To cite this article: Cakmak HSG, Akdemir N. Knowledge and implication about oral antineoplastics drugs use of cancer patient. Turk J Clin Lab 2020; 5: 387-392.

Original Article

Knowledge and implication about oral antineoplastics drugs use of cancer patients

Kanser hastalarının oral antineoplastik ilaç kullanımına ilişkin bilgi ve uygulamaları

Huri Seval GONDEREN CAKMAK[1]*, Nuran AKDEMIR[2]

[1]Cankiri Karatekin University, faculty od nursery, Çankırı/TURKEY
[2]Department of Internal Medicine Nursing, Faculty of Nursing, Hacettepe University Ankara /TURKEY

Abstract

Aim: Study was conducted as descriptive to evaluate information and practice about oral antineoplastics drug used of cancer patients.

Material and Methods: There research sample consists of 100 people who use oral antineoplastic drugs in Ankara Numune and Ankara Yıldırım Beyazıt Education and Research Hospital Oncology wards. Patient conversation form and evaluation of drug information form, which was developed by the investigator according to literature, was used as a data obtaining an instrument. In the evaluation of data percentage and chi-square tests was used.

Results: Average age of the person that participates in surveying is 51.5±7,1. We observed that 48% of participants use capecitabine as oral antineoplastic, and 51% of participants have cure number between 0-3. 93% of participant that they informed about medicine by the doctor when prescribed, and 50% by the nurse at the outpatient clinic. It is observed71% of participants stake medicine not in time. As the reason for this case, forget fullness is on the top with a 51% rate. It is observed male more successful than female for taking medicine in time ($p<0.05$) and the rate of taking medicine in time is increasing with education level ($p<0.05$). Besides, we observed that the rate of taking medicine in time is lower for participants that informed verbally than informed verbal and written.

Conclusion: This study suggests that individuals have a low educational level successful in drug-taking at the same hour and the long period of drug-taking decrease this success. Female take assistance drug use more than male and taking assistance increases while the educational level decrease in both genders.

Keywords: cancer; cancer treatment; drug; oral chemotherapy

Corresponding author*: Huri Seval GONDEREN CAKMAK, Eldivan Vocational School of Health Services, Çankırı Karatekin University, Çankırı/TURKEY
E-mail: sevalgonderen@hotmail.com
ORCID: 0000-0003-2980-7804
Recevied: 13/01/2020 accepted: 09/03/2020
Doi: 10.18663/tjcl.674152

Volume 11 Number 5 p: 387-392

ÖZ

Amaç: Araştırma, kanser hastalarının oral antineoplastik ilaç kullanımına ilişkin bilgi ve uygulamalarını değerlendirmek amacıyla kesitsel çalışma olarak yapılmıştır.

Gereç ve Yöntemler: Araştırmanın örneklemini Ankara Numune Eğitim ve Araştırma Hastanesi ile Ankara Yıldırım Beyazıt Eğitim ve Araştırma Hastanesi Onkoloji polikliniklerinde, oral antineoplastik ilaç kullanan 100 kişi oluşturmuştur. Veri toplama aracı olarak literatür bilgisinden yararlanılarak araştırmacı tarafından hazırlanan "Hasta Görüşme Formu" ve "İlaca İlişkin Bilgilerini Değerlendirme Formu" kullanılmıştır. Verilerin değerlendirilmesinde ki-kare testi kullanılmıştır.

Bulgular: Araştırmaya katılan bireylerin yaş ortalaması 51.5±7,1 'dir. Bireylerin %48'inin oral antineoplastik ilaç olarak kapesitabin kullandığı, %51'inin kür sayısının 0-3 aralığında olduğu görülmektedir. Hastaların %93'ü ilaç ile ilgili bilgileri poliklinikte ilaç yazılması esnasında doktor tarafından, %50 si ayaktan kemoterapi alma ünitesinde hemşire tarafından sözlü eğitim şeklinde almaktadır. Bireylerin %71'inin ilacı aynı saatte almadıklarını ifade ettikleri görülmüştür. İlacı aynı saatte almama nedenleri arasında %51 oranı ile unutkanlık ilk sırada yer almaktadır. Erkeklerin kadınlara göre aynı saatte ilaç alma konusunda daha başarılı olduğu ($p<0.05$) ve eğitim düzeyi artıkça aynı saatte ilaç kullanma durumlarının arttığı görülmektedir ($p<0.05$). Bunun yanında sadece sözel olarak bilgi alanların, hem sözel hem yazılı bilgi alanlara göre 'aynı saatte ilaç kullanma' oranlarının daha düşük olduğu görülmektedir ($p<0.05$).

Sonuç: Eğitim seviyesi düşük olan kişilerin aynı saatte ilaç kullanma konusunda başarısız olduğu ve hastanın kür sayıları arttıkça aynı saatte ilaç kullanmada başarılarının azaldığı belirlenmiştir. Kadınların erkeklere göre ilaç kullanımında daha fazla yardım aldığı ve tüm bireylerde eğitim seviyesi düştükçe ilaç kullanımında yardım almanın arttığı belirlenmiştir. Ayrıca bireylerin yaşı arttıkça ilaç almayı daha çok unuttukları belirlenmiştir.

Anahtar kelimeler: İlaç; kanser; kanser tedavi; oral kemoterapi

Introduction

Cancer is one of the leading health problems of our age for many reasons such as increased life expectancy, developments in diagnosis and treatment methods. The frequency of cancer increases by 1-2% per year in almost every country worldwide [1]. In parallel with this increase in cancer incidence, treatment methods and options are increasing day by day. One of these treatment methods is the oral administration of antineoplastic drugs. The number of oral antineoplastic drugs and their importance in an application is increasing every day [2, 3].

Administration of oral antineoplastic agents provides several advantages to patients. These advantages; application shortening, increased independence, non-invasive, decrease the burden of the patient and increase the quality of life [4,5]. Despite these advantages, it is a disadvantage that patients do not comply with the principles such as correct dosage, right time, correct storage, proper retrieval. Drug compliance; with medical advice, patient behaviour and lifestyle is defined as incompatible and discontinuity of drug, wrong dosage, misuse of drugs at the wrong time is considered applications. Non-compliance with drug therapy in cancer patients may lead to the development of drug resistance, low response to treatment, the progression of disease and death [5,6]. For patients to take optimal advantage of oral antineoplastic drug therapies, it is essential that they take their medication as recommended and correct. Patient education has great importance in terms of increasing patient safety, optimal dose and compliance with the treatment plan. Nurses working in the oncology outpatient clinic should educate the patient and the family. Thanks to drug training, ensuring the continuation of treatment is beneficial in preventing or early detection of problems at home [7, 8].

In the literature, the adaptation of the patients receiving oral antineoplastic medication, the factors affecting their adaptation and the use of drugs were evaluated, nursing care for the problems and applications planned [6,9,10]. In our country, the studies evaluating the knowledge and applications of the patients taking oral antineoplastic drugs on drug use could not reach. Therefore, there is a need to evaluate the knowledge and applications of cancer patients using oral antineoplastic drugs. This study aimed to evaluate the knowledge and applications of cancer patients receiving oral antineoplastic drugs.

Material and Methods

Setting and Sample

The study was carried out cross-sectional studies in order to evaluate the knowledge and applications of cancer patients on the use of oral antineoplastic drugs. Due to insufficient data on the number of people using oral antineoplastic drugs, an exact number could not determine, and sample selection based on "duration. According to this study, people who used oral antineoplastic drugs in Oncology outpatient clinics of Ankara Numune Training and Research Hospital and Ankara Yıldırım Beyazıt Training and Research Hospital between March 1, 2009, and June 1, 2009, in 3 months formed the sample. Repetitive applications excluded in the study, and 110 patients reached during this period. 2 out of 110 patient died before the meeting, and eight patient could not interview because they were out of town. Eighteen years - 65 years of age, cncer patients, at least one cure oral antineoplastic drug, who can communicate quickly, who agreed to participate in the study completed with 100 people.

Instruments

The research data collected by the researcher using "Patient Interview Form" and "Drug Information Evaluation Form" prepared by the literature[4-10].

Data Collection Procedure

Support was obtained from the policlinic nurse and doctor to find patients using oral antineoplastic agents. Besides, we followed up and reached to the patients through the secretariat of the polyclinic. The researcher interviewed the patients in the relaxation room, which was a quiet area. Interviews with each patient took 20-25 minutes.

Ethical consideration

The application permission obtained from the General Directorate of Treatment Services of the Ministry of Health, and "LUT 08 / 68-31" has been obtained from Hacettepe University Ethics Committee. The participants were informed about the study. Then, both individuals permitted in both verbal and written form.

Statistical Analysis

SPSS 13 program used in the statistical analysis of the data. Descriptive data were shown as numbers and percentages. The relationship between the knowledge-application and the independent variables analyzed by chi-square significance test.

Results

The mean, standard deviation of the ages of the participants was 51.5 ± 7.1. Of these participants, 53% of the patients were female, 53% of them were primary and lower education, 49% of them were homemakers, and 68% of them lived with their spouse and children. 31% of patients are metastatic breast cancer, and 60% of patients receive oral antineoplastic treatment alone. 48% of patients use capecitabine, and 51% of the patients had cure number 0-3 (Table 1).

Table 1. Demographic and Clinical Data of the Participants

Features		n	%
Age X±SS: 51.5±7,1	39- 47	12	12
	48-56	45	45
	57-65	43	43
Gender	Female	53	53
	Male	47	47
Diagnosis of the disease	Breast Cancer	31	31
	Colon Cancer	26	26
	Leukemia	15	15
	Ovarian Cancer	9	9
	Melanoma	9	9
	Brain cancer	8	8
	Rectum Cancer	2	2
Oral Chemotherapy drug	Capecitabine	48	48
	Temozolomide	17	17
	Tegafur-uracil	11	11
	Cyclophosphamide	9	9
	Tiguanin	8	8
	Mercaptopurine	7	7
Cure	0-3 Cure	51	51
	4-7 Cure	47	47
	8-11 Cure	2	2
Total		100	100

95% of the individuals experienced nausea and vomiting related to the antineoplastic drug, and 95% did not record the onset, severity, and duration of the side effect when the drug-related side effect developed. The drug uses medication outside. 100% of these drugs is antiemetic, and 95% is antacid. 93% of the patients received information about the drug by the doctor, and 50% of the patients received verbal training by the nurse. Individuals stated that 71% did not take the drug at the same time. For reasons of not taking the drug at the same time, forgetfulness (51%) is in the first place. 58% of the patients said that when they remembered their oral antineoplastic drug, they forget to take the medication. (Table 2). 21% of individuals use oral antineoplastic drugs (with a doctor's recommendation (68%), with their request (31%) have left.

Volume 11 Number 5 p: 387-392

Table 2. Status of drug use by individuals			
Features		n	%
Same Time/ Everyday	Yes	29	29
	No	71	71
Causes not to use the drug as recommended	Forgetfulness	51	51
	Neglect	44	44
	Side effects of the drug	14	14
Drug withdrawal cases during cure	Yes	21	21
	No	79	79
Causes of drug withdrawal *(n=21)	Doctor with proposal	15	68,2
	With own request	6	31,8
When the drug is forgotten to take*(n=51)	I get when I remember	30	58,8
	I get two at the next dose	14	27,5
	Continue my normal dose schedule	7	13,7
* The question was given more than one answer, Percentages over "n"			

81% of the patients stated that they received help with oral antineoplastic drug use. The patients mostly received help from their children (59.8%) and about drug time (44.4%). When the information of individuals about the drug examined; 93% of patients know how many times a day the drug will be used, 90% of patients know how often to go to control, and 75% of patients know the expected side effects of the drug. On the other hand, only 1% of patients know how to manage the expected side effects of the drug, and Only 3% of the patients know what to do when the drug vomited.

In our study, men are more successful than women at the same time ($p<0.05$), and the use of drugs increased at the same time as the education level of the patients increased ($p<0.05$). This study suggests the patients who received only verbal information had lower rates of drug use at the same time' than those who received oral and written information ($p<0.05$). In the statistical analysis, no significant difference found between age and number of cures and usage at the same time ($p>0.05$). As the level of education in the patients decreased, getting help in the use of drugs increased. Besides, participations who receive oral information about drug use receive more help in drug use ($p<0.05$), and the age of the individual's increases and the women have forgotten to take more drugs. Also, patients receiving oral information about drug use seem to have forgotten to take more drugs ($p<0.05$)(Table3).

Table 3. According to age, gender, educational status, number of cures and the way of taking information at the same time taking medication, taking medication use and taking medication						
Feature	Same Time/ Everyday		Getting help		Forgetfulness	
Age	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n(%)
39-47	5(17,2)	7(9,8)	6(7,4)	6(31,6)	-	12 (24,5)
48-56	13(44,8)	32(45)	39 (48,1)	6(31,6)	22 (43,1)	23(47)
57-65	11(37,9)	32(45)	36(44,1)	7(36,8)	29(56,9)	14(28,5)
Test value	p:0.063/X2: 7.394		p:0,082/ X2:2,488		p:0,001/ X2:7,248	
Gender	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n(%)
Female	12(41,3)	41(57,7)	44(54,3)	9(47,3)	45(88,2)	8(16,3)
Male	17(58,6)	30 (42,2)	37 (45,6)	10 (52,6)	6(17,8)	41(83,7)
Test value	p:0,001/ X2:4.04		p:0,061/ X2:5,870		p:0,003/ X25,482	
Educational status	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n(%)
Primary school	12(41,3)	41(57,7)	47(58)	6 (31,5)	23 (45)	30 (61,2)
Middle School	10(34,4)	26(36,3)	30(37)	6 (31,5)	20 (39,3)	16(32,7)
High school	7 (24,1)	4(5,6)	4(4,9)	7 (36,8)	8 (15,7)	3 (6,1)
Test value	p:0,002/ X2:4.209		p:0.000/ X2: 5,744		p:0.067/ X2:4.592	
Informed about drug	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n(%)
Verbal	19 (65,5)	52 (73,2)	69 (85,2)	2 (10,6)	45 (88,2)	26 (53)
Verbal-written	10 (34,4)	19 (26,7)	12 (14,8)	17 (89,4)	6 (11,8)	23 (47)
Test value	p:0,044/ X2:5.286		p:0,002/ X2: 4,764		p:0,000/ X2:3,499	
Cure	Yes n (%)	No n (%)			Yes n (%)	No n(%)
0-3 cure	18 (62)	33 (46,4)			22 (43,1)	29(59,2)
4-7 cure	10 (34,4)	37 (52,1)			28 (54,9)	19 (38,8)
8-14 cure	1 (3,4)	1 (1,4)			1(2)	1 (2)
Test value	p: 0,073/ X2:5,286				p:0.094/ X2:7,333	
Chi-square test						

Discussion

Most of the individuals who participated in the study used antiemetic and antacid besides oral antineoplastic drug. It is also noteworthy that patients do not know about drug interaction. In the studies recommended that oral antineoplastic drugs be taken 2 hours before or after antacid intake [11-12]. Nausea and vomiting were the most common side effects, and individuals had a lack of knowledge in managing nausea and vomiting. More recently, studies showed counselling on issues such as how long the oral antineoplastic drug should repeat after vomited and how to remove waste [12,13].

Decker et al. in his study with oral antineoplastic drug cancer patients, statistically significant relationship found between symptom management and drug compliance [14]. Similarly, in a study of the factors affecting the compliance of oral chemotherapy drugs in patients with colon cancer, it was found that the symptoms affected drug compliance [15]. Most of the individuals in our study does not record the onset, severity, and duration of the related side effects. When literature is reviewed, it recommends that individuals record this information and inform the medical team [4,5,9,12,16].

Most of the patients received drug training verbally. Studies have shown that oral administration of drug education is insufficient. Thus, drug education should support by many methods such as written material, electronic follow-up system at home, reminders, message tracking, telephone consultancy and follow-up [5,6,8,17].

In our study, very few of the patients used the name of the oral antineoplastic drug correctly. Moreover, most of the patients have identified their medicine only with colour, shape, and box. At the same time, most of the patients expressed their medication as mgr but not as tablet number. As is known, oral antineoplastic drugs have many forms in different milligrams. Therefore, it should include in the follow-up of drug doses in drug education. According to studies that the drug use guidelines contain mgr does the information of the drugs [10,12,13].

In contrast to our study; Marques et al. (2008) reported that 86.9% of the individuals know the name and dose of the drug correctly. We think that this situation originates most of the patients have a high education level (80.4%)[18]. On the other hand, caregivers of cancer patients have been experiencing difficulties in knowing the side effects of treatment, symptom control, the sources they can refer to, mgr drugs [19,20].

This study suggests that most of the patients received help from their relatives about drug time, cure program and drug dose. Similarly, in the literature, it is seen that cancer patients receive help from caregivers on many issues such as drug use [21,22]. In our study, patients who received both verbal and written information were more successful in using drugs at the same time ($p<0.05$). Studies have shown that drug education train with written and visual materials and the patient needs to use the right medication [7,12]. In this study, the rate of drug forgets increases as individuals' ages increase ($p<0.05$). Similarly, in many studies, it was found that the most common behaviour of drug use was seen in the elderly group [23,24].

Unlike our study, Marques et al. found that the rate of forgetting of individuals was 6.6%. The reason for the difference in the study may think to be that most of the individuals were graduated from university (80.4%) [18]. When the patients forget their drugs, most of the patients often take the drug when recalled or take two drugs at the next dose. Chan et al. found that 38.8% of the patients in the study with 126 cancer patients jumped the drug when they forgot to take the drug, 46.6% of them took two at the next dose time. [25].

Conclusion

Individuals who participated in the study had side effects due to oral antineoplastic drug and Patients experience difficulty in recording, monitoring and managing side effects. Patients have comorbidity and polypharmacy.

Suggestions

• According to the education, age, and duration of drug use of cancer patients using oral antineoplastic drugs, drug training should be given by using written and visual materials.

• In oncology outpatient clinics and outpatient chemotherapy units, regular drug education should train to the patients, and the patients should monitor when they come to each control.

Study Limitations

The most important limitation of the study is that the drug use ınformatıon base on the patient declaration. Besides, there are several potential problems related to reliability because the patient does may include a self-reporting response bias or may have been not reported correctly.

Declaration of conflict of interest

The authors received no financial support for the research and/or authorship of this article. There is no conflict of interest

Volume 11 Number 5 p: 387-392

References

1. Ferlay J, Soerjomataram I, Dikshit R, Eser S, Mathers C, Rebelo M, et al. Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. International Journal of Cancer 2015; 136: 359-86.
2. Betcher J, Dow E, Khera N. Oral Chemotherapy in Patients with Hematological Malignancies—Care Process, Pharmacoeconomic, and Policy Implications. Current Hematologic Malignancy Reports 2016; 11: 288-94.
3. Durna Z, Akın S, Özdilli K. İç hastalıkları hemşireliği uygulama rehberi: Nobel Tıp Kitapevi. 2011. 95-98. ISBN: 978-975-420-865-8.
4. Kavookjian J, Wittayanukorn S. Interventions for adherence with oral chemotherapy in hematological malignancies: A systematic review. Research in Social and Administrative Pharmacy 2015; 11: 303-14.
5. Schneider SM, Adams DB, Gosselin T. A tailored nurse coaching intervention for oral chemotherapy adherence. Journal of The Advanced Practitioner in Oncology. 2014; 5: 163.
6. Servick K. 'Nonadherence': A bitter pill for drug trials. Science 2014; 346: 288-9.
7. Spoelstra SL, Given BA, Given CW, Grant M, Sikorskii A, You M, et al. Issues related to overadherence to oral chemotherapy or targeted agents. Clin J Oncol Nurs 2013; 17: 604-9.
8. Spoelstra SL, Schueller M, Hilton M, Ridenour K. Interventions combining motivational interviewing and cognitive behaviour to promote medication adherence: a literature review. Journal of Clinical Nursing 2015; 24: 1163-73.
9. Barillet M, Prevost V, Joly F, Clarisse B. Oral antineoplastic agents: how do we care about adherence? British Journal of Clinical Pharmacology 2015; 80: 1289-302.
10. DeKoekkoek T, Given B, Given CW, Ridenour K, Schueller M, Spoelstra SL. mHealth SMS text messaging interventions and to promote medication adherence: an integrative review. Journal of Clinical Nursing 2015; 24: 2722-35.
11. Bindler RJ. Inpatient and outpatient pharmacy monitoring of oral antineoplastic medications. Hospital Pharmacy 2015; 50: 91.
12. Lombardi C. Patient adherence to oral cancer therapies: a nursing resource guide. OncoLink org Last modified May. 2014; 23.
13. Jennifer Matthews R, Caprera PH. Essentials of Oral Oncolytics: Developing a Nursing Reference. Clinical Journal of Oncology Nursing 2014; 18: 88.
14. Decker V, Spoelstra S, Miezo E et al. A pilot study of an automated voice response system and nursing intervention to monitor adherence to oral chemotherapy agents. Cancer Nurs 2009; 32: 20-9.
15. Kim JH. Influencing Factors on Medication Adherence in Colorectal Cancer Patients Receiving Oral Chemotherapy. Asian Oncology Nursing 2012;12
16. Timmers L, Boons CC, Mangnus D et al. Adherence and Patients' Experiences with the Use of Capecitabine in Daily Practice. Frontiers in Pharmacology 2016; 7.
17. Spoelstra SL, Given CW, Sikorskii A, Majumder A, Schueller M, Given BA. Treatment with oral anticancer agents: symptom severity and attribution, and interference with comorbidity management. Oncol Nurs Forum 2015; 42: 80-8.
18. Marques PAC, Pierin AMG. Factors that affect cancer patient compliance to oral anti-neoplastic therapy. Acta Paulista de Enfermagem 2008; 21: 323-9.
19. Mendy Moody R, Joyce Jackowski M. Are patients on oral chemotherapy in your practice setting safe? Clinical Journal of Oncology Nursing 2010; 14: 339.
20. Steele RG, Fitch MI, editors. Needs of family caregivers of patients receiving home hospice care for cancer. Oncology Nursing Forum 1996.
21. Longman AJ, Atwood JR, Sherman JB, Benedict J, Shang T-C. Care needs of home-based cancer patients and their caregivers Quantitative findings. Cancer nursing. 1992; 15: 182-90.
22. Oya Sevcan O, Sezgin S. Kanser Hastasına Bakım Veren Aile Bireylerinin Bakım Verme Yüklerinin Belirlenmesi. Journal of Psychiatric Nursing 2015; 6: 33-9.
23. Bilgili N. Ankara'da Yaşayan Bir Grup Yaşlı Bireyde İlaç Kullanım Uygulamaları ve İlaç Bilgi Düzeylerinin Belirlenmesi. TAF Preventive Medicine Bulletin 2010; 9.
24. Partridge AH, Archer L, Kornblith AB et al. Adherence and persistence with oral adjuvant chemotherapy in older women with early-stage breast cancer in CALGB 49907: adherence companion study 60104. Journal of Clinical Oncology 2010; 28: 2418-22.
25. Chan A, Leow YC, Sim MH. Patients' perspectives and safe handling of oral anticancer drugs at an Asian cancer center. Journal of Oncology Pharmacy Practice 2009; 15: 161-5.