PATIENT EDUCATION

Interdisciplinary Modular Teaching for Patients Undergoing Progenitor Cell Transplantation

Jackie Kemp, RN, BSN, OCN®, and Jill Dickerson, RN, BSN

Patients and family caregivers preparing for cancer treatment that includes progenitor cell transplantation (PCT) require complex education. Family caregivers provide around-the-clock home care to patients post-PCT, including frequent assessments, direct care, medication administration, central line care, dressing changes, and emotional support. Occasionally, caregivers also provide assistance with daily activities, such as bathing and ambulation. Caregivers are responsible for monitoring patients and contacting their physicians when warranted. When patients are cared for at home, complications and problems may arise from the underlying disease or its treatment, immobility, infection, the side effects of medication, or other sequelae of PCT (Gillis & Donovan, 2001; Kohda et al., 2001). Some complications may result in death (Serody & Shea, 1997). Therefore, family caregivers must be prepared adequately to provide post-PCT care.

About 100 PCTs are performed at the Texas Transplant Institute each year. The patient population consists of adults and a small number of children undergoing autologous, allogeneic, and matched unrelated donor transplants. Because of the unique needs of the pediatric population, the pediatric bone marrow program developed a patient-education plan specific to the needs of these patients. Adults undergoing treatment involving PCT historically have attended a teaching session held several weeks before the planned date of admission. During the session, representatives from the interdisciplinary team (i.e., medical oncologist, oncology nurse, pharmacist, dietician, social worker, case manager, and chaplain) met with patients and caregivers informally to provide information about what to expect before, during, and after PCT.

Team members began to anecdotal note inconsistencies in the information provided to patients and found discrepancies in the patients’ and caregivers’ ability to retain and process the information. For example, after the teaching session, some of the patients had difficulty listing foods allowed on a neutropenic diet, medications to avoid, and symptoms that necessitate a call to the physician. A few patients required a hospital readmission where the reason stemmed from their inability to recall and follow instructions. In addition, the members of the interdisciplinary team had varying levels of education and clinical experience that further contributed to inconsistencies in the scope, depth, and accuracy of information disseminated. No patient teaching template to guide instructors existed. No process was in place, such as a summative evaluation, to consistently document the patients’ and caregivers’ comprehension of subject matter or their response to teaching. Also, the method of teaching did not meet the Joint Commission on the Accreditation of Healthcare Organizations’ (JCAHO’s) requirements for the provision of patient and caregiver education, which include standards for providing coordinated patient education specific to patients’ assessed needs, abilities, learning preferences, and readiness to learn (JCAHO, 2001).

Audit Indicators

Members of the interdisciplinary team met to discuss the system of patient education in use and agreed that consistent information must be provided to patients and caregivers to facilitate a clear understanding of the PCT process and promote


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self-care in the home. The team identified significant goals to improve outcomes and, through education, empower patients and caregivers to become active participants in the PCT process (Wilkes, White, & O’Riordan, 2000).

The Patient-Education Audit Form (see Figure 1) was developed to assess the major educational concepts presented at the teaching session. Each member of the interdisciplinary team developed a question for the audit form. For instance, the oncologists agreed that patients should contact the bone marrow transplant (BMT) unit if their temperature rose to 101.5°F or greater (Hughes et al., 1997). They also agreed that symptoms such as uncontrolled nausea, vomiting, diarrhea, or pain; skin rashes; mental changes; or symptoms of infection warranted the need for patients to call immediately. Pharmacy representatives felt that prescriptions should be filled and reviewed before patients are discharged. The chaplain suggested that patients and caregivers identify sources to provide emotional or spiritual support. Representatives from the physical therapy department submitted an indicator focusing on the importance of daily exercise (Dimeo et al., 1997). Dietary representatives submitted safety measures regarding patients’ diet (Henry, 1997). Because hospital policy requires that written information be provided to all patients on admission regarding their right to formulate advance directives and the implementation of those rights, representatives from social services submitted an audit indicator on advance directives.

On discharge, a member of the interdisciplinary team asked patients the eight questions on the Patient-Education Audit Form. If the patients or caregivers responded correctly, a “yes” box was checked. If they answered any questions incorrectly, a “no” box was checked and the patients and caregivers immediately were given more information on that particular area. The team agreed that it was vital to administer the audit as soon as possible after discharge because patient and caregiver misunderstandings could be detrimental to patients’ health once they arrived home.

The results of the audit, as indicated in Table 1, demonstrated that 6 of 24 patients responded incorrectly to question 1, which addressed the need to notify staff of an elevated temperature. Three of 24 patients responded incorrectly to questions 6, 7, and 8, which addressed advance directives, coping, and exercise concepts, respectively. The interdisciplinary team reviewed the results of the audit, identified limitations of the current educational program, and developed new goals for the program.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Desired Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At what temperature should you notify your doctor/clinic?</td>
<td>101.5°F unless feeling bad or having chills</td>
</tr>
<tr>
<td>2. What are two safety measures to use regarding your diet/food?</td>
<td>Practice safe handling in food preparations, avoid raw meat/seafood, avoid fast foods, eliminate salad bars, eat freshly cooked foods, and eat peeled fruits/vegetables.</td>
</tr>
<tr>
<td>3. Did you fill your prescriptions and bring them to the hospital before discharge?</td>
<td>Prescriptions were brought to the hospital before discharge.</td>
</tr>
<tr>
<td>4. What things can you do to reduce the risk of infection?</td>
<td>Avoid crowds, practice safety with pet care, maintain good personal hygiene, and observe food safety (name two to three).</td>
</tr>
<tr>
<td>5. List two symptoms for which you would need to notify the physician or outpatient clinic.</td>
<td>Nausea/vomiting, diarrhea, signs and symptoms of infection, skin rashes, pain, mental stress changes</td>
</tr>
<tr>
<td>6. Did you receive information on advanced directives at your pretransplant visit?</td>
<td>Yes</td>
</tr>
<tr>
<td>7. Name two people you can contact in this facility or elsewhere that can provide you with emotional or spiritual help.</td>
<td>Patient provides two names.</td>
</tr>
<tr>
<td>8. Give two rules of thumb that you can follow regarding activity or exercise.</td>
<td>Get some exercise each day, rest when tired, and accept help from others.</td>
</tr>
</tbody>
</table>

**Figure 1. Patient-Education Audit Form**

**Teaching Modules**

The interdisciplinary team applied the Oncology Nursing Society and American Nurses Association Standards of Practice and Education (Volker, 1998) to the development of new education documentation tools. Important concepts in the PCT process were targeted; these included general information about the procedure along with information about patients’ protective mechanisms, safety, comfort, nutrition, mobility, elimination, sleep/rest, and coping. Newly developed goals included empowering patients and caregivers to take an active role in their health care (Shore, 2001), focusing on aspects of self-care that parallel the current phase of treatment, and creating a documentation tool that promotes consistency and accuracy of information.

The identification of these goals provided the springboard for a new educational program consisting of modular patient-teaching materials and the Interdisciplinary Education and Discharge Planning (IEDP) record.

The team chose a modular patient-teaching approach because it was noted from past teaching sessions that patients and caregivers could not remember all the information presented during one session. Patients suggested that the team only present what they needed to know at that time. Therefore, the team divided the patient information into three modules so that patients and caregivers would receive material on the aspects of care that paralleled their current phase of treatment. The modules provided structure for the amount of information patients and caregivers are expected to process at one time. The team believed that printed material could provide information for individual study, reinforce previously presented information, and serve as a resource for future reference. This allowed patients and caregivers to continue the learning process outside the hospital and in the comfort of their own homes.

Module One is presented at a patient’s initial pre-PCT visit to the outpatient clinic. Module One information and informational pamphlets specific to the patient’s diagnosis are provided in a binder. An oncology nurse reviews the information with the patient and caregiver and informs them that additional modules will be added during each phase of the PCT process. Module One consists of an introduction to key members of the transplant team and answers to frequently asked questions, such as “What are the different types of PCT?” and “What if I don’t have a donor?” Module One also addresses financial considerations and information regarding research and clinical trials and includes a glossary of pertinent terms (e.g., complete remission, chemotherapy, radiation, restaging). A list of resources, local support groups, and reputable Web sites also is included.

During the next education session, patients and caregivers receive Module Two. This
INTEGRATING PATIENT EDUCATION

AUDIT FORM PRIOR TO AND AFTER IMPLEMENTING PATIENT EDUCATION

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>PRIOR (n = 24)</th>
<th>AFTER (n = 14)</th>
<th>P VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75.0</td>
<td>92.9</td>
<td>0.23</td>
</tr>
<tr>
<td>2</td>
<td>95.8</td>
<td>100.0</td>
<td>1.00</td>
</tr>
<tr>
<td>3</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>91.7</td>
<td>100.0</td>
<td>0.52</td>
</tr>
<tr>
<td>5</td>
<td>95.8</td>
<td>100.0</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>87.5</td>
<td>100.0</td>
<td>0.28</td>
</tr>
<tr>
<td>7</td>
<td>87.5</td>
<td>100.0</td>
<td>0.28</td>
</tr>
<tr>
<td>8</td>
<td>87.5</td>
<td>92.9</td>
<td>1.00</td>
</tr>
<tr>
<td>Overall</td>
<td>90.1</td>
<td>98.2</td>
<td>0.01</td>
</tr>
</tbody>
</table>

module is directed toward the treatment phase of the transplant process. Examples of the content include an explanation of the central venous catheter insertion process, chemotherapy administration and side effects, what to expect during the hospital stay, suggested items to bring to the hospital, visiting hours, and a schedule of hospital-based support groups. Team members share visual aids, such as urinary catheters, central venous catheters, and toothettes. At this time, the physician reviews the treatment plan and obtains informed consent for treatment.

Module Three covers outpatient treatment information and is distributed to patients and caregivers on admission to the hospital. This module contains information on outpatient care, such as medications (uses and side effects) and assessment of signs and symptoms of complications, such as infection. Information on symptom management and when to call the doctor also is included. When applicable, Module Three includes an additional section specific to allogeneic transplant. This subsection contains information on graft versus host disease and the need for immunosuppressive medications.

The IEDP record (see Figure 2) was developed to provide a template for teaching and enhance communication among the information providers. Completion of this form is initiated at the pretransplant education session. The tool is divided into three phases: pretransplant teaching, admission, and discharge teaching. Instructors use the tool to guide teaching on all subjects to be covered during each phase of transplant. For example, at the pretransplant teaching visit, members of the interdisciplinary team cover the topics of advance directives, patients’ rights, what to bring to the hospital, visitation policies, food restrictions, nutrition, physical exercise, and mental preparation. During this pretransplant visit, each member of the interdisciplinary team visits with patients and caregivers individually and indicates on the IEDP record that they have been instructed on the team member’s area of expertise. For example, the chaplain discusses mental preparation and spiritual concerns, the pharmacist reviews medications, and the dietician instructs the patient on food restrictions. A “comments” column is included on the record for the instructor to indicate if further teaching is needed. The record is transferred to the inpatient chart on the patient’s hospital admission and is utilized by the inpatient nurses and staff to continue the education process. Because many team members use this record, it is printed on durable white card stock paper.

The team then developed strategies for implementing the new education program and wrote a policy to delineate the use of the tools. Core representatives of the interdisciplinary team then provided in-services regarding the program and the tools for the BMT unit staff.

Knowledge Acquisition

Members of the interdisciplinary team compiled and analyzed audit results on a monthly basis. Audit results following the implementation of the new education plan were reviewed to determine if the plan was successful in increasing retention of patient education information.

The results of the audits are summarized in Table 1. The difference in the proportion of correct patient responses given in the audits administered prior to and after the new program were evaluated with Fisher’s Exact tests. The overall difference in proportions of patients responding correctly between the audits was evaluated with a Mantel-Haenszel test.

For seven of the eight questions, the correct answer response proportion was greater for the sample of patients who were assessed after implementing the new program. The statistical tests indicated, though, that none of those proportions were significantly different (p = 0.05). However, the difference between the overall proportions of correct responses on the audits was statistically significant (90.1% before versus 98.2% after; p = 0.01).

The new educational program was deemed successful in meeting the goals set forth by the interdisciplinary team. Chart reviews to assess the utilization of the IEDP record revealed consistency and accuracy in information taught to patients and caregivers. The interdisciplinary team continues to meet quarterly to discuss audit results and review edu-
cational materials. The modules subsequently have been revised to include a version specific to the volunteer progenitor cell donor.

Implications for Practice

Patient education has evolved from its medically dominated and narrow origin to support patient empowerment and participation in the educational process (Roter, Stashefsky-Margalit, & Rudd, 2001). All patients with cancer require information on their disease, treatment, side effects, and self-care needs as well as its possible effect on work, roles, and relationships. Planned patient education includes various teaching strategies and written information and contributes to better patient outcomes (Trey & Mayer, 2000).

Healthcare providers are using many new and creative methods to address the educational needs of patients with cancer and can adapt these methods to address the specific needs of subsets of patients. For example, the care of patients undergoing PCT is similar to that of patients undergoing BMT, but shorter hospitalization for patients receiving PCT requires nurses to alter the content and timing of patient education (Wagner & Quinones, 1998). One method of addressing the educational needs of patients undergoing PCT is via modular teaching and the use of an interdisciplinary patient teaching record, as described in this article. Other creative methods include using adapted, objective, and structured clinical examinations in lay caregiver educational programs to evaluate family caregivers’ skill-based competencies. In these programs, caregivers demonstrate their technical skills in certain areas, such as central line care, at practice stations (Heermann, Eilers, & Carney, 2001). Videotapes can be used to reinforce information taught to patients (Bakker et al., 1999), and computer-assisted learning also may have a role in the education process (Lowry & Johnson, 1999).

Oncology nurses periodically need to evaluate the patient-teaching methods they use and stay abreast of new developments in patient education. Nurses also must recognize that patient teaching is, fundamentally, an individualized process; one method does not “fit all.” However, by developing effective patient-teaching strategies that can be adapted to address the needs of individual patients, nurses can promote patients’ self-care abilities and help empower them to be active participants in their care.

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Author Contact: Jackie Kemp, RN, BSN, OCN®, can be reached at jackie@kempstich.com.

References


Rapid Recap

Interdisciplinary Modular Teaching for Patients Undergoing Progenitor Cell Transplantation

- Educating family caregivers and patients undergoing progenitor cell transplantation (PCT) is complex and includes information on patient assessment, direct care, medication administration, and patient monitoring.
- Patient teaching must be consistent and coordinated and should address patients’ needs, abilities, learning preferences, and readiness to learn.
- Modular teaching is one method of patient teaching that focuses on the aspects of care that parallel the current phase of patients’ treatment.
- Principles of modular teaching can be applied to the care of patients undergoing PCT by dividing content into three phases: what to expect before, during, and after PCT.
- An interdisciplinary education and discharge planning record was created to provide a method to consistently provide and document patient teaching in a coordinated manner.
- Audits can be used to assess patients’ retention of information and improve the process of patient education.