Improving Coordination of Care Among Healthcare Professionals and Patients With Diabetes and Cancer

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Background: Patients with diabetes and cancer have higher mortality and morbidity rates, and are more likely to be hospitalized during treatment. In addition, they often prioritize cancer treatment over self-management of diabetes.

Objectives: This research aims to identify the issues regarding the management of diabetes in patients with cancer by examining the perspectives of oncology providers, nurses, and patients.

Methods: This study used six focus groups of oncology providers, nurses, and patients with preexisting diabetes who received chemotherapy for a solid tumor or lymphoma. Participants were recruited from two outpatient cancer centers in Michigan. All focus group discussions were audio recorded and transcribed, and thematic analysis was conducted to identify common themes.

Findings: Three overarching themes were identified by patients, nurses, and oncologists: prioritization and responsibility, care coordination, and health/self-management. This study highlighted areas for improvement in the management of patients with preexisting diabetes being treated with chemotherapy. Additional research is needed to test interventions that improve care coordination and self-management in this population.

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number of people will have to manage both conditions simultaneously (Stevens, Dinkel, & Catanzaro, 2011).

Diabetes has been linked to higher risks of cancer diagnosis and mortality; however, patients often prioritize cancer treatment over diabetes self-management (Hershey et al., 2012; Yeh et al., 2011). Blood glucose control often becomes more difficult during times of acute illness, especially cancer, and patients will require additional help in managing both conditions. For example, medications commonly given with cancer treatment, such as glucocorticoids, may increase episodes of hyperglycemia (Leak, Davis, Houchin, & Mabrey, 2009), and chemotherapy may also affect blood glucose levels (Hershey, Bryant, et al., 2014). The challenges this patient population faces while undergoing chemotherapy can influence overall health outcomes but are not clearly understood.

Methods

A multiple category focus group design was used in this exploratory study. A total of six focus groups were conducted at two outpatient cancer centers in Michigan, with three focus groups (one of oncology providers [physicians, nurse practitioners, or physician assistants], one of oncology nurses, and one of patients with preexisting type 2 diabetes who had received chemotherapy for a solid tumor cancer or lymphoma) conducted at each center. Institutional review board approval was obtained from Michigan State University and each of the cancer centers prior to conducting the focus groups.

Sample

Patients were aged 21 years or older, had preexisting type 2 diabetes for at least six months prior to the start of chemotherapy for solid tumors or lymphoma, and were either receiving chemotherapy or had completed a chemotherapy treatment regimen within the past three months. Oncology nurses had at least three years of oncology experience providing direct care to patients receiving chemotherapy. Oncology providers, including oncologists, nurse practitioners, and physician assistants, were involved in managing adult patients with type 2 diabetes and solid tumor cancer or lymphoma and who were receiving chemotherapy at the time of the study. All participants spoke and understood English and had transportation to and from the study sites where the focus groups were conducted. Individuals with a history of dementia, Alzheimer disease, or an untreated hearing deficit were excluded.

Data Collection

Participants were recruited through flyers and nurse recruiters at each of the cancer centers. Each participant completed a consent form and demographic survey prior to the group interview. Focus groups were conducted in a private conference room at the cancer centers, and notes were taken on a large notepad for the participants during the meeting. Each session lasted about 60–90 minutes, and the discussion was audio recorded and transcribed for analysis. The semistructured interview involved open-ended questions that addressed issues and challenges encountered by providers and patients while managing diabetes and cancer (sample questions used in the discussion can be found in Figure 1). At the end of each session, all participants were encouraged to share any other information regarding their experiences. Each participant received a $25 gift card at the end of the session.

Data Analysis

Thematic analysis was used to identify common themes using ATLAS-ti®, version 6, software. The raw information was first reduced to an outline, and themes within each subgroup were established and then compared to all groups. To establish reliability, transcripts were coded by each author and then discussed until a final consensus on the themes and codes was reached. Descriptive analysis was performed using SPSS®, version 22.0.

Results

Five adults with preexisting diabetes and cancer, 10 RNs, and 10 oncology providers participated in the study (see Table 1). The majority of nurses and providers estimated that 21%–35% of the patients they encountered had diabetes. However, only 50% of both the nurses and providers reported that they had diabetes-specific training. Three overarching themes were identified: (a) prioritization and responsibility, (b) care coordination, and (c) health/self-management. Multiple subthemes were identified within each main theme.

Prioritization and Responsibility

Prioritization and responsibility refers to the portion of care participants focused on and whom they believed should be held accountable for managing each disease during the course of treatment. Within this main theme were three subthemes—competing demands, provider prioritization, and responsibility.

The nurse and oncologist groups discussed that their patients were able to focus on only one disease at a time, which usually was cancer. They agreed that this could be attributed to a stronger fear of cancer or a lack of time and energy during cancer treatment. This was confirmed by the patients, who also stated that they felt too overwhelmed to focus on cancer and diabetes.
simultaneously. This constriction forced the patients to choose between the two, and participant groups generally agreed that cancer treatment took priority over managing the diabetes. For example, some patients believed that their providers “didn’t worry about [their] sugar at all,” so they, too, did not have to be concerned about their diabetes.

The patients were divided about who they believed should be most responsible for their care. Some believed that their providers should have been more involved in all aspects of their care, including diabetes management. One participant stated that the providers “weren’t real concerned with the diabetes.” The nurses felt that the patients needed to take ownership of their care, but that patients were often too overwhelmed to properly do so. Some oncologists believed that “it was somebody else’s problem,” and they “just assume[d] that someone else [had] it taken care of.” Oncologists who were concerned about controlling diabetes believed that managing the disease was a job for primary care providers (PCPs). Nurses said that they often were stuck between providers (oncologists and PCPs) and patients, and did not have clear guidelines on how to care for patients with diabetes. Overall, each healthcare group felt that another provider should be responsible for managing diabetes. Subthemes and quotes across participants can be found in Figure 2.

Care Coordination

A breakdown in care coordination occurred because of poor communication between healthcare providers and uncertainty about who should be responsible for what care. Care coordination included two subthemes—ineffective communication and care management. Patients, nurses, and oncologists all attributed issues to poor communication between PCPs and oncologists.

Oncologists felt that PCPs lacked adequate knowledge about cancer treatments, which often led them to transfer all care to oncologists. This was problematic as oncologists did not feel that their role was to manage noncancerous conditions or that they had the knowledge to do so. However, one nurse stated that problems occur when oncologists, “being nice or doing a favor, will write for one of the patient’s other medications, such as the patient’s cardiac medication.” Such acts can lead to patients skipping their next visit to their PCPs in the belief that their oncologists would manage all their care. In addition, nurses did not know how closely to track, monitor, and treat patient blood glucose levels. They also noted that collaboration between patients and providers on managing diabetes was limited. One patient said that her doctor thought she did a better job managing her diabetes, and then instructed her to “take care of it the way you feel.” Other patients did not talk about changes in their blood glucose levels with any of their providers. Overall, all healthcare groups expressed concern about their communication with at least one other group. Subthemes and quotes across participants can be found in Figure 2.

Health/Self-Management

The final identified theme was health/self-management. Within this major theme were three subthemes—symptom interference, symptoms/side effects, and glycemic control. All healthcare groups spoke of the negative impacts cancer treatment had on managing diabetes. Specifically, fatigue interfered with regular exercise, nausea and vomiting interfered with nutrition, and altered sleep cycles prevented the maintenance of regular schedules. Patients said that following a diet was particularly difficult because they “were not supposed to have [the food they wanted] with their diabetes.” Providers also said that they often

TABLE 1. Sample Characteristics by Group

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Patients (N = 5)</th>
<th>Nurses (N = 10)</th>
<th>Providers (N = 10)</th>
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<tr>
<td></td>
<td>X</td>
<td>SD</td>
<td>X</td>
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<td>Years at current site</td>
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NP—nurse practitioner; PA—physician assistant
*Years with diabetes = 10.7 (SD = 6.16)
Competing demands: Challenges that affect prioritization of disease management

Patient: "To this day, I don’t know all the drugs I get. I can think and remember the drugs, and they tell me every time, and it doesn’t stick—all the medical name things. I would recognize them on a list, but there’s just so much coming at you in the beginning.”

"I wasn’t too concerned about the diabetes. They were more concerned about it than I was.”

Nurse: “We’ll list all the doctors, and they always know what their primary care is, and a lot of times they’ll say that exact thing. ‘Oh, but I haven’t seen him in a year because I’ve been seeing so many other doctors.’”

Provider: “When they get the diagnosis of cancer—that is the worst diagnosis in the world to them. That they really think that this is it. When they are diagnosed with diabetes or hypertension . . . maybe they were taken aback that it will impact their health, but not like cancer. So, then, I think they focus on the cancer and fighting it and everything else gets let go.”

Provider prioritization: Which disease physicians focus on

Patient: “My general physician knew that my sugar was going up and knew I was getting chemo treatments, so [he] just wanted to monitor it for a while.”

“Most chemo doctors I run into don’t care about your sugar; the only thing they care about is the chemo.”

“When I go in, they do look at my blood work, but they’ve never made a comment on my sugars . . . it doesn’t seem like the sugars seem to be an issue.”

Nurse: “She said, ‘Well, my doctor told me not to worry about it,’ you know what I mean, until she is done with chemotherapy.”

“We told her to go to her doctor, but then the doctor said, ‘Well, just check your sugar day and night and see how it is and let us know.’ And she’s got multiple comorbidities. [He said] that this needs to be managed by her primary.”

Provider: “It’s something I don’t pay that much attention to unless somebody is on steroids and their blood sugars are out of control.”

“I think there are a lot of doctors outside of cancer that, once [their patients] are diagnosed with cancer, think that they are done. So why worry about the diabetes now?”

Responsibility: Who is or who should be in charge of care

Patient: “I think the chemo nurses paid more attention to the patients—how they’re feeling, what they’re doing—than the nurses in the office.”

“My regular doctor, he just sort of waited until I got done with chemo before we started really doing anything, because, like, he said there’s not really much they could do.”

“It’s probably our fault; we should have got busy, got books, and read about all that stuff.”

Nurse: “What I was thinking, [patients] need ownership in all aspects of their care.”

“Who should be responsible to facilitate that discussion with their primary care physician?”

“You know [the patients] want to be able to deal with it, and those are the ones that are proactive and will actually call their diabetes doctor.”

“We don’t do insulin, and I don’t think we should do insulin training.”

Provider: “This isn’t my realm of care for her, but at the same time, I need to take care of her.”

“I just assume that someone has it taken care of. Kind of like their thyroid disease or blood pressure or anything like that.”

“There is a need identified there that primary care physicians are kind of feeling overwhelmed, too, and kind of pushing it away to the specialist.”

FIGURE 2. Prioritization and Responsibility Themes and Example Quotes From Patients, Nurses, and Providers

just wanted to keep weight on the patients, and so they urged them to eat whatever they could, regardless of their diabetic status. This, combined with patient fatigue and lack of exercise, made the two primary diabetes self-management techniques—managing diet and exercise—even more difficult to perform.

The groups had difficulty determining whether diabetes, cancer, or treatment caused the fatigue, nausea and vomiting, and altered sleep schedules. Lack of thorough assessment at the start of treatment to determine patient baselines compounded the problem, making it harder to identify appropriate treatment. For example, a nurse recalled a situation in which a patient was experiencing hot flashes and attributed them to hypoglycemia. The patient continued to consume sugary foods and ended up with a blood glucose level in the 400s (mg/dL). Later, the patient found that the hormones used in the cancer treatment were actually causing the hot flashes. All groups identified an increase in blood glucose levels at some point during the treatment. Nurses and providers also identified potential problems from high blood glucose, such as slower healing, more hospital admissions, and increased risk for infection. Subthemes and quotes across participants can be found in Figure 4.

Discussion

This study focused on identifying care challenges encountered by patients with preexisting diabetes undergoing chemotherapy and oncology providers. The results indicated that all providers and patients encounter challenges in the management of diabetes during cancer treatment. The identified issues were similar across all three groups.

One of the main themes identified was prioritization and responsibility. Overall, all groups appeared to prioritize cancer treatment over diabetes management. This is consistent with past studies (Hershey et al., 2012; Piette & Kerr, 2006) and is likely because patients view cancer as being more severe than diabetes, which has been found to influence decision making in the management of comorbid conditions (Kerr et al., 2007; Piette & Kerr, 2006). Another issue was deciding who should manage diabetes during cancer treatment. Confusion about the roles and responsibilities of healthcare providers in comorbidity management in patients with cancer is consistent with prior research (Walsh et al., 2010), reinforcing the need for improved coordination of care among professionals caring for patients with multiple comorbidities.

One challenge identified by all participants was care coordination and communication. The need for improved care coordination for patients in the oncology setting has been noted in other studies (Girault et al., 2015; Walsh et al., 2010, 2011). Providing specialty care such as oncology can affect PCPs’ ability to effectively coordinate care (Liss et al., 2011). Participants identified the difficulty of communicating across disciplines and acknowledged a lack of communication. PCPs have said that delays in information transfer of diagnostic findings, decisions about or changes in treatment, and complications during cancer treatment hinder their ability to provide appropriate care to patients (Walsh et al., 2010).

As noted in prior research, cancer treatment symptoms (e.g., fatigue, nausea and vomiting) interfere with patients’ ability to self-manage diabetes (Hershey et al., 2012). Patients, oncology
nurses, and providers noted this in the current study. Prior research also revealed that people who had diabetes longer before cancer diagnosis managed their diabetes better during cancer treatment. In addition, their level of self-management prior to the start of chemotherapy was not indicative of how well they self-managed afterward (Hershey, Given, Given, Corser, & von Eye, 2014). The current study, combined with prior findings, highlighted the need to further explore the health outcomes of diabetes self-management prior to and during cancer treatment.

Findings from the current study also revealed confusion about the cause (cancer treatment and/or diabetes) of symptoms such as fatigue, numbness and tingling, nausea, and pain (Hershey & Pierce, 2015). The level of glycemic control patients have during chemotherapy can determine the symptoms and severity of symptoms they experience (Stratton et al., 2000; Sullivan et al., 2012). Healthcare providers must understand that the symptoms of patients with diabetes and cancer may have two origins, and to address these symptoms, they must acknowledge and treat both entities.

The findings from this study contribute to the literature by identifying current gaps and issues related to the care of patients with diabetes and cancer. The results highlight the importance of abandoning a siloed approach to cancer care and embracing a more comprehensive approach that considers all the comorbidities of patients. The ultimate goal is to improve survivorship and quality of life for all patients with cancer. By better understanding the issues, healthcare professionals can develop interventions to improve the care and outcomes for patients with cancer, diabetes, and other comorbidities.

Strengths and Limitations

Although the sample size was small, it allowed for a more intimate group discussion and provided each participant with more time to share. The groups all were from Michigan, so future studies should be conducted with larger samples and samples with more demographic variation. All patients in the current study had solid tumor cancers and were being treated in outpatient settings. The experience of patients in inpatient settings and patients with other cancers may differ. Participants were mainly Caucasian, limiting generalizability of the findings. Future studies should include PCPs because they are integral parts of the patient care team and can provide unique perspective on the issues.

Implications for Practice and Research

This study identified multiple areas in which communication can be improved among patients, nurses, PCPs, oncologists, and other oncology providers. Expectations of diabetes management should be established early and be tailored to each patient during cancer treatment. These expectations should underscore the importance of continued diabetes management during treatment and help clarify the roles and responsibilities of all team members, including patients and PCPs. A thorough assessment of patients with comorbidities during cancer treatment should be conducted, especially prior to patients starting treatment, to establish a baseline symptom profile. Interventions for symptom management in patients with preexisting comorbidities must address the cancer and diabetes and/or other comorbidities. Care management guidelines identifying acceptable glucose levels and glucose management strategies are needed to help providers manage patients’ diabetes and cancer. The current study also revealed a need for diabetes-specific education for oncology providers and nurses.

Additional research on the relationship between diabetes and cancer should (a) explore the patient experience with more diverse groups, (b) examine the impact that managing patients...
with complex medical diagnoses has on self-management and health-related outcomes, and (c) help develop interventions targeted at improving patient self-management and care coordination of multiple chronic conditions, all in the effort to improve health-related outcomes for patients with comorbidities.

Conclusion

Many gaps exist in the care management of patients with diabetes and cancer that may leave patients and providers uncertain as to what should be done and who is responsible for doing it. As the population ages, more patients with a greater number of diseases will need managed, and all members of the healthcare team must be motivated and prepared to manage all aspects of patient care. Education tailored to each patient and improved communication between specialties may help facilitate this coordination of care.

Implications for Practice

- Establish roles and responsibilities for all members of the healthcare team regarding the management of diabetes at the start of cancer treatment.
- Develop interventions to improve symptom assessment and management among patients with cancer and diabetes.
- Create care management guidelines for patients with diabetes who are undergoing treatment for cancer.

References


