

Symptoms and care of dying elderly patients in an acute hospital

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ABSTRACT

Introduction: We aimed to study the symptoms and the care of elderly patients dying in an acute hospital in Singapore.

Methods: Over a one year period, we retrospectively studied all patients admitted to the Department of Geriatric Medicine and all other patients aged more than 75 years old who were admitted and died during the same admission to all other units in an acute hospital. There were 189 such patients. Demographical data, information on the patients' background and prevailing medical problems, symptoms, intervention and treatment methods were obtained from the patients' medical records and analysed.

Results: The patients were frail and old. 17 percent had bedsores and 20 percent had limb contractures noted at the point of admission. 20 percent had known terminal disease. 88 percent of the deaths were expected and 12 percent unexpected. In spite of the deaths being anticipated, 25 percent of them were subjected to cardiopulmonary resuscitation and 17 percent were intubated at the point of collapse. The majority (81 percent) of relatives of the 160 patients whose deaths were anticipated and had family had no acceptance problems. 52 (31 percent) of the 167 expected deaths had input from palliative care. These patients were more dependent, (p-value equals 0.018; odds ratio [OR] = 2.5; 95 percent confidence interval [CI] 1.2-5.2), less likely to undergo resuscitation (p-value is less than 0.001; OR = 0.16; 95 percent CI, 0.06-0.44), and were more likely to be on treatment for their symptoms (p-value is equal to 0.001; OR = 7.7; 95 percent CI, 2.1-28.8).

Conclusion: The common symptoms experienced by the elderly at the end of life are difficulty with breathing, fever, pain and respiratory secretions. A number of patients were not on any treatment for these problems though the proportion is less where there is palliative input.

Keywords: aged patients, dying patients, palliative care, terminally ill patients

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INTRODUCTION

Death and dying are an integral part of life, but issues related to the needs of the dying and their families have not been examined or addressed systematically in our local context. Studies in North America, the United Kingdom and other parts of Europe have assessed some of these needs and identified certain areas of care to be improved⁽¹⁾. These areas include good symptom control, recognition of impending death, supporting relatives, a care plan consistent with the patient's and families' wishes, and bereavement care. Dying is an inevitable event that comes to all, and is expected to be managed increasingly in hospitals. This trend is a result of Singapore's ageing population and a shift of end-of-life care from the home to hospitals.

Appropriate care of the dying elderly requires a holistic and realistic management plan for them and their families in this sentinel period of stress and opportunity⁽²⁻⁵⁾. Standards of care that has been highlighted include multidisciplinary and holistic care with symptom control based on the best evidence available, sensitive psychological and spiritual support consistent with the patient's and families' culture and wishes, regularly reviewed⁽⁶⁾. In this study, we describe the profile of the elderly admitted to an acute hospital with death as the eventual outcome, the common symptoms they suffered from, and current management methods. We also examine if palliative care input made a difference in their care.

METHODS

We conducted a retrospective study of all patients who died in an acute hospital in Singapore between 1 January 2001 and 31 December 2001. Patients who died under the care of the department of geriatric medicine and all other patients aged more than 75 years old who died in all the other departments

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Table I. Baseline characteristics of the 189 patients.

Variable	Age (in years)			
	<74	75-84	85-94	>95
Gender				
Male	3	66	26	3
Female	1	39	43	8
Diseases				
Dementia	4	43	36	6
Coronary artery disease	1	44	24	4
Cerebrovascular disease	3	48	26	3
Chronic obstructive pulmonary disease	0	24	16	2
Parkinson's disease	0	7	1	0
Chronic renal failure	0	14	13	2
Psychotic disease	1	6	4	0
Depression	2	21	6	0
Cancer	1	16	5	2
Functional status				
Fully independent	0	44	21	2
Partially dependent	0	23	21	3
Totally dependent	4	35	26	6
Residence				
Own home	4	80	55	7
Nursing home	0	20	12	4
Community hospital	0	2	0	0
IMH	0	3	2	0

IMH = Institute of Mental Health

were entered into the study. A single observer studied their case notes and charts. Definitions and terms were standardised, based on consensus of the team and current literature. Resuscitation was defined as manual ventilation and external chest compressions, with or without intubation at the point of collapse. Expected death was defined as documentation in the case notes that death was considered a reasonable outcome despite further treatment due to the presence of severe illness, and medical staff or family alerted for this eventuality.

Premorbid functional status was assessed based on the amount of help or supervision they required with four basic activities of daily living, namely: bathing, eating, dressing and toileting. They were classified as "independent" if they did not require any supervision or help, "partially dependent" if they required any supervision or help and "totally dependent" if they were unable to assist in their own care. For patients whose hospital stay exceeded 30 days, symptoms were gathered from the final

30 days of life. A box plot was used to trim off outliers for the length of stay and the cut-off coincided at 30 days. The nearest outlier identified using the box plot was 31 days which corresponded to the 90th percentile. All symptoms were taken into account for those whose length of stay was less than 30 days.

Palliative input was classified as being present if there was documentation of a palliative care team consult or a palliative approach to management. Palliative care approach was defined as a written aim for comfort care, the use of a subcutaneous infusion or drugs given specifically for symptom control solely with no curative intent.

Information was obtained from the case records on symptoms of pain, difficulty in breathing, troubling respiratory secretions, depression, vomiting, agitation, confusion, presence of wounds and bedsores, demographical profile, background and active medical problems, premorbid functional status, treatment interventions with regard to medications, invasive lines and resuscitation decisions, and details with regard to communication with relatives and resuscitation status. The case records scrutinised included the doctor's, nurses' and therapist's notes and numerous charts and scales, such as the Braden scale⁽⁷⁾, turning chart, behaviour chart and fluid balance chart.

All analyses were carried out using the Statistical Package for Social Sciences (SPSS) for Windows software version 11.0 (Chicago, IL, USA). Frequencies with percentages were presented for the occurrences of events. The association between two quantitative variables was assessed by Pearson's correlation when normality assumptions were satisfied; otherwise, Spearman's correlation was applied. Association between two categorical variables was determined by chi-square or Fisher's exact test, with odds ratios (OR) and 95% confidence intervals (CI) presented where applicable. A value of $p < 0.05$ was considered to be statistically significant.

RESULTS

A total of 189 case records were analysed. The mean age of the patients was 84 years (range 70 to 102 years) (Table I). Gender distribution was equal. Men were younger, with 69 (70%) of them being younger than 85 years compared to 40 (44%) of women. 167 patients (88.4%) were Chinese, 17 (9.0%) were Malays, one (0.5%) was Indian, and four (2.1%) were from other races. The majority (77%) were from their own homes, but 19% were from nursing homes. A small number (1%) were transfers from community hospitals, and 3% were transfers from a psychiatric hospital.

Table II. List of pre-existing medical problems.

Medical problems	Number of patients (%)
Dementia	89 (47%)
Hypertension	82 (43%)
Cerebrovascular disease	80 (42%)
Ischaemic heart disease	73 (39%)
Chronic obstructive pulmonary disease	42 (22%)
Depression	29 (15%)
Terminal disease	32 (17%)

Table III. Common symptoms in the dying elderly.

Symptom	Number of patients (%)
Difficulty with breathing	111 (59%)
Fever	88 (47%)
Pain	58 (31%)
Respiratory secretions	28 (15%)
Vomiting	20 (11%)
Confusion	17 (9%)
Agitation	11 (6%)
Smelly wounds	16 (9%)
Depression	13 (7%)

The number of co-morbid conditions ranged from zero to eight, with the majority (82%) having between one to four chronic diseases. The most common co-morbidity was dementia, followed by other common chronic diseases, such as hypertension, cerebrovascular disease, ischaemic heart disease, and chronic obstructive lung disease (Table II). 29 patients (15%) suffered from depression, 32 (17%) had bedsores, and 37 (20%) had contractures prior to admission. Of 32 patients (17%) with terminal diseases, 24 (13%) were suffering from terminal cancer, four (2%) from end-stage lung disease, two (1%) from end-stage renal failure, one (0.5%) from advanced liver cirrhosis, and one (0.5%) from end-stage dilated cardiomyopathy. 67 patients (35%) patients were independent, 47 (25%) were partially independent, and 71 (38%) were totally dependent.

The symptoms of the patients are listed in Table III. 72 patients (38%) were comatose near the end of life. Of the 117 patients who were not comatose, 13 (11%) were noted to be depressed. The mean number of drugs the patients were on at the time of death was four (range 0 to 13). Of the 58 who experienced pain, 25 (43%) were on paracetamol, 34 (59%) were on opioids, two (3%) were on non-

steroidal anti-inflammatory agents, and 18 (31%) not on any of the above. All 12 patients who had pain and received palliative input were on treatment for pain.

88 patients had fever, one-half of whom were on antipyretics or non-steroidal anti-inflammatory agents. Palliative input was associated with a higher likelihood of treatment ($p=0.001$; OR=7.7; 95% CI, 2.1-28.8). Of the 28 patients with troubling respiratory secretions, eight were on medication to reduce secretions and all had palliative input. A higher proportion (60%) of patients with difficulty in breathing were given opioids when there was palliative input, compared to when there was none (40%) ($p<0.001$; OR=3.0; 95% CI, 2.0-4.5).

Of the total number of deaths, 167 (88%) were expected and 22 (12%) were unexpected sudden collapses. We analysed the treatment modalities of the 167 patients whose deaths were expected, and found that the routes of medication were oral in 93 (56%), intravenous in 160 (96%), intramuscular in 13 (8%) and subcutaneous in 16 (10%) patients. 18 patients (11%) continued to have central venous lines. Oral treatment was given via nasogastric tube in 77 patients (46%) and through a percutaneous gastrostomy tube in six patients (4%). 42 patients (25%) whose deaths were expected underwent cardiopulmonary resuscitation and 29 (17%) were intubated at the point of collapse.

Seven patients had no relatives. Of the remaining 160 patients, 155 (97%) had documented communication to relatives regarding the patient's expected demise. 125 (81%) families were documented as accepting, eight (5%) expressed difficulty with acceptance and there was no documentation in the remaining 22 (14%). The median length of stay was seven days with a mean of 12.2 days (range one to 71 days). Removing the outliers, 90% (170) of the patients' stay was within 30 days. No correlation was found between age ($p=0.39$), dependency level ($p=0.65$), or the number of medical problems ($p=0.06$) and length of stay.

Of those whose deaths were expected, 52 patients (31.1%) had palliative care input. These were patients who were more dependent ($p=0.018$; OR=2.5; 95% CI, 1.2-5.2). There was no significant correlation with age and referral to the palliative care service. Palliative input was associated with a lower likelihood of resuscitation at the point of collapse ($p<0.001$; OR=6.1; 95% CI, 2.3-16.4) and an increased trend to be on symptom control for pain, fever, breathlessness and troubling respiratory secretions (Table IV).

Table IV. List of palliative care referrals.

	Referred to palliative care (n=52)	Not referred to palliative care (n=137)	
Age (in years)			
<74	1	3	p=0.552
75-84	31	74	
85-94	19	50	
>95	1	10	
Dependency level*			
Independent	11 (21.6%)	52 (40.3%)	p=0.018
Partially independent	12 (23.5%)	34 (26.4%)	
Totally dependent	28 (54.9%)	43 (33.3%)	
CPR at point of collapse	5 (9.6%)	54 (39.4%)	p<0.001
Symptoms on treatment			
Pain	12/12 (100%)	28/46 (60.9%)	
Fever	20/31 (64.5%)	24/ 57 (42.1%)	
Breathlessness	30/37(81.1%)	20/74 (27.0%)	
Troubling respiratory secretions	8/15 (53.3%)	0/13 (0%)	

* Insufficient documentation to conclude dependency status in 1 in the group referred to palliative care and 8 in the group not referred.

DISCUSSION

The 21st century has seen medical practice being focused on curative care, which has improved tremendously with the advent of antibiotics and improved surgical care. Palliative care involving the control of symptoms has diminished in importance until the start of the hospice movement in the late 1960s and 1970s⁽⁸⁾. The hospice movement has so far focused on oncology patients and only more recently on patients with non-malignant progressive diseases⁽⁹⁾, with an emphasis on active total care of the patient, encompassing holistic care including spiritual, social and psychological aspects⁽¹⁰⁾. While this approach has gained acceptance in patients with terminal diseases, it can also be concurrently applied to patients with reversible and curable conditions, with active measures aimed at cure.

An integrated care pathway for the dying is being implemented across the United Kingdom^(10,11). The elderly forms a special group of patients who are approaching the end of life, with or without a known "terminal" disease⁽²⁾. As with palliative principles, active care for reversible medical problems need to be carried out meticulously, yet this needs to be balanced with the burden of treatment and the likely benefits that it will confer⁽¹²⁾. Treatment that is often aimed at prolonging life persists in the face of futility at the expense of the patient's discomfort and raises

expectations unnecessarily. In this setting, palliation of symptoms and care that takes into account the quality of life should be borne in mind. To achieve holistic care for the elderly, this approach may provide the balanced care that is best for these patients. It is with this in mind that we focus our attention on the common treatable symptoms of this group of patients at the end of life who, despite active total care, died.

It is noted that these symptoms are similar to that experienced by patients dying from terminal cancers, and it is known that symptoms converge near the end of life⁽¹⁴⁾. A lower proportion (67%) of patients dying from non-cancer diseases experience pain compared to cancer patients (87%), though there are still high proportions of patients who experienced respiratory problems (49%), and nausea and vomiting (27%)⁽¹⁵⁾. Our figures compare unfavourably to the HELP⁽¹⁶⁾ trial in which patients older than 80 years were evaluated retrospectively in their last six months of life, and it was found that only a quarter suffered pain before they died.

As in all retrospective studies utilising case records, this study is limited by possible incomplete documentation. It is likely that this study has underestimated the true prevalence of symptoms as the information gathered is dependent on the staff's degree of attention to symptoms, and whether these were documented. This is a complete capture of all geriatric inpatients who died in the hospital in the year 2001 as it is based on medical and mortality records. However, the numbers were low and cannot be extrapolated to all dying older people. A larger study, perhaps involving several larger centres or even those being cared for in the community, should be carried out for results to be more applicable to our local population. To improve detection of symptoms and needs, an independent observer may be needed.

The racial distribution of these patients does not follow the country's racial demographics. Chinese were over-represented, compared to Malays and Indians. This may reflect different racial beliefs in end-of-life care for the elderly, leading to a lower rate of hospital admissions, a different racial distribution in the older than 75 year age group, or a different distribution in the hospital's catchment area. That the majority of older patients are women reflect the known longevity of the females over males. In our study, there were no significant differences in the number of medical problems between the genders.

Our study population was clearly frail, as evidenced by the high prevalence of pre-existing contractures, bedsores and the dependency level.

There were a number of patients with symptoms that could be easily treated, but were not on any treatment. Palliative care input appeared to have contributed to an increase in the treatment of symptoms and avoidance of futile cardiopulmonary resuscitation during collapse. This may reflect better attention to symptom care by palliative physicians or by the referring physician. The withholding of cardiopulmonary resuscitation may reflect greater awareness of its futility in this group. The majority of the relatives appeared to accept the demise of their loved ones well with few documented problems. Further studies may need to be conducted to look into communication with the families with regard to their needs and wishes, which this study did not address.

In conclusion, the common symptoms associated with end-of-life care in the elderly are difficulty with breathing, fever, pain and troubling respiratory secretions. These are similar to end-of life symptoms in cancer and non-cancer terminal conditions⁽¹²⁾. A number of patients were not on any treatment for these problems and the proportion is lower where there is palliative input. Palliative medicine may have a role to play in managing distressing symptoms in the terminally ill older patient, especially in the setting of an acute care hospital, where the emphasis is mostly on saving lives, even in the face of futility.

REFERENCES

1. Lynn J, Teno JM, Phillips RS, Wu AW, Desbiens N, Harrold J, et al. Perceptions by family members of the dying experience of older and seriously ill patients. SUPPORT investigators. Study to understand prognoses and preferences for outcomes and risks of treatments. *Ann Intern Med* 1997; 126:97-106.
2. Dunstan E. ... and a time to die: the medicine of old age. *Br Med Bull* 1996; 52:255-62.
3. Keay TJ, Taler GA, Fredman L, Levenson SA. Assessing medical care of dying residents in nursing homes. *Am J Med Qual* 1997; 12:151-6.
4. The SUPPORT principal Investigators. A controlled trial to improve care for seriously ill hospitalized patients: the study to understand prognoses and preferences for outcomes and risks of treatments (SUPPORT). *JAMA* 1995; 274:1591-8.
5. Byock IR. The nature of suffering and the nature of opportunity at the end of life. *Clin Geriatr Med* 1996; 12:237-52.
6. Standards for palliative care provision. *Palliative Care Australia*. 3rd ed. Oct 1999.
7. Bergstrom N, Braden BJ, Laguzza A, Holman V. The Braden Scale for predicting pressure sore risk. *Nurs Res* 1987; 36:205-10
8. Doyle D, Hanks G, McDonald N. *Oxford Textbook of Palliative Care*. 2nd ed. Oxford: Oxford University Press, 1998.
9. Higginson IJ. *Healthcare Needs Assessment: Palliative and Terminal Care*. Winchester: Wessex Institute of Public Health Medicine, 1995.
10. Ellershaw J, Foster A, Murphy D, Shea T, Overill S. Developing an integrated care pathway for the dying patient. *Eur J Pall Care* 1997; 4:203-7.
11. Ellershaw J, Smith C, Overill S, Walker SE, Aldridge J. Care of the dying: setting standards for symptom control in the last 48 hours of life. *J Pain Symptom Management* 2001; 21:12-7.
12. World Health Organization. *Cancer Pain Relief and Palliative Care*. Technical Report Series 804. Geneva: World Health Organization, 1990.
13. Ross MM. Palliative care. An integral part of life's end. *Can Nurse* 1998; 94:28-31.
14. Kinzbrunner BM, Weinreb NJ, Policzer JS. *Twenty Common Problems in End-of-Life Care*. United States of America: McGraw-Hill, 2002.
15. Lynn J. Measuring quality of care at the end of life: a statement of principles. *J Am Geriatr Soc* 1997; 45:526-7.
16. Somogyi-Zalud E, Zhong Z, Lynn J, Hamel MB. Elderly persons' last six months of life: findings from the hospitalized elderly longitudinal project. *J Am Geriatric Soc* 2000; 48 (suppl):S131-9.