



Research article

The pattern of drug information regarding adjuvant endocrine therapy among breast cancer patients in Hanoi: a cross-sectional study

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ARTICLE INFO

Article history

Received 12 July 2025

Revised 15 November 2025

Accepted 22 November 2025

Keywords

Drug information

Beast cancer

Cancer

Endocrine therapy

ABSTRACT

Drug information plays a crucial role in the treatment of breast cancer (BC) patients receiving adjuvant endocrine therapy (AET). However, gaps remain in the provision of such information, including its sources, content related to AET use, and patients' information needs. This study aims to explore these gaps in drug information among BC patients receiving AET. A cross-sectional study was conducted on 863 female BC outpatients receiving AET at the two largest oncology hospitals in Hanoi from April 2020 to July 2020. Data was collected via an interviewer-administered questionnaire. The mean age of patients was 53.7 ± 10.3 years, and 57.7% were diagnosed with stage II cancer. The majority of patients reported receiving information from doctors (96.6%), while fewer received information from pharmacists (22.0%) and nurses (14.8%). Most patients received information about dosage and administration (88.8%), AET duration (80.6%), BC stage and severity (78.6%), and the purpose of using endocrine drugs (63.7%). However, around 40% to 50% of patients received information about the names of endocrine drug, monitoring of AET effectiveness, management of missed doses and overdoses, and potential ADEs. Only 27.2% of patients received advice on how to prevent/manage potential ADEs. About 50% of patients had drug informational inquiries and mainly sought answers from doctors. Doctors were the main source of information for cancer patients, but few received essential information for medication adherence and safety. Pharmacists should strengthen their role in providing comprehensive, drug-specific information and develop suitable counseling materials for cancer patients in Vietnam.

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<http://doi.org/10.59882/1859-364X/341>

INTRODUCTION

Breast cancer (BC) is one of the most common cancers and the leading cause of death among women worldwide, including in Vietnam. The treatments of breast cancer include various combinations of surgery, chemotherapy, radiation therapy, and hormone therapy. In which, advances in early detection and the use of adjuvant endocrine therapy (AET) have contributed to prolonging survival of breast cancer patients. During treatment, patients often face various fears and anxieties related to the disease, treatment methods, risk of recurrence, changes in appearance, etc. Moreover, due to the long treatment time and the combination of multiple treatments, breast cancer patients have a high demand for information [1-4]. Therefore, providing adequate information to patients plays an essential role in optimizing treatment, helping to increase patient knowledge about the disease and medication, supporting patients in making treatment decisions, improving treatment adherence, enhancing trust, and improving the quality of life [1, 5-8]. Many studies in the world have reported that well-informed and satisfied patients tend to have higher trust in the necessity of using medication and have better medication compliance [8-10].

For the above reasons, identifying the information needs and satisfaction levels of patients can help healthcare workers determine gaps in information provision and improve healthcare services in the future; especially in the current era, the information can be easily access and diverse. However, the status of drug information and the level of patient satisfaction with the information varies remarkably between countries and regions, hospitals, and depending on patient characteristics such as gender, age, disease stage, etc [1, 4, 5, 11-15].

In Vietnam, a developing country in Southeast Asia with a high-pressure healthcare system and a low ratio of healthcare workers per capita, doctors remain as the primary source of information for patients. Clinical pharmacists, the principal force in charge of providing drug information and consulting on drug use for patients in the multidisciplinary healthcare team, were demonstrated to do these activities effectively. However, these duties were not implemented regularly at the hospital level and not to the similar extent across hospitals [16]. Vietnam National Cancer Hospital (K Hospital) and Hanoi Cancer Hospital are two specialized cancer hospitals with the highest number of breast cancer patients seeking consultation and receiving endocrine therapy in the northern region of Vietnam. However, resource limitations, diverse patient characteristics, low education levels, and low incomes pose challenges in providing information optimally to patients. Therefore, it is essential to describe the drug information situation and identify the information gaps so that pharmacists could propose suitable interventions for better drug information, which could be a facilitator for medication adherence and treatment effectiveness. This study aimed to explore the sources and content of AET-related drug information, patients' satisfaction, and unmet counseling needs among breast cancer patients at two cancer hospitals in Hanoi in 2020.

MATERIALS AND METHODS

Study design and participants

A cross-sectional study was conducted to assess the status of having information about AET, satisfaction with the information, sources of information, and informational queries about drugs among breast cancer patients receiving AET at two cancer hospitals

in Hanoi (K Hospital and Hanoi Cancer Hospital) from April 2020 to July 2020. It included patients (i) aged 18 years and older; (ii) diagnosed with breast cancer stage I-III; (iii) were prescribed tamoxifen or aromatase inhibitors (letrozole, anastrozole, and exemestane) for at least three months until the time of the interview. We included patients using the AET for at least 3 months because it allows them to experience the medication's usage and effects, enabling them to identify their essential information and helpful sources to address their actual concerns [1, 12]. Patients were excluded if they were concurrently diagnosed with other cancer types, refused to participate in the survey, or could not answer the questionnaires independently (deaf, speech-impaired, etc).

Sample size and sampling method

No formal sample size calculation was performed. All eligible patients who fulfilled the inclusion and exclusion criteria during the study period were enrolled

Patient recruitment and data collection procedure

Potential subjects were approached at the hospital's health insurance dispensing area during their routine visits for AET. These patients were subsequently screened based on the study's predefined inclusion and exclusion criteria. Those who met the study eligibility criteria were introduced to the study objectives and invited to participate. Patients who agreed to join the study provided written confirmation of their consent using the Informed Consent Form. Clinical information such as disease stage and current AET regimen was verified using hospital medical records and discharge summaries. Data were collected through face-to-face interviews using a structured AET drug information questionnaire with the guidance of three well-trained pharmacy students. To

ensure that participants correctly recognized what was meant by "endocrine therapy", the research team showed each patient the actual medication package corresponding to their prescribed AET drug, which had been identified in advance from their medical records.

The AET drug information questionnaire

The questionnaire, in addition to questions about patient characteristics, consists of three main sections: drug information sources, the topics of AET information patients have received and their level of satisfaction with those topics, and patients' needs for additional medication information. The specific questions in each section are as follows:

- Drug information sources: One item asked patients to indicate from which sources they got the information about the AET in the listed options (doctors, pharmacists, nurses, friends or relatives, other patients, mass media, scientific journals or books, and other sources). The question was created based on the results of previous studies on common sources of medication information for cancer patients [1, 12].

- AET information and satisfaction: Patients were asked whether they received information about ten topics related to the disease and usage of AET and how they were satisfied with the information on each topic on a 5-point Likert scale. The topics were the disease-related (BC stage and severity, disease recurrent possibility while on the AET) and usage drug AET-related (aims of the AET, drug name, dose, and administration, AET duration, missed dose or overdose management, effectiveness monitoring, potential adverse drug events (ADEs), and ADE prevention and management). The topics were selected based on the existing tools about drug information for patients and they are considered essential

for correct and safe use of medication and patients’ belief in and adherence to medications [17, 18].

- AET information needs: This part included five questions. Three were created by the research group to ask patients if they had ever had inquiries about AET, who they would contact to provide an answer, and which option would be the best to describe the response, not resolved, partially resolved, mostly resolved, or completely resolved. The last two were adopted from EORTC QLQ-INFO25 [18]. One was about whether patients desired to get more information about the AET. The other asked patients about their assessment of the overall usefulness of the information they got on a 4-point Likert scale. The scores of 3 and 4 were considered useful.

Data analysis

The data was managed by Microsoft Excel software version 16.97.2 and analyzed using Rstudio software version 4.3.1. Categorical variables were presented as numbers (percentages, %), continuous variables as mean (standard deviations, SD), or as median (interquartile ranges, IQR).

Ethical Consideration

The study was approved by the Ethics Committee of K Hospital (number 1558/BVK-HDDD). Permission was also obtained from Hanoi Cancer Hospital. All patients agreed to join the study signed informed consent before the interview.

RESULTS AND DISCUSSIONS

RESULTS

Patient characteristics

A total of 863 patients participated in this survey; the characteristics of the subjects were presented in Table 1. The mean age was 53.7 ± 10.3 years and ranged from 25 to 81 years. Most patients were 60 years and younger

Table 1. Characteristics of the subjects

Characteristics	Results*
Age (years), mean ± SD, min-max	53.7 ± 10.3, 25-81
< 40	82 (9.5)
40 ≤ age ≤ 60	535 (62.0)
> 60	246 (28.5)
Area of residence	
Out of Hanoi	457 (53.0)
Hanoi City	406 (47.0)
Marital status	
Married	716 (83.0)
Single/divorced/widowed/separated	147 (17.0)
Monthly personal income	
No income	305 (35.3)
Less than 5 million VND	276 (32.0)
5 million VND and above	282 (32.7)
Education status	
High school and less	626 (72.5)
University/college and above	235(27.5)
Occupation	
Farmer	244 (28.3)
Retire/housewife	236 (27.3)
Employee	172 (19.9)
Merchant	118 (13.7)
Health worker	10 (1.2)
Unknown	83 (9.6)
Had postmenopause status	761 (88.2)
Stage disease	
I	224 (26.0)
II	497 (57.6)
III	141 (16.4)
Previous surgery treatment	
No	3 (0.3)
Mastectomy	809 (93.7)
Conservation	51 (5.9)
With previous chemotherapy treatment	760 (88.1)
With previous radiotherapy treatment	516 (59.8)
Adjuvant endocrine therapy	
Tamoxifen	375 (43.5)
Aromatase inhibitors (anastrozole, letrozole, exemestane)	488 (56.5)
Duration of use adjuvant endocrine therapy	
3 months - 1 year	181 (21.0)
1 - 2 years	201 (23.3)
2 - 5 years	402 (46.6)
5 years and above	79 (9.1)
With concomitant medication	525 (60.8)
With comorbidities	406 (47.0)

*Categorical data are presented as the number (percentage), quantitative data are presented as the mean (standard deviation).

(71.5%), had a high school and less educational level (72.7%), were diagnosed with stage II disease (57.7%), underwent mastectomy surgery (93.7%), and had previously undergone chemotherapy (88.1%). The duration of endocrine therapy used mainly between 2 and 5 years, with approximately 45.0% of patients using it for less than two years.

The gap in drug information about adjuvant endocrine therapy among breast cancer patients

The drug information sources

The study identified several sources of drug information, including health workers (doctors, pharmacists, nurses), friends/relatives, fellow patients, mass media, scientific journals, and specialized books (Figure 1). The majority of patients received information from doctors (96.6%). The proportion of patients receiving information from fellow patients and mass media was also relatively high (47.4% and 39.3%, respectively), while the proportion of patients who received drug information from pharmacists and nurses was relatively low (22.0% and 14.8%, respectively).

The AET information and patients' satisfaction

Regarding the topics related to AET information, all patients in this study received at least one drug information topic in the survey. Information about diseases and the general use of drugs was provided to most patients; however, other information topics were obtained by only a limited proportion of patients. Most patients received information about dosage and administration (88.8%), AET duration (80.6%), BC stage and severity (78.6%), and the purpose of using endocrine drugs (63.7%). However, around 40% to 50% of patients received information about the names of endocrine drug, AET effectiveness monitoring, management of missed doses and overdoses, and potential ADEs. Only 27.2% of patients received advice on how to prevent/manage potential ADEs. The study found that only 62 patients completely received with all drug information (7.2%).

When evaluating the level of satisfaction, the proportion of patients' satisfaction with the information received was fairly high, with over 80% of patients rated the “satisfied” and “very satisfied” categories. The detailed results are described in Figure 2.

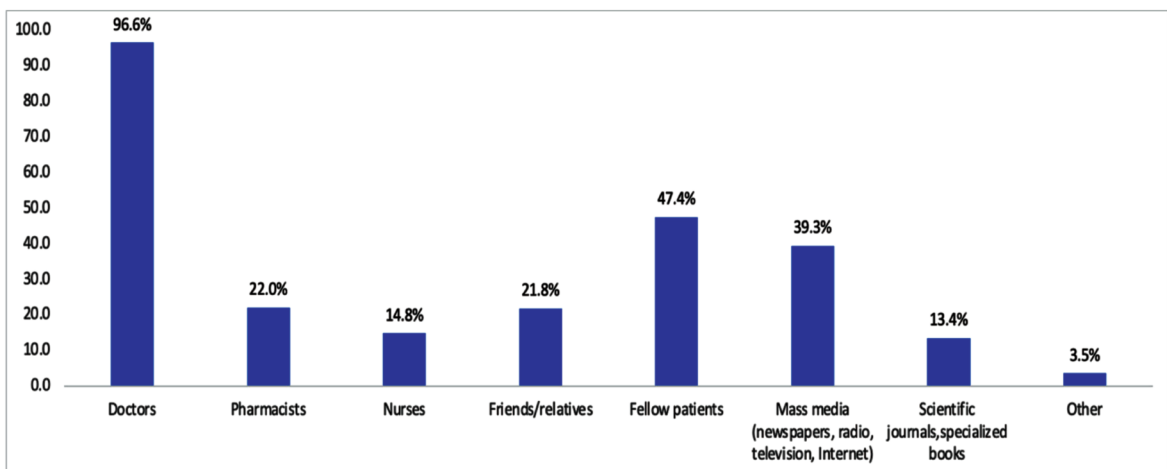
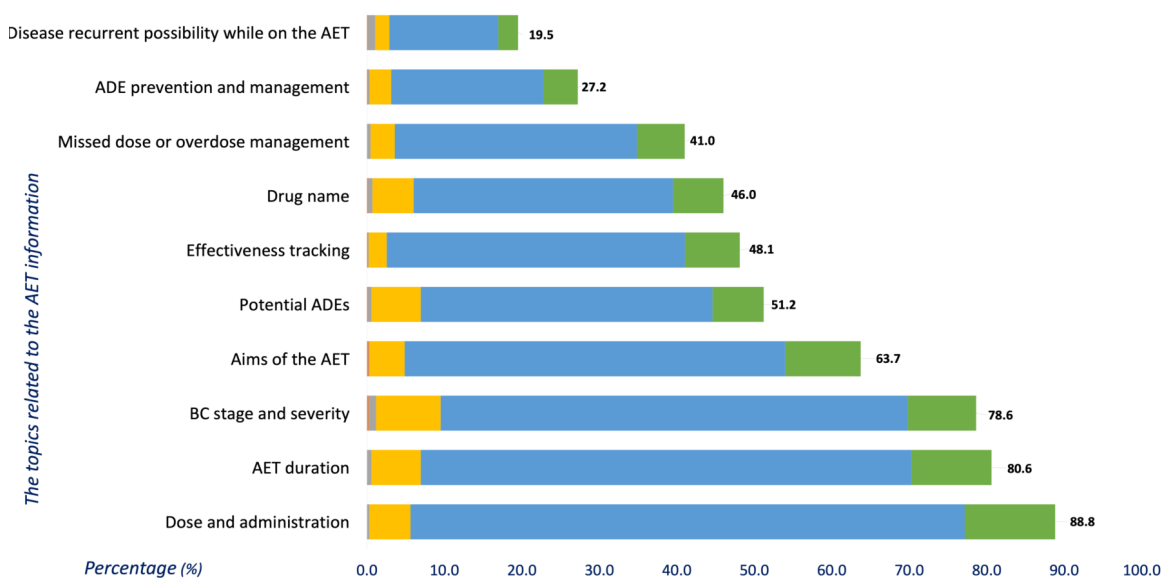


Figure 1. Characteristics of drug information sources



The topic	Patients receiving information, n (%)	The proportion of satisfied patients (%)				
		Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Dosage and administration	853 (88.8)	0	0.4	6.0	80.5	13.1
Duration of use	686 (80.6)	0	0.7	7.9	78.6	12.8
Disease staging and severity	678 (78.6)	0.3	1.2	10.6	76.7	11.2
Purpose of using endocrine drugs	550 (63.7)	0.4	0.2	7.1	77.1	15.3
Adverse drug reactions	442 (51.2)	0.2	0.9	12.4	73.5	12.9
Monitoring drug effectiveness	415 (48.1)	0.2	0.2	4.8	80.0	14.7
Name and type of endocrine drug	397 (46.0)	0.3	1.3	11.6	72.8	14.1
Management missed doses and overdoses	354 (41.0)	0	1.1	7.6	76.3	15.0
How to prevent/manage potential adverse events	235 (27.2)	0.4	0.9	10.2	72.3	16.2
The possibility of disease recurrence while using the drug	168 (19.5)	0.6	4.8	9.5	72.0	13.1

Notes: The proportion of patients satisfied with information is only calculated among the number of patients who received information

Figure 2. The proportion of patients receiving information on different topics and their level of satisfaction with received information

The patients’ AET information needs

In the study, about 50% of patients had drug informational inquiries and mainly sought for doctors to get answers. While the

highest proportion of patients raised queries with doctors (47.9%), lower proportions of patients raised queries with other surveyed subjects, such as fellow patients (17.1%),

friends and relatives (7.0%), pharmacists (2.9%), and nurses (2.4%). The highest rate of patients with completely resolved queries was observed among patients consulting by doctors (72.2%). While around 50% of patients found their inquiries completely resolved by pharmacists and nurses. This rate was lowest for inquiries with friends, relatives, and fellow patients (25.0% and 17.6%, respectively) (Table 2).

Table 2. Characteristics of the informational queries of drug information for patients

Subject answers the inquiries	Patients with informational inquiries [#] , n (%)	Response at the completely resolved level ^(*) , n (%)
Doctors	413 (47.9)	298 (72.2)
Pharmacists	25 (2.9)	14 (56.0)
Nurses	21 (2.4)	11 (52.4)
Friends and relatives	60 (7.0)	15 (25.0)
Other patients	148 (17.1)	24 (17.6)
Other	4 (0.5)	4 (100)

Notes:[#] the proportion of patients with information inquiries were calculated over the total number of patients (N=836) and patients can choose multiple answers

^(*) the proportion of patients with complete responses is only calculated among the number of patients who had inquiries with that specific entity

For the two general questions, most patients evaluated the drug information received as useful (92.7%). In addition, 155 patients (approximately 18.0%) still expressed the need for further medication information.

DISCUSSION

This study illustrated the information among breast cancer patients undergoing AET at cancer hospitals in Vietnam on aspects of drug information sources, drug information

content, and characteristics of drug information response to queries.

The study developed a survey tool for accessing information about endocrine therapy drugs in breast cancer patients, consisting of five sections based on two widely used questionnaires in many global studies, namely EORTC QLQ-INFO25 and SIMS [17, 18]. The questionnaire was designed to match the popularity of information content and courses, the necessity of information, and the cognitive ability of the Vietnamese population. The strengths of these questionnaires were the comprehensive assessment of both the actual patient information received and the patient satisfaction level with the provided information. Therefore, we not only accessed unidirectional information provided to patients but also examined the two-way exchange (requests and responses) of drug information between patients and different entities.

In terms of information sources, patients obtained information from various channels, and the most frequently used sources of information were from doctors (96.6%). This proportion was consistent with most previous researches about sources of information for cancer patients [1, 5, 12]. In the healthcare systems of many nations, including Vietnam, doctors still hold the primary role in communicating and providing information to patients. However, due to the excessive workload and the large number of patients, these activities are often integrated with examination and prescription activities with very limited time. In addition, the role of other healthcare workers, such as pharmacists and nurses in providing and consulting on drug information is still quite limited in health facilities in Vietnam. This is clearly demonstrated in our research, the percentage of patients receiving information from

pharmacists and nurses was relatively low (22.0% and 14.8%, respectively). Compared to the results of Lew Y.L. in Malaysia and Mekuria Abebe Basazn in Ethiopia, our result was lower, since the models of cancer healthcare systems were different in each country [1, 5]. In our study, the population subjects were outpatients, only returned to the hospital for follow-up visits and receiving medication once a month; therefore, the hospitalized days were short. Additionally, due to the massive number of patients, the time for pharmacists or nurses to interact with patients was limited, and currently, our hospitals have not implemented counseling services for cancer patients. Therefore, the patient's education provision is mostly dependent on the treating doctors and nurses who administered the chemotherapy infusion. Many studies have reported the important role of clinical pharmacists in providing health information to cancer patients [19-21]. In Vietnam, data are still limited. A study conducted by Nguyen Duc Trung et al on 79 cancer patients who were undergoing cycle 1 chemotherapy also showed results supporting the above finding. Counseling by clinical pharmacists has a significant impact on enhancing the level of knowledge of patients; and a significant majority of patients (98.7%) expressed their positive evaluation of the counseling activities as being beneficial [16]. Therefore, strengthening the consulting activities of pharmacists in hospitals is a solution to promote the benefits of multidisciplinary teams, optimize information provision for patients, and reduce the burden on doctors.

We also found that the proportion of patients obtaining information from fellow patients and relatives was quite high (47.4% and 21.8%, respectively). Individuals with close relationships or shared the same medical

conditions often spend time exchanging information with each other, so these sources of information could be very common and easy to access for cancer patients. Our study found that patients receiving information from mass media, scientific journals, and specialized books witnessed a relatively high percentage, but still lower compared to the research of Lew Y.L. and Li P.W [1, 12]. This could be evidence to suggest that our population was less proactive in seeking medication information, which could be explained by high age (mostly over 40 years old), low educational background, and low-income levels. Therefore, to meet the medication information needs of cancer patients, diversifying and improving the quality of information sources, with a particular emphasis on the role of healthcare workers (such as pharmacists and nurses), could be enhanced.

Concerning the topics related to the usage of AET, the study's findings revealed that information about diseases and the general usage of drugs is provided quite fully, however, specific information about drugs is more limited. The majority of patients obtained information about dosage and administration (88.8%), AET duration (80.6%), BC stage, and severity (78.6%). These results might reflect the fact that there was a correlation between the source of information and the content of information provided to patients because most of the information was usually provided by doctors; therefore ones related to treatment and basic information about medication patients received were quite comprehensive. In addition, the lack of information about adverse drug reactions and methods of their management has also been observed in other studies [22 - 24]. This could be explained by

time constraints due to an overload of work, as mentioned above, making it challenging for physicians to provide patients with comprehensive medication information. Providing information about medication use, safety, and adherence was essential with cancer patients, especially drugs that have a long treatment duration, like AET. However, side effects related to menopausal symptoms and patients' reproductive function were often not provided to the patients in many studies on endocrine drugs, the reason for this could come from a barrier in communication from both sides, or this type of information could be overlooked. Our population was mostly over 40 years old (53.7 ± 10.3); therefore, issues related to the reproductive function or sexual activity might be less discussed with patients, in contrast to Mika Miyashita's study on the younger population (below 45 years old) with breast cancer, which found a very high proportion of patients receiving information about the side effects of AET (80.4%) [11]. Therefore, enhancing the interventions of pharmacists in providing more exhaustive information about medication usage and safety may be a future strategy to address this problem.

In this study, we identified that about 50% of patients had drug informational inquiries, and doctors still played a primary role in addressing patient concerns (47.9%), consistent with previous studies [5, 25]. However, the number of patients seeking pharmacists or nurses in our study was very low (below 3%). This can be explained by our population being outpatients led to less access to pharmacists or nurses, while doctors are health professionals who directly contact and take care the patients. Interestingly, breast cancer patients in our study had a higher rate of seeking guidance from fellow patients with

the same medical conditions compared to the study by Mekuria Abebe Basazn (17,1% versus 2,1%) [5]. The finding of Iskandarsyah (2014) indicated that the majority of patients perceived doctors had a higher status than patients, so they are reluctant to request doctors for more information about treatment plans, which might lead them to find others who had similar problems to discuss their concerns [26].

The highest rate of patients receiving complete responses was when they were consulted by doctors (72.2%), followed by pharmacists and nurses at around 50%. Conversely, although the proportion of patients seeking advice from friends, relatives, and others with the same condition was higher, the proportion of patients receiving complete answers was lower (25.0% and 17.6%, respectively). This reflected the fact that healthcare professionals with specialized knowledge and experience in addressing issues related to medication or treatment, hold a crucial role in providing comprehensive and helpful answers to cancer patients.

This study reported a relatively high level of patients's satisfaction about all types of information received (around 85%), with the lowest level of satisfaction recorded in information related to adverse side effects (73.7%), this result was higher than previous research [13, 27]. A noticeable finding of this study was most patients evaluated general information about endocrine medication as useful. We found that only about 18% of patients requested further information because the medication counseling activities for cancer patients in Vietnam had not been emphasized, and the majority of patients had low educational backgrounds, so they might not fully understand the importance of medication information or pay too much attention to drug-

related problems. Hence, we need to promote interventions aimed at both patients' and healthcare providers' awareness of ADE, which could lower unnecessary treatment interventions and hospital admissions, consequently reducing unnecessary costs for patients. This also promotes the utilization of drug use, fostering treatment adherence, boosting patient confidence, and improving the quality of life for cancer patients undergoing treatment [11, 28].

This study has several limitations. First, no formal sample size calculation was performed; instead, all eligible patients during the study period were included, which may limit the statistical power. Nevertheless, the study enrolled a relatively large number of patients (N = 863) from two largest oncology hospitals in northern Vietnam, which could provide a reasonably accurate reflection of the actual medication information needs in this patient population. Second, the reliance on patients' recall and self-reported information could have introduced recall and reporting bias. Third, the

study was conducted in 2020 during the COVID-19 pandemic, when restrictions and shortened hospital visits might have influenced the quality of direct interviewing.

CONCLUSION

We found that doctors were overwhelmingly the prime source of information for cancer patients receiving AET; however, only low proportions of patients were provided with important information for adherence and safe use, such as missed or overdose management, potential ADE, and ADE prevention and management. Patients might not recognize these information gaps. The majority of patients were satisfied with all the information they received and found it helpful. Pharmacists need to strengthen their role in providing comprehensive, drug-specific information and counseling for cancer patients, especially regarding AET.

CONFLICT OF INTEREST

None.

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