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ONLINE SURVEY OF PROBLEMS INHIBITING THE ACTIVE INVOLVEMENT OF COMMUNITY PHARMACISTS IN PATIENTS WITH CANCER UNDERGOING OUTPATIENT CHEMOTHERAPY

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Online Survey of Problems Inhibiting the Active Involvement of Community Pharmacists in Patients with Cancer Undergoing Outpatient Chemotherapy

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Abstract

The objective of this study was to address two problems: a) how community pharmacists interact with cancer patients undergoing outpatient chemotherapy, b) what issues prevent them from providing satisfactory medication counseling and communication. In order to investigate these problems, we conducted a questionnaire and survey their answers through an internet. The online survey was conducted via the internet. 70% of the respondents were community pharmacists in their 30's-40's. They work at pharmacies which exclusively fill out prescriptions for neighboring clinics or hospitals. Community pharmacists who have experience counselling with cancer patients was 72.1%. 70% of community pharmacists responded that their dissatisfied with their efforts to provide medication counseling and communication with cancer patients. Even though cancer patients need to have medication counseling and advise from community pharmacists, but community pharmacists are dissatisfied with their ability to communicate with cancer patients. This is due to the lack of medication counselling at hospitals. More than half of community pharmacists indicated dissatisfactory medication counseling regarding the protocol of the patient cancer treatment, also pharmacists have no way of knowing if the patient have been told they have cancer. Based on these results, we asked community pharmacists the regularity of information sharing between the two institutions. 5% of them answered "yes, always" or "to begin soon". Therefore, there is a need to share information especially regarding cancer patients because it is necessary for community pharmacist to have accurate information from hospital in order to do medication counseling. In conclusion,

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we strongly believe there is a great importance in the close collaboration of community and hospital pharmacists.

Keywords: Community Pharmacists, Cancer Patients, Outpatient Chemotherapy, Online Survey

1. Introduction

Cancer has been the leading cause of death in Japan since 1981, and caused an estimated 368,103 deaths (male, 218,397; female, 149,706) in 2014 (http://ganjoho.jp/reg_stat/statistics/stat/summary.html). Chemotherapy for cancer has made a major transition from inpatient to outpatient treatment due to factors including patients' wishes, the development of oral chemotherapy drugs, an increase in drugs that can be administered over a short period, and advances in best supportive care (BSC).^{1,2} Other key factors include the addition of outpatient chemotherapy prices to the National Health Insurance price system with its revision and adoption of the Diagnosis Procedure Combination (DPC) payment system.³ Therefore, the spread of outpatient chemotherapy should continue to provide increasing opportunities for community pharmacists to provide information to cancer patients and satisfy the patient demand for consultations.

Cancer patients have worries and concerns about mental health problems, symptoms, side effects, sequelae, and complications, but supervising physicians and nurses do not have enough time to address these concerns due to the increase in workload produced by increased outpatient chemotherapy at hospitals.^{4,5} Therefore, cancer patients may be able to alleviate their worries and concerns to some extent if they come to recognize community pharmacists as people they can freely ask for advice.

When the Medical Care Act was revised in 2007, community pharmacies were defined as facilities that provide medical care. They are expected to provide information about the proper use of medications and offer counseling for the community. Maehori et al. found that 81.5% of cancer patients wanted their community pharmacist to know their disease and physical condition.⁶ Another survey of cancer patients undergoing outpatient chemotherapy showed that these patients have a strong need for accurate information about their disease and treatment.⁷ Studies have also shown that patients want to receive specific information⁸, and higher satisfaction with information is associated with improved quality of life (QOL).⁹ Terui et al. found that about 80% of community pharmacists felt that they had insufficient information for advising cancer patients, such as whether the patient was informed they had cancer, and what their diagnosis and course of treatment was.¹⁰ This indicates that the current information-sharing infrastructure as information provider is inadequate and that pharmacists are most likely not providing sufficient information to cancer patients. Although it appears that community pharmacists need to actively provide individualized information to cancer patients, no nationwide survey of community pharmacists about providing information and consultations to cancer patients has ever been conducted.

The objective of this study was to elucidate problems inhibiting the active involvement of community pharmacists in pharmacotherapy through an online survey of community pharmacists across Japan with experience dispensing chemotherapy drugs.

2. Methods

2.1 Period

The survey was conducted from January 7 to January 13, 2009 at the Department of Clinical Pharmacy, School of Pharmacy, Showa University.

2.2 Subjects

The online survey was conducted with community pharmacists who were registered as monitors with NEXTIT Research Institute, Inc. Registered community pharmacists as monitors with NEXTIT who also had experience dispensing chemotherapy drugs, and send to them questionnaire through an Internet. Three hundred and ninety seven community pharmacists were accessed the website during the screening period (from January 7 to January 13, 2009), 340 pharmacists had experience dispensing

chemotherapy drugs. Those who agreed to participate were sent a link to the questionnaire form and answered it online. Completing the questionnaire was considered to constitute consent.

2.3 Questionnaire

The survey questions covered the following: (1) experience offering consultations, (2) length of medication counseling sessions, (3) provision of information and counseling, (4) collaboration with hospital pharmacists, (5) present situation of information and counseling due to collaboration with hospital pharmacists, (6) changes in provision of information and counseling due to collaboration with hospital pharmacists, (7) follow-up with patients by phone, (8) pharmacists characteristics (gender, age group, years worked at a community pharmacy, type of pharmacy where the pharmacist works, location of the pharmacy, and frequency of medication counseling for cancer patients).

2.4 Statistical analysis

Questionnaire responses were analyzed using Dr. SPSS II for Windows. Percentages were compared using the binomial test and differences in response frequencies were compared using the chi-square test. A significance level of $P < 0.05$ was used.

2.5 Ethical considerations

This study was reviewed and approved by the research ethics committee of Showa University School of Pharmacy (Approval No. 94).

3. Results

Community pharmacists registered as monitors with NEXTIT were screened online for experience dispensing chemotherapy drugs. Of the 397 community pharmacists who accessed the website during the screening period, 340 had experience dispensing chemotherapy drugs. These 340 pharmacists were included in the study. The response rate was 64.4%.

Table 1 shows characteristics of the community pharmacists who responded. There were 117 men (53.4%) and 102 women (46.6%), with no significant difference between these groups. The distribution of age groups was as follows: 13.7% of the pharmacists were in their 20s, 44.7% were in their 30s, 30.6% were in their 40s, 9.1% were in their 50s, 1.4% were in their 60s, and 0.5% were in their 70s. Nine pharmacists (4.1%) had < 3 years of work experience, 27 (12.3%) had 3-5 years, 77 (35.1%) had 5-10 years, and 106 (48.4%) had ≥ 10 years. One hundred pharmacists (45.7%) worked at a pharmacy that exclusively fills prescriptions for a neighboring clinic,^{5,7} (26.0%) worked at a pharmacy that exclusively fills prescriptions for a neighboring hospital, 3 (1.4%) worked at a pharmacy that exclusively fills prescriptions for a neighboring specialized hospital,^{5,7} (26.0%) worked at a pharmacy that fills prescriptions from multiple institutions, and 2 (0.9%) worked at another type of pharmacy. Eighteen (8.2%) provided medication counseling almost every day, 23 (10.5%) provided it 3 to 4 times a week, 110 (50.2%) provided it 3 to 4 times a month, and 68 (31.1%) provided it only a few times a year.

To determine how much time the pharmacists spent on medication counseling, they were asked about the duration of the first session and subsequent sessions. Figure 1 shows the distribution of respondents by time spent on medication counseling (upper graph). Most community pharmacists spent 5 min on the first session. However, the time spent on subsequent sessions decreased, with most community pharmacists spending 3 min and fewer spending 5 or 10 min (lower graph). The average duration of the first session was 9.1 min, and the longest was 60 min. In contrast, the average duration of subsequent sessions was 5.6 min, or 3.5 min shorter than the first session.

Next, the community pharmacists were asked about whether they offered consultations to patients (Fig. 2A). A majority of the pharmacists, 72.1%, responded "yes" and 27.9% responded "no". Results from questions about provision of information and counseling to patients are shown in Figure 2B. There was a significant difference in the percentage of pharmacists who did and did not provide information and counseling to patients. Only 0.5% were highly satisfied with their efforts, whereas 63.0% and 5.9% were dissatisfied or highly dissatisfied, respectively. These results demonstrate that 70% of community pharmacists are dissatisfied with their efforts to provide medication counseling and communicate with patients.

Table 1. Background of Pharmacists. Background of responders (gender, age group, years worked at community pharmacy, frequency of medication counseling for cancer patients, type of pharmacy where the pharmacy works) (n = 219).

		Number of Pharmacists	Ratio (%)
Gender	Male	117	53.4
	Female	102	46.6
Age group	20s	30	13.7
	30s	98	44.7
	40s	67	30.6
	50s	20	9.1
	60s and more	4	1.9
		< 3 years	9
Years worked at community pharmacy	3 years – < 5 years	27	12.3
	5 years - < 10 years	77	35.1
	≥10 years	106	48.4
Type of pharmacy	A pharmacy for neighboring clinic	100	45.7
	A Pharmacy for neighboring hospital (except cancer centers)	57	26.0
	A pharmacy for neighboring specialized hospital (cancer centers)	3	1.4
	A pharmacy from multiple institutions	57	26.0
	others	2	0.9
Frequency of medication counseling for cancer patients	Almost everyday	18	8.2
	3-4 days per a week	23	10.5
	3-4 days per a month	110	50.2
	Some days per an year	68	31.1

The community pharmacists who answered that they provide medication counseling and communicate with patients (68 pharmacists) were asked for their reasons (Fig. 3). In the group that was satisfied with their efforts, the most common reason was “my pharmacy serves as patients’ family pharmacy and has their medication history” at 82.4%, followed by “I can spend a long time talking to patients” at 26.5%, “I am always learning about cancer” at 20.6%, and “my pharmacy collaborates with hospitals” at 17.6% (Fig. 3A). The community pharmacists who were dissatisfied with their efforts were also asked for their reasons. The most common reason was “I do not know what the hospital has told the patient,” and more than half of the pharmacists answered that “it is difficult to talk about cancer” (Fig. 3B).

We also asked respondents about their experiences with insufficient patient information (Fig. 4). As shown in Fig. 4, 90.0% answered that they had handled prescriptions with insufficient information, and 10.0% answered that they had not. We also asked respondents about the types of information that were insufficient. The main responses were the protocol for cancer (77.7%), whether the patient had been told they had cancer (69.5%), and the diagnosis (67.5%). Other responses were laboratory data (49.2%), names of injections and their dosage and administration (44.7%), guidance given during hospitalization (43.1%), hospital policies regarding recommendations to visit a doctor based on health checkup results (41.6%), adverse reactions during hospitalization (37.6%), management of adverse reactions (35.5%), timing and duration of potential adverse reactions (28.9%), concomitant drugs (24.4%), and currently used supplements and over-the-counter drugs (4.6%) (Fig. 4B). These results demonstrate that 90% of community

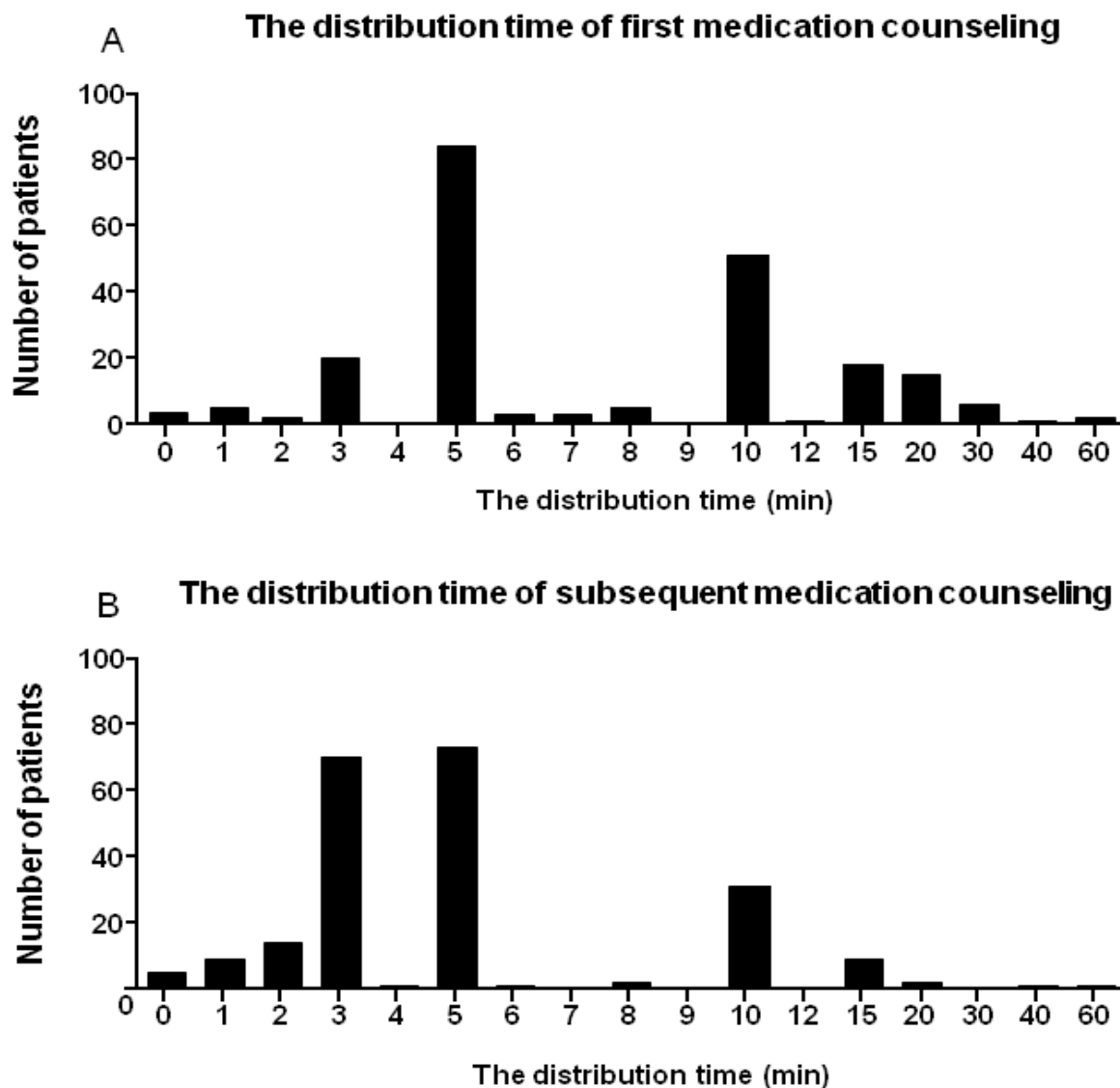


Figure 1. The distribution time of medication counseling. A. The distribution time of first medication counseling. B. The distribution time of subsequent medication counseling.

pharmacists feel that they do not have enough information when providing medication counseling to cancer patients.

Subsequently, when asked whether their community pharmacy shared information with hospitals, only 1.4% of pharmacists answered “yes, always” and nine pharmacists (4.1%) answered that they “to begin soon” (Fig. 5A). These results indicate that few hospitals and clinics share information about cancer patients with community pharmacies and this practice is very rare.

Results about interaction with cancer patients are shown in Figure 5B. Among the community pharmacists, 85.8% answered that they “would like to actively provide information and consultations in the future” and this percentage was significantly higher than the percentage that answered “no.” These results demonstrate that most community pharmacists would like to more actively engage with patients undergoing outpatient chemotherapy.

4. Discussion

We administered a questionnaire to community pharmacists to investigate how they interact with patients undergoing outpatient chemotherapy and what issues prevent them from providing more satisfactory medication counseling and communication via the internet. Our present findings are: (1) the initial medication counseling session is longer than subsequent sessions, (2) >70% of community pharmacists have provided consultations to cancer patients, (3) >70% of community pharmacists are dissatisfied with their efforts to provide information to cancer patients and communicate with them, (4) community pharmacists who are satisfied with their efforts feel that way because they have patients’ medication his-

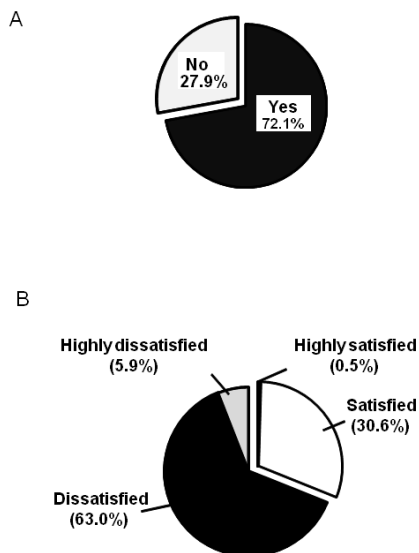


Figure 2. The community pharmacists were asked about whether they offered consultations to patients.

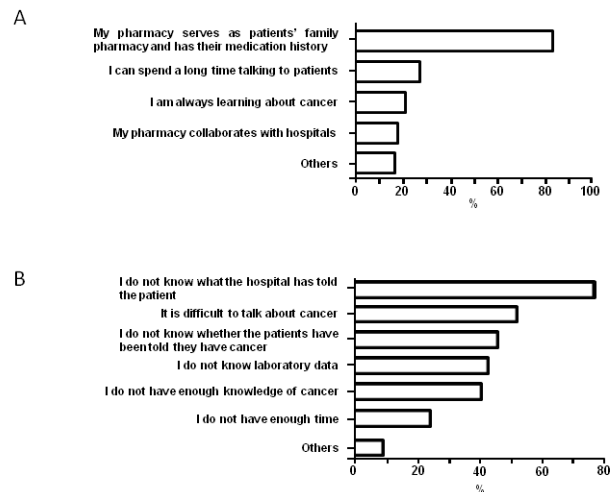


Figure 3. The community pharmacists provide medication counseling and their reasons.

tory, (5) community pharmacists who are dissatisfied with their efforts feel that way because they do not know what the hospital has told the patient, (6) the types of patient information that pharmacists find insufficient when providing information to patients include the treatment plan, whether the patient has been told they have cancer, the diagnosis, and test results, (7) over 90% of pharmacies do not collaborate with hospitals, and (8) over 80% of community pharmacists want to actively engage with cancer patients by providing information and consultations.

The results of our survey showed that about 70% of community pharmacists have experience providing consultation of some kind to cancer patients, indicating that patients see community pharmacists as easily accessible people to ask for advice. In this regard, Maehori et al. have found that 81.5% of patients wanted their community pharmacist to know about their disease and physical condition, which shows that patients themselves want community pharmacists to share information.⁶ For most patients, the reasons were “to advise me about side effects”, “to advise me about using multiple drugs together” and to “advise me about my diagnosis or other aspects of my physical condition my doctor did not tell me about.”⁶ Maehori et al. also indicate that patients undergoing outpatient chemotherapy expect community pharmacists to advise them. However, our survey showed that about 70% of community pharmacists were dissatisfied with their efforts to provide medication counseling and communicate with cancer patients.

Some community pharmacists also answered that they did not provide medication counseling to first-time patients or to patients who visited the pharmacy multiple times. Their reasons included that they knew little about cancer and that they did not have enough time, indicating that community pharmacists need to be educated as medical care providers who interact with cancer patients.

Studies have shown that most cancer patients undergoing outpatient chemotherapy feel that their outpatient doctor or nurse does not have enough time to talk to them, that nobody will spend the time to talk to them, or that they do not want to make a trouble to their family, and these patients are anxious about what to do if they experience an adverse reaction.^{2,11,12} However, our survey showed that community pharmacists are unable to adequately respond to these cancer patients' needs for advice. This indicates that community

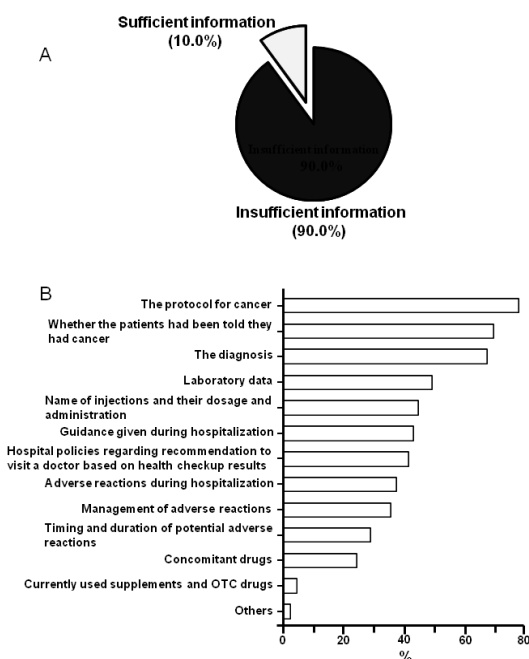


Figure 4. Community pharmacists experiences with insufficient patient information.

pharmacists are not always fully alleviating patients' concerns or meeting their needs. Kubota et al. found that involvement of pharmacists in the care of patients undergoing chemotherapy was effective for alleviating anxiety and explaining adverse reactions.¹³ Amioka et al. also found that active involvement of community pharmacists with cancer patients has a positive effect on patients by improving compliance and increasing the frequency of questions and consultations.¹⁴ Therefore, community pharmacists need to be more actively engaged in advising cancer patients in the future.

In our survey, we also asked pharmacists about their experiences with insufficient information when communicating with patients. We found that 90% had handled a prescription with insufficient information, consistent with the results of previous studies.^{10,15} In general, community pharmacists who work for a pharmacy that exclusively fills prescriptions for a neighboring hospital or clinic can more easily communicate with that institution's staff and thus more easily obtain patient information. However, no

previous study has compared the collection of patient information between exclusive pharmacies and pharmacies that fill prescriptions from multiple institutions. In our study, stratified analysis of collection of patient information between these two pharmacy types revealed no significant difference (data not shown), which is an interesting finding. At present, pharmacists mainly obtain patient information by referencing prescriptions or asking patients or family members during counseling, and it is difficult for them to obtain accurate and detailed information. Even though the respondents to our survey were community pharmacists with experience dispensing chemotherapy drugs, they still reported problems with not knowing what a hospital has told the patient, difficulty talking about cancer, not knowing whether the patient has been told they have cancer, and not being able to reference test results. This may be because community pharmacists have insufficient information about chemotherapy itself because non-oral drugs for outpatient chemotherapy are not prescribed outside of hospitals. Especially, for high-risk drugs such as chemotherapy drugs, obtaining patient information is important in monitoring for adverse reactions and compliance. Miki et al. found that nearly half of community pharmacists do not interact with cancer patients at all, and conclude that community pharmacists will play an increasingly important role in ensuring safe use of prescribed drugs by patients by checking aspects of prescriptions such as dosage, administration, and drug interactions.¹⁶ As mentioned above, pharmacists cannot adequately support cancer patients due to insufficient patient information, pharmacies and hospitals need to build infrastructure for seamlessly sharing patient's information.

We found that more than half of the pharmacists found it difficult to talk about cancer. In the free response section, some pharmacists mentioned that they did not know how much detail they could provide and that patients do not want to talk. Fujiwara et al. reported that patient "diaries" are a useful way for patients to communicate their situation to medical staff, and thus communicating through medication records could potentially improve patient support.¹⁷

In summary, this study was an online survey of community pharmacists on their interactions with patients. We found that 70% of community pharmacists are dissatisfied with their efforts to provide medication counseling and communicate with patients, because they did not have enough information about patients with cancer. However, recent research on regional healthcare collaboration has noted efforts to encourage active sharing of patient information through projects and infrastructure development efforts that include introducing information technology for regional training sessions and providing interprofessional education (IPE) for community pharmacies and medical facilities.^{18,19} However, as efforts aimed at improving the QOL of patients undergoing cancer treatment have many difficult aspects,²⁰ building a Japanese-style collaborative drug therapy management (CDTM) system by proactively adopting systems

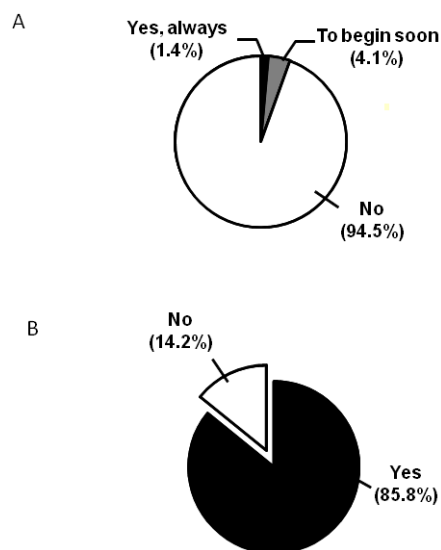


Figure 5. Whether community pharmacy shared information with hospitals.

based on American protocols²¹ should help to improve the QOL of cancer patients undergoing outpatient chemotherapy. Limitation of this study is not focusing on the pharmacy for neighboring cancer centers, remains to be investigated.

5. Acknowledgments

This study was conducted in Department of Clinical Pharmacy, School of Pharmacy, Showa University, former affiliation of the first author.

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