Establishment of Surgeon-Led Palliative Care Teams in a University Hospital: Measured Outcomes

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Abstract

Objective: To investigate whether establishment of surgeon-led multidisciplinary palliative care teams at our hospital has resulted in measurable benefits for patients with terminal-stage disease.

Subjects and Methods: Subjects were 101 patients who visited the Department of Gastrointestinal and General Surgery at St. Marianna University Hospital during the 1-year period of August 2005 through July 2006. The chief complaint in all cases was oncogenic pain. Realizing that it would take time for our new system to have an effect, we divided these patients into an early-period group (August 2005–January 2006) and a late-period group (February 2006–July 2006), and we compared outcomes between the 2 groups and various subgroups. The length of patients’ hospital stay was taken as the main outcome of interest because we considered it to be the clearest measurable indicator of a direct effect of our team approach to palliative care.

Results: Mean±SD hospital stay was 50.36±64.63 days for the early-period group and significantly shorter at 35.09±27.64 days for the late-period group. (p=0.044). The hospital stay also differed significantly between long-term in-patients (those hospitalized 60 days or more) in the early-period group and those in the late-period group (152.33±100.87 days vs. 82.75±23.12 days, respectively; p=0.016). The hospital stay of early-period patients who died was 64±82.87 days, and that of late-period patients who died was significantly shorter at 32±19.77 days (p=0.015). The positive outcomes of the team-based palliative care appeared to arise from the ability of the team specialists to alleviate patients’ symptoms and release them to home treatment.

Conclusion: We conclude that establishment of specialized palliative care teams yields a significant benefit to terminal-stage cancer patients that is manifested by shortened hospital stays.

Key words
Palliative care, surgery, length of stay

Introduction

The importance of palliative care has been increasingly recognized in Japan in recent years, and the numbers of hospice facilities, palliative care units, and palliative care wards are increasing. However, patients in the terminal period of life in specialized facilities account for only 6% of all patients needing end-of-life care¹, and currently, most patients requiring palliative care spend their terminal period outside such facilities. This is the situation for many patients who have received treatment at hospitals where there are no units or wards that specialize in palliative care.

As gastrointestinal surgeons practicing at St. Marianna University Hospital, we come into contact with many terminally ill cancer patients, and we have practiced palliative care on a daily basis for many years. We have come to believe that it is a major responsibility of gastrointestinal surgeons to provide palliative care. Although our hospital is an acute care hospital, we created palliative care teams in August 2005, each made up of a gastrointestinal surgeon, a psychiatrist, a nurse, and a pharmacist, and we have thus provided palliative care for many patients with

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gastrointestinal carcinoma admitted to our department. We have taken a team approach to palliative care so that the care provided is comprehensive. To evaluate the effectiveness of our specialized team approach to palliative care, we investigated whether specific outcomes could be attributed to the establishment of our new program. We examined the length of hospital stay in particular. We report the results of our study and discuss what we have found to be the benefits of team-based palliative care.

**Subjects and Methods**

Subjects were 101 patients with a chief complaint of gastrointestinal pain that was treated in the St. Marianna University School of Medicine Department of Gastrointestinal and General Surgery during the 1-year period of August 2005 through July 2006 (*Table 1*). Realizing that it would take time for our new system to have an effect, we divided patients treated during this time into an early-period group, i.e., those treated between August 2005 and January 2006, and a late-period group, i.e., those treated between February 2006 and July 2006.

The work of the palliative care teams was done mainly during medical ward rounds, and individual issues discovered during these rounds were reported to the individual patient’s treating physician and the palliative care team physician. In addition, our hospital has a medical support center (MSC) that our doctors can contact to provide patients with registered nurses and social workers who can arrange home treatment and other types of support and/or discuss patients’ financial concerns.

We were granted permission by the St. Marianna University School of Medicine Ethics Committee to access patients’ records to obtain the following information: patient age and sex; type of illness; duration of the illness; and length of the hospital stay. The patient information was used to determine the exact length of stay for patients who were hospitalized for 60 days or more (long-term in-patients), length of stay for patients who died, the causes of long-term hospitalization, number of MSC requests, number of transfers to home, and time between establishment of the care teams and a notable change in outcomes.

These variables, with the exception of age, sex, and type and duration of illness, were considered outcome variables, and of all outcome variables that we examined, length of stay was taken as the main variable of interest because we considered it to be the clearest measurable indicator of a direct effect of our team approach to palliative care.

Variables are shown per group as the number (and percentage) of patients or as mean±SD (and range) values. Between-group differences were analyzed by Student’s t-test, and a p-value of <0.05 was

### Table 1. Patient Characteristics and Outcome Variables, Per Study Group

<table>
<thead>
<tr>
<th></th>
<th>Early-period group</th>
<th>Late-period group</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex ratio (M/F)</strong></td>
<td>32/14</td>
<td>40/15</td>
<td></td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td>64 (21–81)</td>
<td>64 (29–85)</td>
<td></td>
</tr>
<tr>
<td><strong>Hospital stay (days)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total patients</td>
<td>50.36±64.63 (6–365)</td>
<td>35.09±27.64 (5–134)</td>
<td>0.044</td>
</tr>
<tr>
<td>Long-term in-patients</td>
<td>152.33±100.87 (78–365)</td>
<td>82.75±23.12 (63–134)</td>
<td>0.016</td>
</tr>
<tr>
<td>Patients who died**</td>
<td>64.0±82.87 (7–365)</td>
<td>32.0±19.77 (8–80)</td>
<td>0.015</td>
</tr>
<tr>
<td><strong>Causes of long-term hospitalization</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Poorly controlled pain</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Entero-cutaneous fistula</td>
<td>2</td>
<td>0</td>
<td></td>
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<tr>
<td>Poor appetite</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Ileus</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Underlying disease</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Number of MSC requests</td>
<td>15</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Number of patients re-admitted</td>
<td>4</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

Values are shown as mean±SD (and range) or number of patients unless otherwise indicated.

*Includes multiple visits in some cases.

**26 (20 men and 6 women) early-period patients and 36 (24 men and 12 women) late-period patients died.

M, male; F, female; long-term in-patients, patients whose stay was ≥60 days; MSC, medical support center.
considered statistically significant.

This study was approved by the Ethics Committee at St. Marianna University School of Medicine (Approval No3317).

Results

The early-period group comprised 46 patients (32 men and 16 women, aged 21–81 years) treated for esophageal cancer (n=2), gastric cancer (n=10), duodenal GIST (n=1), colon cancer (n=11), rectal cancer (n=13), liver cancer (n=2), pancreatic cancer (n=6), or gallbladder cancer (n=1). The late-period group comprised 55 patients (40 men and 15 women, aged 29–85 years) treated for esophageal cancer (n=3), gastric cancer (n=13), duodenal cancer (n=1), colon cancer (n=8), rectal cancer (n=12), liver cancer (n=4), pancreatic cancer (n=10), breast cancer (n=1), gallbladder cancer (n=1), malignant retroperitoneal tumor (n=1), or malignant lymphoma (n=1). The number, sex, and ages of patients are shown per study group on the Table 1.

Outcome variables are also shown on the Table 1. The hospital stay differed significantly between the 2 main study groups at 50.36±64.63 days (range, 6–365 days) for the early-period group and 35.09±27.64 days (range, 5–134 days) for the late-period group (p=0.044). The hospital stay also differed significantly for long-term in-patients at 152.33±100.87 days (range, 78–365 days) in the early-period group and 82.75±23.12 days (range, 63–134 days) in the late-period group (p=0.016). Causes of long-term hospitalization are shown on the Table 1. Of note is the absence of cases of poorly controlled pain that we found amongst the patients who died (32.0±8.77 [8–80] days vs. 64.0±82.87 [7–365] days, respectively; p=0.015). MSC requests numbered 15 for patients in the early-period group and 25 for patients in the late-period group. There was an increase in the number of transfers to home, from 7 (47%) early-period patients transferred home to 19 (76%) late-period patients transferred home.

Discussion

The necessity of palliative care for persons with terminal diseases has gained recognition throughout Japan. A major factor contributing to this recent awareness is the Cancer Control Act, which was implemented in April 2007. As a result of national efforts to promote palliative care, the number of hospital stays. These factors include the provision of home care by nurses and social workers, which has actually allowed for the release of some patients who would not have otherwise been discharged. Incorporated into this system are professionals with whom patients
and their families can discuss financial concerns. We verified that the number of requests for MSC support and the number of home transfers increased at our hospital after the palliative care teams began functioning.

There are treatment centers in the area surrounding our hospital that can provide home visits. These centers can be contacted by patients’ family members, and visiting nurses who can provide regular home health care, including regular palliative care, can be assigned to a patient. However, there are many regions in Japan where patients cannot be discharged due to nursing shortages and lack of home-visit treatment centers. Thus, it is difficult to say that the spread of this practice has been equal throughout the country. Hamano et al reported a study of more than 2000 patients receiving either hospital-based or home-based palliative care. Of patients expected to live only days or weeks, those who received palliative care mainly at home survived significantly longer than those who received palliative care at a hospital. Many patients who died in a hospital had returned to the hospital when their general condition began to decline dramatically. This is because the care that they were receiving at home fell short of what they really needed. The longer survival of patients cared for at home suggests that hospitals and regional medical institutions need to collaborate to create a home-based palliative care system that more fully meets the needs of patients given only days or weeks to live.

We also noted shorter hospital stays for patients facing imminent death. Earlier-than-usual discharges were made possible by alleviating long-term in-patients’ symptoms. The number of patients whose needs were met by nursing care alone increased. Naturally, some discharges were temporary, facilitated by the provision of various types of at-home support, and patients were readmitted if their health status worsened. The summary outcome was that the overall length of stay for such patients was reduced.

The number of hospitals in Japan with active multidisciplinary palliative care teams has been increasing. As of July 2015, 215 hospitals were listed by the Japan Hospice and Palliative Care Association, but registration with the association is not mandatory, so not all hospitals with palliative care teams are listed. The hospitals that are listed consider team activities to be essential. There are a total of 476 hospice centers and hospitals that provide palliative care and are registered with the Japanese Society for Palliative Medicine. There have been many reports regarding the creation of teams, and we are beginning to see reports on the effectiveness of these teams. For example, significant alleviation of symptoms through palliative care interventions has been reported, and this in turn has shortened hospital stays. The data are reported by medical professionals and hospitals as outlined in the Cancer Control Act. A nationwide cancer control program based on the Cancer Control Act was initiated in June 2007. Team treatment, including palliative care, is promoted under this Act; prefectures are required to set up a least one base hospital that establishes and properly prepares palliative care teams. As a result, the number of hospitals with multidisciplinary palliative care teams has increased, and we anticipate that team intervention will prove to be the most effective way of providing appropriate palliative care for terminal-stage patients.

We believe we achieved shortened stays at our hospital by building palliative care teams made up of expert caregivers with essential knowledge and skills. We have included psychiatrists who are trained in psycho-oncology; nurses who specialize in palliative care, chemotherapy, and cancer pain; and pharmacists who are able to provide guidance regarding use of medications. In addition, we have facilitated communication between patients and their families and social workers (MSC). The proven to be a very useful resource through which patients receive appropriate support when leaving the hospital. It seems that even the financial counseling provided reduces the anxiety level of both dying patients and their family members when hospital discharge is upcoming. However, we assume that individual departments will sometimes find it difficult to create such teams. The number of hospitals with experienced or newly created multidisciplinary palliative care teams is increasing, and making requests to these types of hospitals may be similarly effective. The palliative care teams at our hospital initiate palliative care for all patients, regardless of the department providing treatment. Thus, our newly established system benefits our entire patient population.

We expect the number of hospices, palliative care units, and palliative care wards to continue to increase throughout Japan, but even with continued increases in the numbers of hospitals and doctors specializing in palliative care, the need for treating physicians to take responsibility for palliative care will remain. This is particularly true for gastrointestinal surgeons, who are involved in various aspects of patient care—from diagnosis to post-surgical treat-
ment. It is essential that treating physicians acquire the knowledge and skills required for palliative care. With this acquisition, treatment options, such as alleviation of symptoms and the possibility of home care, will increase. On the basis of our experience thus far, we expect that for any medical center, the benefits of team-based palliative care, once established, will manifest within a very short time period.

**Conclusion**

We created and mobilized surgeon-led palliative care teams for treatment of cancer patients at our university acute care hospital. We found that alleviating patients’ symptoms and facilitating home treatment in this specialized manner shortened the hospital stay of terminal-stage patients. The patient benefits were evident within a short period of time after institution of the team care approach.

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