approximately 35 % of the physicians registered at nephrology, Internal Diseases and Practitioners/Family Practitioners associations have responded to this survey for this reason we think that the

interest on this subject is not adequate, we can link this situation to the lack of a cancer screening programmed. In our study, like Wong et al. (2009) study the level of knowledge on cancer screening could not be measured and it is not possible to understand whether low level of cancer screening is related to the physician's degree of knowledge and experience.

We can conclude that our physicians have lower rates of screening levels when compared to Wong et al. study (2009). When all patient groups are taken as basis, it was 86.3% for cervical cancer and 81.2% for breast cancer in Wong et al. study; the rates are 72% and 82% in ours respectively. Colorectal cancer screening proposals ratio is 65% in our study on the other hand in Wong study it was 47.6%. We can say that in both of the studies screening proposals for breast and cervical cancers are prominent although the rates are different. The low level of colorectal cancer screening frequency may be related to the endoscopy which is an invasive method as well as lack of having a cancer screening guidelines. Besides we think that low level of colorectal cancer screening may be due to the worries of renal disorders and electrolyte imbalances which may appear after laxative treatment which is done before endoscopy. It is not clear to explain why the ratio of (70%) prostate cancer screening is low in comparison with the targeted ratios in the national screening programmed.

Nowadays a strict cancer screening policy in dialysis patients is not recommended. However, the use of targeted drugs, a lot of better managing toxicity in cancer patients provides significant survival advantage. Would ever see the benefit of patients in clinical oncology, which is not possible to know in advance (Fischereder, 2008). Therefore, in terms of screening, especially the chances of curing the disease, in dialysis patients or transplant recipients may be appropriate. However kidney cancer incidence has increased in dialysis patients. Therefore, the radiological follow-up of cystic lesions is highly recommended (Komija et al., 2006; Fischereder, 2008; Kiberd 2013).

In our survey, physicians proposed to every kind of cancer screening to all their patients without considering the renal disease stratification this makes us to think that physicians approach their patients as they do with the normal population. In this case, taking into account that cancer risk is higher than the normal population in this group of patients and these patients have specific mortality and morbidity risks, a national or international screening guideline has to be prepared. Oncologists, nephrologists, and public health care physicians can cooperate and can prepare the most suitable screening flow chart by this way patients with chronic renal disease will be provided the effective screening. In future, stress should also be paid to the special precautions needed for use of tumor markers in patients with impaired renal function (Estakhri et al., 2013).

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