

Shared Decision-Making Support Process for Healthcare Professionals for Pregnant Cancer Patients and Their Families

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ABSTRACT

Objective: The mean age of cancer diagnosis has decreased, while the mean age of first marriage and child delivery has increased in Japan in recent years. Accordingly, an increasing number of pregnant women are being diagnosed with cancer. Pregnant cancer patients must consider simultaneously receiving cancer treatment and continuing their pregnancy and make related decisions. Healthcare professionals (HCPs) who support patients and their families experience conflict over which care should be prioritized between that for the patient and that of the fetus. Supporting pregnant cancer patients and their families in such complicated situations is challenging. This study aimed to explore the process of support for continuing cancer treatment for, and pregnancy in, cancer patients, based on shared decision-making (SDM) between the patient, her family, and HCPs. **Methods:** This was a qualitative, descriptive study carried out with six nurses, five clinicians, and three obstetricians with experience of providing decision-making support to a pregnant cancer patient and her

family. Individual interviews and a focus group interview were conducted. **Results:** We identified ten categories, of which the following five are integral to the process of providing support for pregnant cancer patients: “Preparing for SDM with the patient and her family;” “HCPs working in a team while clarifying their individual roles and responsibilities;” “confirming the intentions of the patient and her family in setting the orientation;” “improving the system for HCPs to provide support to the patient during cancer treatment,” and “providing the patient with support that helps her make informed decisions.” **Conclusions:** Decision-making support is provided to both the patient and her family, and HCPs work in teams to provide support. Moreover, HCPs continue to provide support to the patient and her family after a decision has been made.

Key words: Cancer and pregnancy, decision support, shared decision-making

Introduction

Recently in Japan, the mean age of first marriage and first baby delivery has increased. Thus, an increasing number of pregnant women are diagnosed with cancer. Pregnant cancer patients and their families experience mixed feelings

because first, they must prioritize either the life of the patient or that of the baby, that is, they face choices about imaging modalities, the fetotoxicity of chemotherapy, worse maternal outcomes, and the risk of a preterm delivery cause

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as a side effect of the treatment.^[1,2] Second, they must make a timely health-care decision.

Frequently, the types of cancer found in pregnant women in Europe are malignant melanoma, cervical cancer, breast cancer, hematological malignancy, and so on. Malignant melanoma is considered an aggressive malignancy during pregnancy, and the rate of malignant melanoma in those who are pregnant exceeded 30% of all malignancies in pregnancy. Breast cancer diagnosed during pregnancy amounts to <1% of all breast cancer.^[3] Few studies of pregnant cancer patients, most of which are case reports or case studies, have been conducted either within or outside Japan.^[4-8] To the best of our knowledge, no research has focused on decision-making by cancer patients and their families or on the process of decision-making support. To assist pregnant cancer patients and their families in making treatment decisions while facing these dilemmas, it is necessary to provide them with support by considering the views of both the patient and her family, as well as the obstetrician, clinician, nurse, midwife, and other professionals. Guidelines for treating pregnant cancer patients are available in Japan.^[9] Nonetheless, it is assumed that health-care professionals (HCPs) face difficulties in providing patients with information and determining treatment plans because of a lack of treatment evidence. Although guidelines have been devised, there is little evidence providing a foundation for the decision-making of patients and their families. Therefore, it is necessary to share decision-making among patients, their families, and HCPs. Furthermore, with regard to the guidelines mentioned above, they are only related to breast cancer, and there is no evidence regarding the treatment of other types of cancer in pregnancy.

As cancer treatment is increasingly diversified, the complexity of decision-making processes in clinical settings is increasing. Thus, the concept of shared decision-making (SDM) is gaining interest in the medical community. In SDM, the patient and HCPs work together to make decisions. SDM involves at least two people, namely, the patient and their doctor, and requires information sharing.^[10,11] SDM is posited as one of the methodologies for decision-making support.^[12] The U.S. Preventive Services Task Force defined SDM as “the specific decision-making process of the identification by patients and doctors.”^[13] The process is as follows: (1) to understand the serious risk that should be avoided because of the disease and the situation, (2) to understand preventive services and benefits, alternative solutions, and uncertainty, (3) to consider their own values about what is considered benefits and harms that might be related to services, (4) and to continue

decision-making to the level that they expect and feel is comfortable. The concept of SDM has begun to be used by prenatal diagnoses, genetic tests that include difficulty in decision-making, treatment choices among many options, and the screening of cancer. In many studies, reductions of the uneasiness and the rise of treatment satisfaction of patients are detected by assisting patients’ use of something like a decision-aiding guide while continuously interacting.^[14-17]

Therefore, this study aimed to illuminate the process of support during continuing cancer treatment for pregnant cancer patients, based on SDM between the patient, her family, and HCPs.

Methods

Study design

A qualitative, descriptive study design was used.

Study participants

This study was conducted in Japan, using individual interviews and a focus group interview (FGI). Given that decision-making for a pregnant cancer patient is a complex, challenging process, oncology clinical nurse specialists (CNSs), and certified nurses (CNs) specializing in cancer chemotherapy and breast cancer nursing were recruited for the study. These nurses were selected from CNSs and CNs as they have a high level of practical nursing skills and counseling/coordination skills. We contacted potential study participants who worked at a cancer care collaboration hub hospital with an obstetrics department. Those who had experience of providing support to a pregnant cancer patient were invited to participate in this study. At the same time, we also requested clinicians and obstetricians who had treated pregnant cancer patients and participating nurses. A formal invitation was given to those who agreed to participate, and consent was obtained. Individual interviews were conducted with participants from six facilities across Japan. All participants of the FGI were from different facilities.

Individual interviews were conducted with nurses, clinicians, and obstetricians who had provided decision-making support to a pregnant cancer patient and her family. Among pregnant cancer patients, terminal patients were excluded. In addition, because it is thought that the SDM process is more complicated when different clinicians and obstetricians are involved, pregnant cervical cancer, and ovarian cancer patients were excluded from the study. The FGI was conducted with nurses who were experienced in providing cancer counseling and other services to a pregnant cancer patient and her family.

Term definitions

SDM is a process, in which a patient and their family jointly make decisions with their nurse, clinician, and obstetrician through joint communication. SDM comprises five steps, which are based on the concept proposed by Kriston *et al.*^[18] and National Health Service.^[19] In Step 1, the necessity for decision-making is recognized, and in Step 2, those involved in determining the treatment plan realize their intent for joint decision-making. In Step 3, options are proposed, and in Step 4, the patient and their family's understanding are examined. In Step 5, an agreement is made on the details of the decision made.

Data collection

Individual interviews

Semi-structured interviews were conducted from July 2015 to May 2017. Participants were asked about the age, disease, treatment, and family structure of the patient. They were also asked about interaction with the patient, the physical and mental situation of the patient and her family, and interaction with other HCPs, in accordance with the interview guide created by the researchers [Table 1]. Each interview was held in a private room of the institution to which the researchers were affiliated and lasted approximately 45 min. A second interview was held if the researchers needed to ask additional questions. Interviews were audiorecorded upon permission from the participants.

Focus group interview

An FGI was conducted based on the results of individual interviews, with the aim of obtaining further practical or meaningful perspectives as well as information on the participants' real-world experience of providing support to pregnant cancer patients and their families.

Statistical analysis

The narratives provided by the participants were transcribed. In line with the process of SDM, segments related to decision-making support were extracted. The segments were then coded to indicate relevant meaning. Data that were not in line with the process of SDM were also analyzed given that these data indicated the sharing of issues, information, and feelings between the patient, her

family, and HCPs. Codes that rendered similar meanings were aggregated to create subcategories and categories. Categories generated through the above process were linked with each other and made into a series of processes, which was defined as the "process of support from HCPs."

Ethical approval

This study was approved by the ethical committee of Kobe City College of Nursing (Approval No. 2014-2-20-2 and 2016-2-30). The study commenced after approval was obtained from the committees, and all procedures were in accordance with the Helsinki Declaration of 1975, as revised in 2000. Study participants received an explanation of the following aspects: the objectives of the study, protection of confidentiality, the voluntary nature of participation in the study, participants' right to withdraw their consent at any time, and protection of anonymity when study results are published. Consent was obtained from participants prior to their participation.

Results

An overview of study participants

Individual interviews were conducted for eight cases. The FGI lasted 133 min [Table 2].

Data analysis results

For the process of SDM-based support for continuing patient cancer treatment and pregnancy, involving the pregnant cancer patient herself, her family, and HCPs (hereinafter referred to as "the process of support from HCPs"), ten categories, and 22 subcategories were extracted [Table 3]. What follows explains five of the ten categories that are integral to a support process for pregnant cancer patients.

Committing to providing team-based support

While HCPs faced dilemmas between cancer treatment and preservation of the patient during pregnancy, they firmly decided to support the patients regardless of their choice.

Because of the Her2 positive diagnosis, we chose to start chemotherapy. We could not take medical images for evaluation of metastasis because the patient was pregnant. We could not exactly understand her or her fetus's condition. Cytodiagnosis was conducted, and it turned out that the breast cancer had not metastasized, so we felt relieved. Regardless, we were very uneasy. (Nurse A)

Preparing for shared decision-making with the patient and her family

The patients in this study have been diagnosed with cancer during their pregnancy. They and their families

Table 1: Individual interview guide

1. The patient's age, the number of pregnancies, the number of times giving birth, disease, treatment, family constitution, and the pregnancy progress
2. Relationship to the patient
3. State of the patient and her family
4. Relationship with other medical people
5. Task on supporting the patient
6. The role that the individual takes in supporting the patient

Table 2: Overview of cases and study participants

Case	Patient			Study participant		
	Disease	Age Household, family member	Summary of treatment and progress following the diagnosis of cancer during pregnancy	Nurse Age group, qualification, affiliation	Clinician Age group, treating department	Obstetrician Age group
Individual interviews						
A	Breast cancer (HER2-positive)	20s, husband	Found to be pregnant during a breast cancer screening. Initial consultation during gestational month 3. Cyclophosphamide + doxorubicin (AC) commenced at gestational month 5. Following the completion of four courses, breast conserving surgery and sentinel lymph node biopsy were performed at gestational month 9. Vaginal delivery at gestational month 10 with the use of a labor-inducing drug	50s, certified breast cancer nurse, outpatient unit, breast surgery department	50s, breast surgery department	—
B	Breast cancer (TNBC)	30s, husband	Presented with axillary abnormalities, which developed at around gestational month 4. Diagnosed with cancer at gestational month 7. Breast cancer progressed rapidly; chemotherapy and breast conserving surgery were performed following delivery at gestational month 8	40s, oncology clinical nurse specialist, cancer counseling/support center	—	—
C	Breast cancer (TNBC)	30s, husband, child	Presented with a breast tumor during pregnancy but was diagnosed with cancer at gestational month 9. The tumor size was 12 cm. As gestational month 9 (gestational week 34) had already passed, the patient delivered the baby with the use of a labor-inducing drug. Chemotherapy was commenced thereafter	50s, certified breast cancer nurse, outpatient unit, breast surgery department	40s, breast surgery department	—
D	Malignant lymphoma (DLBCL)	30s, husband	Coughs were present since early pregnancy. Respiratory distress was present at gestational month 7. Following the diagnosis of mediastinal tumor, the patient was diagnosed with malignant lymphoma on the basis of the results of histological examination. Initial consultation during gestational month 8. As the mediastinal tumor grew, respiratory distress worsened. The baby was delivered by cesarean section with the use of steroids at gestational month 8. Following delivery, chemotherapy was commenced	40s, oncology clinical nurse specialist, oncology chemotherapy certified nurse, cancer counseling/support center	40s, hematology department	—
E	Breast cancer (recurrence, HER2-positive)	20s, husband	1 year prior, diagnosed with breast cancer during pregnancy. The fetus was aborted. Breast conserving treatment, chemotherapy, and radiotherapy were performed. During the second pregnancy, recurrent breast cancer was found at gestational month 6. Breast resection performed at gestational month 7; vaginal delivery at gestational month 8	—	50s, breast surgery department	30s
F	Acute myelogenous leukemia	30s, husband, two children	Abnormal of the white blood cell was found during a maternity check-up at gestational month 4. Diagnosed with cancer at gestational month 5. The baby was aborted, and treatment was performed	—	—	40s
G	Breast cancer, (hormone sensitivity)	Late 30s, husband, (married during treatment)	The patient may have been pregnant when further examination was recommended on the basis of the results of screening. Diagnosed with cancer at gestational month 2. Pregnancy continued. The patient rejected chemotherapy during pregnancy. Only partial breast resection was performed under local anesthesia. Spontaneous delivery at gestational month 10	40s, certified breast cancer nurse, breast surgery department; outpatient unit, clinical oncology department	40s, breast surgery department	40s
H	Breast cancer, (DCIS)	Early 30s, partner	Approximately 1 week following breast resection for breast cancer, the patient was found to be pregnant. At that time, the gestational age was less than 2 months. Pregnancy continued, during which the patient rejected hormone therapy and surgical therapy. Spontaneous delivery	40s, certified breast cancer nurse, breast surgery department; outpatient unit, clinical oncology department	—	—

Contd...

Table 2: Contd...

Case	Patient			Study participant		
	Disease	Age Household, family member	Summary of treatment and progress following the diagnosis of cancer during pregnancy	Nurse Age group, qualification, affiliation	Clinician Age group, treating department	Obstetrician Age group
Focus group interview						
I	—	—	—	40s, oncology clinical nurse specialist, certified breast cancer nurse. Breast surgery department	—	—
J	—	—	—	40s, oncology clinical nurse specialist, clinical tumor department/ palliative care team	—	—
K	—	—	—	40s, oncology clinical nurse specialist, oncology chemotherapy certified nurse, cancer counseling/ support center	—	—
L	—	—	—	40s, oncology clinical nurse specialist, cancer counseling/support center	—	—
M	—	—	—	40s, oncology clinical nurse specialist, cancer counseling/support center	—	—

TNBC: Triple negative breast cancer, DLBCL: Diffuse large B-cell lymphoma, DCIS: Ductal carcinoma *in situ*

had to make decisions that would affect the life of the fetus, while the patient’s life was also at risk. This category refers to the situation where HCPs need to prepare for decision-making together with the patient and her family.

I told the patient and her family that the patient’s disease was related to two lives—the life of the patient and that of her baby. At that time, the patient was visiting the department of obstetrics of our hospital, so I told them that we would discuss with her obstetrician and a pediatrician in detail, and decide the care plan. I do not think I talked about anything further. (Breast surgeon E)

Healthcare professionals working in a team while clarifying their individual roles and responsibilities

This category indicates that HCPs such as nurses, clinicians, and obstetricians clearly define their roles and responsibilities and consult and collaborate with each other in interacting with the patient and her family.

I always had the patient’s doctor join us when we discussed breast cancer treatment. As a midwife is always involved in care for a patient at the obstetrics department, I obtained permission from the patient to also allow a midwife to always join us when we discuss treatment. That way, I shared information directly with the midwife. (Nurse I)

Confirming the intentions of the patient and her family in setting the orientation

This category indicates that the intentions of the patient and her family are identified, and the orientation

of support is determined by the following means: sharing thoughts and the situation of the patient with all involved and improving the environment so that the patient and her family understand each other’s thoughts and intentions.

Her partner also wished her to give birth to their baby, wanting her to continue her pregnancy. The patient’s partner said that he would give up on the baby if continuing pregnancy would put the patient’s life at risk. He, however, wished both lives could be saved, if possible. I strongly felt that he was facing a dilemma. I understood that he was having a hard time making a decision due to the uncertainty. The parents of her partner were worried about the possibility of a congenital anomaly because of continuing pregnancy. They were quite pessimistic. They said, “They may have a deformed baby.” They also said, “The mother may pass away soon. We wonder if they can really build a happy family.” (Nurse H)

Improving the system for healthcare professionals to provide support to the pregnant patient during cancer treatment

This category refers to the situation where a team of HCPs provides the patient with support that helps her fulfill the role of a mother even while preparing for or receiving treatment. Such support assumes that the patient will continue to receive treatment while raising her child following childbirth.

Nurses in the obstetrics department focus on helping mothers feed their baby with colostrum. The patient also wished to know about the transfer of anticancer drugs into breast milk

Table 3: A support process for pregnant cancer patients based on shared decision making

Category*	Subcategory
Assessing the current situation of the patient and her family who are shocked at the diagnosis of cancer during pregnancy	Understanding that the patient and her family, having been told that the patient has developed cancer during pregnancy, are shocked at the news and anxious about how the situation will develop Assessing whether or not the patient and her family are aware of and can fully grasp their current situation after having been informed of the patient's cancer during pregnancy
Committing to providing team-based support	Realizing that the medical team must support the pregnant cancer patient in their care Acknowledging that they must remain firm in their commitment to serve as supporters while grappling with the potentially conflicting tasks of cancer treatment and continuing the pregnancy
Preparing for shared decision-making with the patient and her family*	Preparing for the necessary decision-making, which will affect the lives of the mother and fetus, together with the patient and her family Interacting with the patient and her family in such a way that all parties can jointly make decisions in various areas, including not only treatment, but also life after childbirth
Integrating multifaceted information regarding the patient and her family, and examining treatment options	Integrating multifaceted information, including cancer stage, weeks of pregnancy, and the patient's desire to bear children, and using it to examine viable treatment options
Proposing options for cancer treatment and continuing the pregnancy that have been discussed among healthcare professionals	Presenting the options of cancer treatment and pregnancy continuation, and what each entail Presenting information on recommended cancer treatments, the effects of cancer treatment on the fetus, and fertility issues
Healthcare professionals working in a team while clarifying their individual roles and responsibilities*	A clinician and obstetrician complementing each other while fulfilling their roles A nurse understanding the collaboration between HCPs, and playing the role of a mediator between the patient, her family, and HCPs The reproductive health department and the obstetrics and gynecology department having responsibility for reproductive health
Confirming the intentions of the patient and her family in setting the orientation*	Improving the environment so that the patient and her family can work together in determining plans Confirming the patient's and her family's understanding of, and thoughts about, cancer treatment and pregnancy Prioritizing the patient's intentions after confirming the intentions of both the patient and her family Checking whether the situation allows for accepting and supporting the patient's intentions
Arranging treatment and the patient's lifestyle to continue cancer treatment and pregnancy in parallel	Specifically deciding how the agreed-upon option-either cancer treatment or delivery-will be carried out Arranging the patient's environment to help her adjust to the side effects, lifestyle changes, etc., associated with cancer treatment so that she will be able to pursue cancer treatment and pregnancy continuation in parallel
Improving the system for healthcare professionals to provide support to the patient during cancer treatment*	A multidisciplinary team preparing for providing the patient and her family with support that helps the patient undergo cancer treatment and that helps her and her family cope with anxiety regarding the treatment Building a team that provides support to the patient who will undergo cancer treatment while playing the role of an expectant mother
Providing the patient with support that helps her make informed decisions*	A team of HCPs providing support to the patient who is wondering whether she has made an appropriate decision, to help her convince herself that she did so Responding to changes in the patient's feelings after she has made a decision

*The categories presented in bold type correspond to the five categories and their subcategories that are integral to a support process for pregnant cancer patients as discussed in this article. HCPs: Healthcare professionals

as well as drug excretion. She said that she wanted to know the mechanism of drug excretion and other related information. She was concerned about the transfer of anticancer drugs into breast milk. She was also trying to decide what to do with colostrum while she considered it a means of showing affection to her baby. In that sense, I think I mediated between what is needed for treatment and what obstetric nurses consider important. (Nurse D)

Providing the patient with support that helps her make informed decisions

A pregnant cancer patient continues to face dilemmas, and doubts after making a decision about whether it was appropriate or not. This category refers to the provision of support for the patient from a team of HCPs, with the aim of helping her convince herself that her decision was appropriate.

I assume that the patient is always anxious about the impact of her cancer on her child, such as a developmental disorder. Therefore, I think it would be ideal if there would be any place where oncology, pediatrics, and nursing are more integrated to provide care. We introduced a pediatric nurse to the patient. So, I now feel that such an arrangement would help other patients. I also wonder how the patient is coping with her dilemma between the knowledge and her emotion that stops her from accepting the knowledge. (Nurse K)

Even if the policy of cancer treatment was decided to some extent, with regard to the patient, the future is uneasy. No treatment was provided for breast cancer as of now, though it recurred, the patient was not provided some treatment, she was afraid whether the cancer progressed. I explained to her that the cancer probably didn't affect her fetus. (Obstetrician E)

The relationship between the categories of the shared decision-making-based support process

The process of support from the HCPs is shown in Figure 1. The two categories of Step 1 were interrelated. In other words, the categories referred to situations where HCPs recognized the necessity of team-based support in the assessment of the patient and her family’s current situation, and where HCPs commit to team-based support in performing assessments. Decisions for a pregnant cancer patient cannot be made solely by the patient and her family or HCPs. Hence, one category was identified for Step 2. In Step 3, HCPs “propose options for cancer treatment and continuing the pregnancy” by “integrating multifaceted information of the patient and her family and examining treatment options.” The two categories of Step 4 were interrelated. In other words, HCPs were clarifying their

individual roles and responsibilities while confirming the intentions of the patient and her family as well as those of HCPs in setting the orientation. The two categories of Step 5 referred to practices that were implemented in parallel.

The category “providing the patient with support that helps her make informed decisions” did not belong to any of the steps. A pregnant cancer patient may worry about, or regret, her decision later, even if the decision was made jointly by all people involved. The SDM support process allows HCPs to continuously provide support in such a situation. In this process, HCPs and the patient jointly reflect on the process of SDM through which they came up with the best possible option so that the patient can view her decision positively. Thus, this category referred to “an evaluation step, in which the patient positively reflects on her decision.”

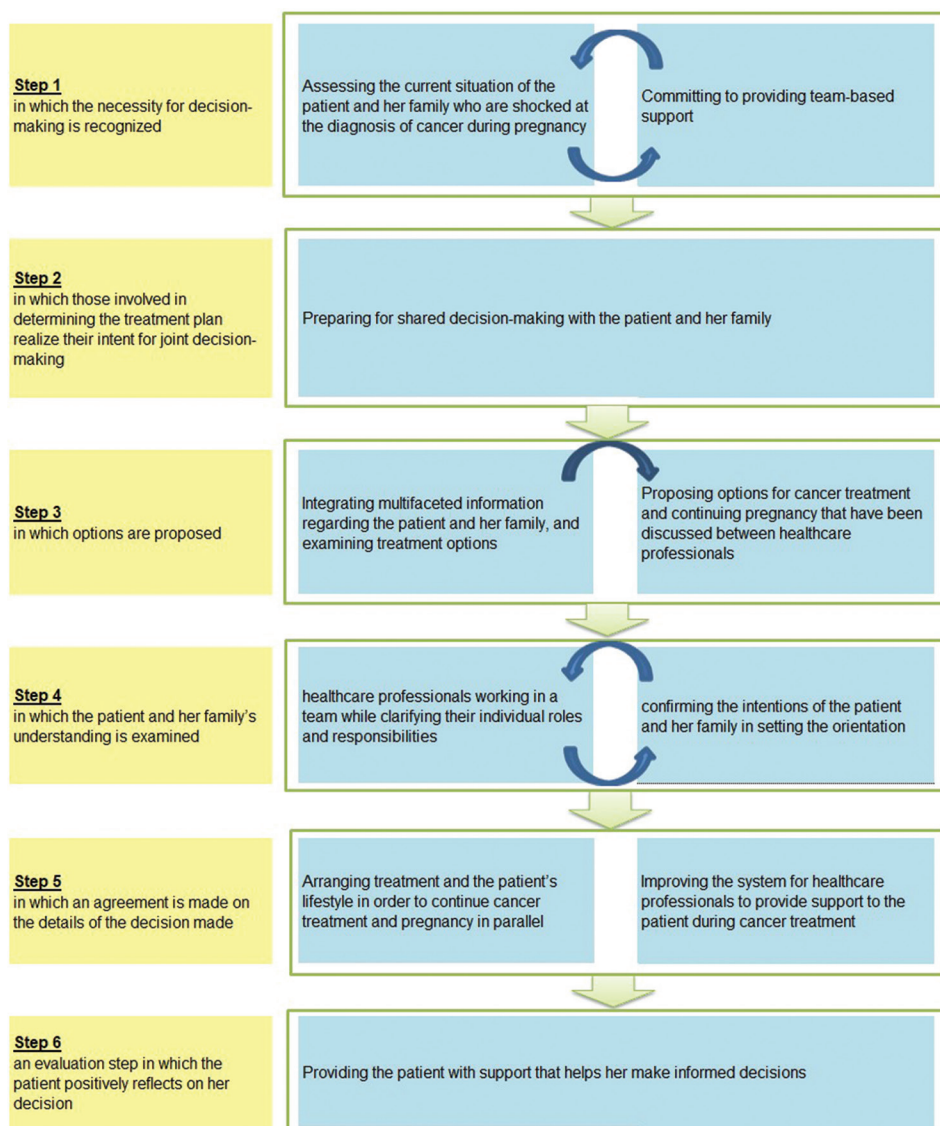


Figure 1: A support process for pregnant cancer patients based on shared decision making

Discussion

Characteristics of the process of shared decision-making-based support from healthcare professionals

The most commonly faced dilemmas and how the healthcare professionals addressed them

HCPs faced dilemmas such as limiting or delaying cancer treatment in order to preserve the pregnancy and the choice of cancer treatment versus teratogenic risk. When it comes to limiting or delaying cancer treatment in such a situation, HCPs cannot provide the best possible treatment because certain exams are impossible during pregnancy and physicians cannot carry out treatment immediately when they consider the influence on the fetus. HCPs struggle with this dilemma, so they take time to think about these problems; in addition to sharing information, they also share their thoughts with patients and their families.

With regard to the choice of cancer treatment versus teratogenic risk, HCPs thought that the patient's and their family's uneasiness about the cancer treatment during pregnancy should be reduced, even if only a little bit. Thus, HCPs observed the influence of the cancer treatment on the pregnancy process and provided information about the patients' state after delivery and assistance in coping.

Decision-making support is provided to both the patient and her family

The pregnant cancer patients and their families faced difficulty in making a decision about treatment and pregnancy. HCPs supplied an environment where the patients and their families could jointly make a decision while prioritizing the patient's intention. In general, a patient decides for themselves, and the patient's family is considered to play a supporting role. However, in this study, the patient's family was not a surrogate decision maker but was directly receiving decision-making support.

Moreover, nursing care can be directly given to a patient's family when nursing support is required as a remedy for the family relationship, which is experiencing changes, or when the health problems of the patient have a significant impact on their family.^[20] In the case of a pregnant cancer patient, the patient and her family will see the birth of a new life, wherein the patient will need to play the role of a parent. Moreover, the patient's cancer will have a significant impact on her life and the lives of her family as well as on child-rearing. Hence, it is important to uphold the idea that SDM-based support should be provided to both the patient and her family in the case of a pregnant cancer patient.

Healthcare professionals working in a team in providing support

It is difficult for HCPs to make decisions individually for the treatment plan of a pregnant cancer patient. Therefore, the HCPs in this study were working in a team to provide decision-making support. This type of team is different from, for example, a decubitus ulcer team or a palliative care team as the latter are formed in a top-down manner based on the requirements for medical fee calculation, whereas the former is not formed on such considerations and also does not have clearly defined team members and objectives in many situations. For such a team to be effective, it is necessary for team members to be proactive and collaborate with each other.^[21] The HCPs in this study shared the same goals that were aligned with the hope of saving the lives of both the patient and fetus. They were committed to providing proactive team-based support and interacting with the patient within their clearly defined roles.

Characteristics of support from healthcare professionals provided through the process of shared decision-making-based support

A system of providing postdecision-making support

Based on decisions made by the patient and her family, HCPs responded to the impact of cancer treatment on the progress of pregnancy. Further considerations may be required for determining the methods and timing of treatment for pregnant patients because a patient may experience changes in her physical and psychological condition as her pregnancy progresses.^[22] On one hand, a study reported that children exposed to chemotherapy as a fetus are not likely to experience any physical problems.^[23] On the other hand, other studies suggest that neonatal exposure to chemotherapy may lead to fetal growth deficiency.^[24,25] Mothers receiving chemotherapy are anxious about its impact on their fetus as well as on breastfeeding after childbirth.^[26] It is noteworthy that the HCPs in this study provided support to the patient and her family through means such as observing and dealing with the mutual impact on the progress of pregnancy and cancer treatment and providing the patient and her family with information beforehand on possible situations after delivery and how to handle them.

It is because of the extreme characteristics of this study that the sixth step was found. In the sixth step of the process of support, "providing the patient with support that helps her make informed decisions," HCPs were working in a team to provide support to the patient who was facing these dilemmas and was anxious about the decisions that she had made after their implementation. In addition, the patient continued to feel anxious about

cancer recurrence because her treatment was delayed and because she could not receive standard treatment. HCPs were dealing with this situation in a team; for example, the team involved a pediatric CNS and a midwife for examining information that could be given to the patient. It was considered important to provide support, confirm that the patient understands, and can accept the decisions. To achieve this, HCPs need to work with the patient to reflect on the process of decision-making through which the patient, her family, and HCPs all agreed on the best possible option. Nojima identified “evaluating a result” as one process in the decision-making.^[27] The sixth step of this study is similar to evaluating the result, but the perspectives, such as concrete subcategories of the evaluation, are different. The significance of this model is that the viewpoints of HCPs as they support patients became clear.

Viewing the patient as both a mother and a person living with cancer

In developing a treatment plan for a pregnant cancer patient, HCPs increasingly tend to view the patient only as a cancer patient. However, the findings from this study suggest that HCPs can help alleviate the suffering of a pregnant cancer patient, who could have fulfilled the role of a mother easily if she did not have cancer, by bearing in mind that the cancer patient is also a mother, and collaborating with other professionals such as midwives for improving the support system. In this study, HCPs adjusted to each other so that the patient could give the baby colostrum and provided introductions for childcare support after giving birth. Pregnant cancer patients feel guilty for having cancer as this exposes their fetus to cancer treatment. Such patients can build a healthy mother–child relationship by checking the growth of the fetus and discussing delivery and life after childbirth with HCPs.^[28]

Limitations

There were few participants in this study, and they only included pregnant patients with breast cancer and a blood tumor. Other types of malignancies, including cervical cancer and melanoma, were limited. The participants of this study were not pregnant cancer patients and their families, but HCPs who had the experience of providing support to a pregnant cancer patient. Hence, although this study’s findings shed light on the process of SDM-based support from HCPs through the prism of HCPs’ perceptions of patients and their families as well as the sharing of information and feelings, the process of SDM *per se* was not clarified. Future studies need to involve patients and their families to elucidate the process of SDM from their perspective.

Implications for nursing practice

It is necessary to involve all HCPs to promote the process of support. Therefore, the need for nurses to act as coordinators between medical professionals was identified. In addition, with regard to this support, the setting of “the cancer board” is determined in Japan. However, the degree of different HSPs’ understanding of the importance is not identical. This process involves not only the examination site but also the values of the patients, their families, and HCPs. While nurses focus on the cancer treatment in addition to the thoughts and values of patients and their families, we think that patients, their families, and HCPs can share in the decision-making process when medical personnel consider their needs.

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Conflicts of interest

There are no conflicts of interest.

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