Presence and severity of constipation in hospice patients with advanced cancer

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Abstract

Although constipation is a problem commonly seen in hospice patients it is not often addressed in the literature as a target symptom needing management. The purpose of this study was to assess the levels of self-reported constipation in a group of patients with advanced cancer at admission to hospice and two weeks and one month after admission. The constipation assessment scale (CAS) measured the presence and intensity of constipation. Comparisons between time points were not possible, but trends seem to indicate that patient symptoms are not being successfully managed.

Key words: cancer, constipation, hospice, pain control, symptom management

Introduction

Improving overall quality of life is a focus of hospice care. One major approach to improving quality of life is through management of common symptoms. Although pain is the symptom that has received the most attention in the literature, there are other symptoms commonly experienced by hospice patients with cancer. Based on a review of hospice charts, the three most commonly occurring symptoms found in hospice patients with cancer were pain, dyspnea, and constipation.[1] Although constipation is a problem commonly seen in hospice patients, it is not often addressed in the literature as a target symptom that needs management. Constipation causes some degree of symptom distress and has a negative effect on the patient's overall quality of life. In a study of 68 hospice patients with cancer, patients ranked constipation control as ninth in importance out of 25 items related to overall quality of life.[2]

Among hospitalized patients with cancer, 70 percent to 100 percent have been shown to have a problem with constipation.[1,3-6] Studies of hospice patients with cancer have shown a range of 24 percent to 84 percent in prevalence of constipation.[7-10]

Constipation has been defined as "a decrease in the passage of formed stool and is characterized by stools that are hard and difficult to pass."[11] Among 688 hospice patients receiving morphine, constipation was found to be the most common side effect with a prevalence of 48 percent.[10] However, constipation occurs in persons with advanced cancer not only because of the opiates needed to manage pain, but also due to limited food and fluid intake and lack of activity.

Although constipation continues to be a common and distressing problem in hospice patients with cancer, it is under-assessed and under-reported by the physicians and nurses caring for these patients. In a group of hospice patients with cancer, constipation was prospectively assessed by asking them about symptoms of constipation.[3] The study found that 84 percent of hospice patients had some degree of constipation, but it was recorded as a problem in only 29 percent of these patients' charts. This study affirms the lack of

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attention paid to the problem of constipation. A study involving a chart audit at a hospice indicated constipation was one of the top three symptoms most commonly experienced by patients. In fact, 51 percent of cancer patients were being treated for constipation.[1] If all patients with constipation were receiving nursing intervention, 51 percent would be seem to be a large number. However, earlier prospective research[3,12] that asked patients about their symptoms suggests that the number of patients suffering with constipation is much higher than 51 percent and probably remaining unrecognized and untreated. Thus, the need remains for a focus on opiate-induced constipation because constipation that is not assessed and not reported tends to remain untreated. The purpose of this study was to assess the levels of self-reported constipation in a group of patients with advanced cancer on admission to hospice and at two weeks and one month after admission.

Methods

Design

This study involved a secondary analysis of data from an ongoing clinical trial focused on symptom management and quality of life. Subjects from the control group were selected because they had received no intervention as part of the study, but received only standard care from the hospice.

Sample

A total of 83 patients had been included in the control group at the time of this analysis. To be eligible, patients had to be adults (>18 years of age) with a diagnosis of cancer and had to consent to participate. Patients had to have at least a sixth grade education, be able to read and understand English, and achieve a minimum score of 7 on the short, portable Mini-Mental Status Exam.[13] Patients were excluded if they did not have constipation as a problem as documented by hospice admission records.

Instruments

Constipation assessment scale

The *constipation assessment scale* (CAS) is an eight-item, three-point summated rating scale that measures the presence and intensity of constipation. The patient rates each item as no problem, some problem, or severe problem. Scores may range from 0 (no constipation) to 16 (worst possible constipation). Evidence of validity and reliability was strong.[5] A significant difference ($p = .0001$) between CAS scores of 32 working adults and 32 patients receiving treatment with either morphine or vinca alkaloids supported the validity of the CAS. A further analysis compared the CAS scores of the patients receiving significant doses of morphine with the CAS scores of patients who had received vinca alkaloids three weeks previously. The significant difference between these two groups ($p < .01$) supports the sensitivity of the CAS to differentiate between moderate and severe symptoms of constipation. Test-retest with brief delay provided strong evidence of reliability ($r = .98$). Alpha coefficients ($r = .70$ to $r = .78$) were acceptable for such a short scale.[5]

Pain at its worst

A screening item for pain was included in the set of instruments administered. This item asked the patient "if you have pain, how bad is that pain when it is at its worst?" Patients were asked to respond on a 0-to-10 scale, with 0 representing no pain and 10 representing the worst possible pain. The data are included in this constipation study because of the likelihood that pain treatment with opioids is a major contributing factor to constipation's presence and intensity.

Demographic data

Standard demographic data were collected on patients to allow description of the sample. Data included age, gender, ethnicity, and cancer diagnosis.

Procedures

This project was approved by the bioethics committee of the hospice involved. Following approval by this committee, the proposal was approved by the Institutional Review Board for the Protection of Human Subjects at the University of South Florida.

Screening for study admission

Eligible patients who were potential study subjects were initially identified by hospice admission staff and referred to the research assistant (RA) and nurse data collector at the beginning of each day. The RA-nurse data collector contacted the patient to arrange a visit to the home. During this visit, the study was explained, consent was obtained, and the mental status of the patient was evaluated. Baseline data were collected from patients who met eligibility criteria.

Random assignment to groups

Although the sample could not be randomly selected, the patients were randomly assigned to the treatment conditions. A computerized randomization procedure was accessed via telephone to assign subjects to groups. Only subjects in the control (standard care) group were included in this analysis.

Data collection for all subjects was conducted on admission to the study, day 16 of hospice admission, and day 30. Baseline data collection took place

within 48 hours to 72 hours of admission to hospice. Patients who met the admission criteria were asked to fill out the questionnaires with the data collector nearby, offering support as needed. The data collector interviewed the patients to obtain demographic information.

Post-intervention data collection occurred at two weeks after entry into the study (approximately day 16) and four weeks after (approximately day 30). Patients again were asked to fill out the CAS each time.

Data analysis

Data were analyzed to describe the sample by using means, standard deviations (SD), frequencies, and percentages. In order to identify the number of patients who were reporting constipation at each data collection time, the frequency and percentage were calculated for patients in the sample who reported two or more symptoms on the CAS. Means and standard deviations were used to identify the severity of constipation and pain at each of the three time points.

Results

Sample

The sample for this analysis consisted of 83 patients with cancer, newly admitted to hospice home care. However, 10 patients had colostomies and were not eligible to complete the constipation assessment, and another three patients were not able to complete all items on the assessment because of fatigue or debilitation. The resulting sample for this analysis was 70 patients. The mean age of the patients was 70.1 years (SD= 12.9). Slightly more of the patients in the sample were men (57 percent) as compared to women (43 percent), and the majority (86 percent) were Caucasian. Most common diagnoses were lung (37 percent), colon (14 percent), and breast (10 percent) cancer (Table 1).

Table 1. Frequency and percentage of patients by ethnicity and cancer diagnosis

Variable	Frequency	Percent
Ethnicity		
Caucasian	60	86
African American	6	9
Hispanic	3	4
Missing data	1	1
Type of cancer		
Lung	26	37
Colon	10	14
Breast	7	10
Pancreas	6	9
Prostate	5	6
GY tumors	4	6
Lymphomas/myeloma	3	4
Head and neck tumors	3	4
Other solid tumors	6	9

Occurrence of constipation

At the time of admission to hospice, 44 patients (63 percent) reported a score of 2 or more on the CAS (possible range: 0 to 16), indicating some degree of constipation. Thirteen of these patients (19 percent of the total) reported scores of 7 or higher, indicating severe constipation. The mean score for this data point was 3.33 (SD = 3.4). Constipation often is a result of opioids used to treat pain. Thus, we needed to determine whether the patients had pain. Among the 70 patients at the first data collection point, pain at its worst averaged 4.7 (SD = 3.3), and 57 patients (84 percent) reported some level of pain. We were unable to determine what medications these patients were receiving, but opioids are commonly used in this setting.

Two weeks after admission to the study, the CAS was repeated for the remaining 37 patients. Among these

Table 2. Frequency and percent of patients with pain and constipation, and means and standard deviations for intensity scores

Variable	n	Frequency*	Percent	Mean	SD
Constipation					
Baseline	70	44	63	3.3	3.4
Two weeks	37	25	68	3.5	3.5
Four weeks	20	10	50	2.3	2.5
Pain at its worst					
Baseline	70	57	84	4.7	3.3
Two weeks	37	31	82	7.0	2.6
Four weeks	20	20	100	6.1	2.5

*Frequency of constipation indicates number of patients with a score of two or higher.

patients, 25 (68 percent) had scores of 2 or higher on the CAS. Eight of these patients (22 percent) reported CAS scores of seven or higher. The CAS mean for the 37 patients was 3.5 (SD = 3.5). The mean score for pain at its worst was 7.0 (SD = 2.6). Thirty-one patients (82 percent) reported some level of pain.

By four weeks after admission to the study, only 20 patients remained in the sample. Among this group, 10 (50 percent) had CAS scores of 2 or higher, and only one had a score of 7 or higher. The mean CAS score at this data point was 2.3 (SD = 2.5). Among the 20 patients remaining at the third data collection point, all (100 percent) reported some level of pain. The mean score for pain at its worst of this group was 6.1 (SD = 2.5).

Discussion

Sample

The sample was approximately representative of the patients in this hospice. Patients tend to be male slightly more often than female, and with female caregivers.[4] The ethnicity also matches the patient population in this hospice, although the population in the community has slightly more African-Americans and Hispanics than seen in the sample. Every minority patient that fit the study criteria was invited to participate, but the limited number of minority patients in the hospice population affected the number in the final sample, thus limiting the generalizability of study results.

The most common cancer diagnoses in this sample are among the most common in the United States.[14] The relatively higher number of lung cancer cases, as compared to breast cancer cases, is probably a reflection of the higher mortality rates with lung cancer, and to a lesser extent is due to the somewhat smaller proportion of women in the sample.

A serious limitation of these findings is the marked attrition of study subjects over the course of the study. Attrition was 47 percent at two weeks and 71 percent at four weeks. This indicates the difficulty of conducting longitudinal studies on patients who are critically ill or near death. However, in spite of patient attrition, some trends can be noted.

Occurrence and intensity of constipation

The percent of patients reporting symptoms of constipation actually increased slightly from admission to week two with a concomitant slight increase in the mean intensity. Although the high attrition contributes to our inability to make direct comparisons, the fact that the constipation in the survivors at week two had not come under control is important; patients still had a problem after two weeks of care. Hospices are known for their focus on symptom management. However, when patients are dying so quickly, it is not acceptable for management of constipation to take a full two weeks.

The trend by the fourth week seemed to be downward. However, half the patients still had a problem with constipation by the fourth week. In this length of time, it seems that the vast majority of cases of constipation should have been completely managed. Note that the occurrence of severe constipation (CAS score of 7 or greater) was relatively low. Seven was selected as the cut-off for severe constipation because a mean score of 7 was found in earlier research with cancer patients receiving a minimum of 30 mg of morphine a day.[5] Nineteen percent and 22 percent of patients reported severe constipation at baseline and the second week, respectively, and the number dropped to one out of 20 (5 percent) by the fourth week.

Because of the well known link between pain management using opioids and occurrence of constipation, the number of patients in the sample with pain and the mean intensity of the pain also were reported. The management of pain has received much more attention in the healthcare literature than has constipation; so, we should expect that the pain would be managed very quickly in a hospice setting such as this. However, the percentage of patients reporting pain after two weeks was high and went higher at the fourth week. In addition, the mean pain score increased considerably from admission to the second week. Again, note that this level of pain intensity after two and four weeks of hospice care is not acceptable.

A serious limitation of the study is that the investigators did not evaluate what was being done to manage constipation or pain. Future studies should include both prospective data from patients, such as were collected here, in addition to chart audit data that would reveal what attempts had been made to manage symptoms.

Conclusions

The purpose of this secondary analysis of data was to evaluate the self-reported levels of constipation among hospice patients at three time points. Because of a severe problem with attrition, comparisons between time points were not possible. However, trends seem to indicate that patient symptoms are not being successfully managed. Staff education needs to focus on the importance of assessing and managing constipation as a way to enhance overall quality of life in hospice patients with cancer.

Author's note

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