

高齢者のターミナルケア

End of life care for the elderly



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◎遠からず“死”が避けられない状態となり患者の身体的苦痛・精神的苦痛の除去が医療の主眼となるとき、これを“ターミナルケア”とよぶ。“ターミナルケア”の目的は、苦痛・苦悩の緩和により患者のQOLを維持・向上することにある。高齢者の“ターミナルケア”の特徴を考えるということは、高齢者に特徴的な“終末期”に対する適切なケアのあり方を考えるということである。高齢者の“終末期”に対しては特徴的なケアがありうるということではない。



ターミナルケア, 高齢者, 終末期の定義, 自己決定

高齢者における終末期とは

“不治”かつ“末期”の状態が“終末期”と定義されるが、“不治”, すなわち非可逆的進行性の疾患に対して根治が不可能な状態は医学的に定義しやすい。一方、“末期”という用語は時間概念を含み、一般的に定義が困難である。現在罹患している疾患で遠からず死亡すると認められた時点から“終末期”ということができるとは、時間的にはおおよそ6カ月かそれ以内とすることが多い¹⁾。

以上が一般的な“終末期”の定義であるが、これはおおよそ非高齢者の悪性腫瘍を想定してのものであり、高齢者の場合は具体的定義がさらに困難でいまだ確立されたものはない。このことを受けて現在、終末期ケア、とくに高齢者の終末期ケアに関してはターミナルケアという用語を使用せず、“End-of-life Care(エンドオブライフケア)”という表現を使用することもある。さらには日本老年医学会は終末期の定義から時間概念を省略し、「病状が不可逆的かつ進行性で、その時代に可能な最善の治療により病状の好転や進行の阻止が期待できなくなり、近い将来の死が不可避となった状

態」と“終末期”を定義した(表1)²⁾。本稿では表題のようにターミナルケアという用語を使用する。

高齢者のターミナルケアの特徴

1. 高齢者の悪性腫瘍の場合

悪性腫瘍に対するあらゆる根治療法(手術, 放射線, 化学療法)が無効で、放置すれば“死”に至る状態となった時点“終末期”とすれば、これを判断することは困難ではない。しかし、高齢者の場合は悪性腫瘍の進行速度が非常に緩やかで“終末期”が6カ月を優に超える場合も珍しくない。また、経過が長くなれば、この間に肺炎や心不全、脳卒中など他の急性疾患に罹患し死亡することも多くなり、“死”に至る過程を予測することは非高齢者よりもかなり困難である。

2. 慢性疾患での“終末期”

透析療法が拒否された末期の腎不全、慢性閉塞性肺疾患、治療に不応性の重症心不全、高齢がゆえに手術不能な脳出血やくも膜下出血などが該当する。末期の腎不全や致死的な脳出血の場合は予後(余命)の判断は比較的容易であるが、慢性の心

表 1 日本老年医学会による“終末期”の定義

“立場表明”を出す目的

わが国に生活するすべての人は人生の最終局面である“死”を迎える際に、個々の価値観や思想・信仰を十分に尊重した最善の医療を受ける権利を有する。最善の医療とは単に医学的な知識・技術のみではなく、他の自然科学や人文・社会科学を含めたこの国のすべての知的・文化的成果を還元した医療であると思われる。日本老年医学会はすべての人がこの権利を有すると考え、この権利を擁護・推進する目的で“高齢者の終末期の医療およびケア”に関する日本老年医学会の“立場表明”を表明する。

“立場表明”における定義

“立場表明”で述べる“終末期”とは、「病状が不可逆かつ進行性で、その時代に可能な最善の治療により病状の好転や進行の阻止が期待できなくなり、近い将来の死が不可避となった状態」とする。

〔論拠〕高齢者は“終末期”にあると判断されても、わが国では余命を予測するための医学的成績の集積が現状では不十分であり、余命の予測が困難であるため、“終末期”の定義に具体的な期間の規定を設けなかった。

“高齢者の終末期”の定義に関しては現在ではこのような曖昧なものであるが、“悪性腫瘍の終末期”、“脳卒中の終末期”、“痴呆疾患の終末期”、“呼吸不全の終末期”など、高齢者に多く不可逆的・進行性の過程をたどることの多い個別疾患ごとの検討が日本老年医学会の今後の課題となるであろう。

また、高齢者が心身ともに個別性が高いことから年齢規定が不適切だと思われるので、“高齢者”に関して暦年齢による規定を行わなかった。

肺疾患の場合は確実に“死”に向かいながらもこの間に急性代償不全のエピソードを繰り返していくが、どのエピソードも高齢者には潜在的に致死性であるので、正確な“死期”の判断は非常に難しい。

3. いわゆる老衰死

脳卒中などの疾患を契機に徐々に精神・身体機能が低下・衰弱して全身介助状態に至り、肺炎や心不全を引き起こしながら最終的に“死”に至る例がある。この経過は全体としてみれば特定の疾患や臓器不全によるものというより個体全体の“老化”の結果というべきものである。寝たきり・全面介助状態に至ると、患者の“人権”や“尊厳”が脅かされる可能性が高くなるので、この状態に至った“老衰”は“終末期”に準じて考えるべきだとの主張が存在する³⁾。この場合も期間としては6カ月を超えることが少ない。

このような“老衰”の過程で生じる“摂食不能”を放置すれば“死”に至るが、この“老衰死”は“脱水死”であり、通常苦しみは少なく、死亡までの期間も短く、治療による苦痛もない、ある意味で受け入れやすい死に方といえる。ヨーロッパ諸国ではこのような場合に人工栄養を施さないで安らかに“死なす”ことが社会的合意となっているようである⁴⁾。しかし、わが国ではこのような場合に補液な

どの医療処置を施さない例はきわめて少ない。それは、ひとつにはこの場合の“摂食不能”が“不可逆的”であると判断することが困難だからである。“老衰”の経過中に生じる“摂食不能”は肺炎などの急性疾患が原因のことが多く、これを治療すれば摂食可能となる場合が少なくないからである⁴⁾。

もうひとつ大事な点は、ヨーロッパ諸国と異なり日本ではこのような場合の医療措置に対する国民的合意が成立していないことである。一般国民を対象にしたアンケートによれば、たとえ植物状態に陥ったとしても人工栄養などの延命処置を希望するものが少数ながら存在し、しかも高齢者ほどその比率が増加する⁵⁾。医療における“自己決定権”の行使が、慣習としても制度としても成熟しているとはいえない日本社会においては、“老衰”の過程での“終末期”の判断は非常に難しい。

4. 痴呆の“終末期”

痴呆が高度になると身体活動は著しく低下し摂食量も減少する。他者とのコミュニケーションもなくなり、食事も受け付けなくなり、最終的には“老衰”の末期と同様の状態に至る。かりに全面介助状態になった時点からを“終末期”とすれば、この場合も6カ月を超えることは珍しくない。

以上述べたように、“ターミナルケア”、とくに

高齢者のそれを正確に定義するには非常な困難を伴い、具体的に確立されたあり方は皆無といってもよい。このような観点から、高齢者終末期医療のあり方を提言したアメリカ老年医学会は、“終末期”患者の代りに“死にゆく人びと (dying patient)”という用語を用いている⁶⁾。

ターミナルケアとは

遠からず“死”が避けられない状態となり患者の身体的苦痛・精神的苦痛の除去が医療の主眼となると、これを“ターミナルケア”とよぶ。“ターミナルケア”の目的は苦痛・苦悩の緩和により患者のQOLを維持・向上することにある。だからといって“終末期”に発生した治癒可能な急性疾患をすべて放置することではない。治療すればふたたび苦痛のない時間がある程度予測されるならば、当然に治療されねばならない。

“ターミナルケア”においてQOLの視点はとくに重要である。残された時間をどのような状態で過ごすことが有意義であるかは、患者個々の価値観によるところが大きい。患者の選択が保障されるためには適切なインフォームドコンセントが必要がある。そのうえで何の束縛もない自由意思で下されるのが“自己決定”である。

高齢者の“ターミナルケア”とは

高齢者の“ターミナルケア”の特徴を考えると、高齢者に特徴的な“終末期”に対する適切な医療のあり方を考えるということである⁶⁾。高齢者の“終末期”に対しては特徴的な医療がありうるということではない。この点を軽率に誤解すると、高齢者は予想される余命が短いので、非高齢者の“終末期”とは質的に異なる医療が許される、という誤りを冒す危険がある。これはエイジズム(年齢による差別)とよばれ、最近過少医療の問題として取り上げられることがある。適切な医療により救われる可能性がある高齢者が、“高齢”であるという理由で放置されてよいはずがない。

“ターミナルケア”における死の迎え方の自己決定

さきほどもすこし触れたが、患者が自己決定を

する場合には、決定するために必要な事柄についての知識を事前に求めて、よく理解していることが前提となる。わが国ではこの前提条件が満足させられていなかったり、自己決定をするべき本人自身以外の者が決定してしまうことが少なくない。たとえ患者の病気が悪性腫瘍の末期と診断された場合でも、患者本人が自分が受けたいと思う治療法を選択するためには、医師がその患者に、患者の病状ばかりでなく、いろいろの治療法の内容や、それぞれの治療法の効果や副作用などの危険性を比較できるようにわかりやすく説明をする必要がある。そうでないと患者はどの治療法を選択することができない。そのうえでその治療を医師が自分に実施することについての同意を医師に与えることもできない。この手続きがとられなければ、インフォームドコンセントは実施できない⁷⁾。ただこの前提を維持することが、実は高齢者の終末期においては困難なことが多い。前に述べたように慢性疾患の“終末期”、“老衰死”、そして痴呆の“終末期”などにおいては、患者本人の自由意志を確認することが事実上不可能なのである。そのため、患者の死の迎え方について事前の自己決定の問題が最近一般にも注目されつつある。

1. リビングウィル

アメリカでは1976年に“カリフォルニア州自然死法”が制定されて「成人が末期状態になったときに、生命維持装置を中止するか取り外すように医師に対して文書をもって指示する書面を作成する権利をカリフォルニア州民に認める」と定めた。リビングウィルとよばれるこの文書を書いておく権利を認める法律を世界ではじめて法制化したのである。その後、アメリカでは1991年PSDAによって連邦法でも同様の権利を認め、全米で同様の権利が認められた⁸⁾。ただしわが国では法制化されていない。

2. 心肺蘇生拒否の指示

脳死状態の際に心肺蘇生術を拒否する指示をもって医師にしておく、医師は患者の診療記録簿の表面に“DNR order”(do not resuscitate order: 心肺蘇生術拒否指示)と表記し、その指示に従うことで、患者の心肺蘇生拒否の意思が保障される。わが国では法制化されていない。

表 2 尊厳死の宣言書(リビングウィル; Living Will)

年月日	年	月	日
<p>私は、私の傷病が不治であり、かつ死が迫っている場合に備えて、私の家族、縁者ならびに私の医療に携わっている方々につきの要望を宣言いたします。</p> <p>この宣言書は、私の精神が健全な状態にある時に書いたものであります。</p> <p>したがって、私の精神が健全な状態にある時に私自身が破棄するか、または撤回する旨の文書を作成しないかぎり有効であります。</p> <p>(1) 私の傷病が、現在の医学では不治の状態であり、既に死期が迫っていると診断された場合には徒に死期を引き延ばすための延命措置は一切おことわりいたします。</p> <p>(2) 但しこの場合、私の苦痛を和らげる処置は最大限に実施して下さい。そのため、たとえば麻薬などの副作用で死ぬ時期が早まったとしても、一向にかまいません。</p> <p>(3) 私が数カ月以上に涉って、いわゆる植物状態に陥った時は、一切の生命維持措置をとりやめて下さい。</p> <p>以上、私の宣言による要望を忠実に果たして下さいの方々に深く感謝申し上げますとともに、その方々が私の要望に従って下さった行為一切の責任は私自身にあることを附記いたします。</p> <p style="text-align: center;">年 月 日</p>			

3. 終末期医療の中止

終末期に患者の原因疾患の治療をしても病気が治癒するわけでもなく、また病状が軽快するわけでもない。場合によってはその治療がかえって苦痛を与えたり体力を消耗させたりして患者にとってプラスにならない場合がある。そのような治療を患者が自らの希望で中止することで、いたずらに延命治療を受けずに自らの意思で自然死を迎えたいとする社会的な動きがある。これらを“尊厳死”とよんだりするが、わが国では法制化されていない。日本尊厳死協会が独自の“尊厳死宣言書”を発行し(表2)、その法制化に向けて活動を行っている。その会員数は10万人を超えているが、その解釈に関しては主治医と大きな認識の違いがあることが明らかになっている⁹⁾。つまり患者である宣言書保有者が主治医にその宣言書をみせても、主治医側が患者の意図を認識しない場合が散見されるのである。その原因のひとつに、“終末期の定義が困難であること”があげられているのである⁹⁾。今後、われわれ実地医家も、“尊厳死宣言書”なる文書を患者に提出され、その扱いに思慮深さが要求されることもあろう。

高齢者のターミナルケアの今後の課題

急速に超高齢社会に移行していくであろうわが国であるが、その1年間の死亡者数は今後増加の一途をたどることになる。1990年代は死亡者数が90万人台で推移したのが2000年代に入り100万人を超えるようになってきている。いまから35年後の2039年には死亡者数がおよそ170万人になる。65歳未満の死亡者数は20万人当りでありあまり変動がないとの予測があり、死亡者の増加は高齢者の死亡者の増加と言い換えることができるのである。つまり21世紀は“高齢者のターミナルケア”の時代が到来する世紀なのである。

今後増加する高齢者の死亡者の増加は、わが国の病院での死亡者の割合の変化に決定的な変化を与える可能性がある。つまり病院で死亡することのできない高齢者が出現する可能性があり、その可能性に対して何らかの備えをする必要があるであろう。また、高齢者やその家族のなかには自宅や高齢者施設での看取りに関心を持ったり、“患者の自己決定”の浸透により自らの死に場所を自分で選択する高齢者も増加していくであろう。その際に彼らは自分の死に場所として病院を選択せ

ず、自宅や高齢者介護施設を選択することも十分ありうるのである。

そこでわれわれが考えなければならないのが“高齢者介護施設でのターミナルケア”および“在宅でのターミナルケア”である。わが国はそれらの場所での“終末期ケア”の経験にきわめて乏しいのである。

“高齢者介護施設でのターミナルケア”や“在宅でのターミナルケア”のあり方というのは、“高齢者のターミナルケア”を解説することよりさらに困難である。その経験の乏しさは知識の集積の欠如をもたらしている。過去に、それらの場所における“ターミナルケア”の実情を詳らかにした調査研究もほとんどないのである。今後、老年医学を専門にしている医師にとって、これらの問題は重要なものとなるであろう。

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ORIGINAL ARTICLE

Long-term prognosis and satisfaction after percutaneous endoscopic gastrostomy in a general hospital*

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Background: Percutaneous endoscopic gastrostomy (PEG) has been widely acknowledged as a safer method for enteral feeding; however, its long-term impact on prognosis and quality of life in elderly patients is not sufficiently understood. There are issues still to be studied regarding the indications for PEG, due to the lack of convincing evidence that it reduces expected complications such as aspiration pneumonia or for improving the prognosis of patients with severe dementia.

Method: In this study we investigated the survival rate after PEG and the families' satisfaction in 78 inpatients who underwent PEG. We conducted the investigation by sending questionnaires to the families.

Results: The results for the 69 cases (88%) in which the patient recovered showed that the 1-year survival rate was 64.0%, and the 2-year survival rate was 55.5%. Fifty-three per cent of patients' families indicated overall satisfaction regarding of PEG.

Conclusions: The survival rates were relatively higher than those from previously reported studies. This may be attributed to variations in patients' clinical, socio-economic, or cultural backgrounds in therapeutic interventions. We recognized the importance of clarifying factors that would affect the living and functional prognosis and quality of life in elderly patients who underwent PEG. The indications for PEG are based on a comprehensive assessment of the relevant factors in individual cases, and by taking patients' and families' wishes into consideration.

Keywords: gastrostomy, personal satisfaction, survival rate.

Introduction

Recently, as the technique of enteral nutrition has developed, it has helped patients with dysphagia caused by stroke, neurological degenerative disorders etc., to sur-

vive longer. Percutaneous endoscopic gastrostomy (PEG) is a widely-used method for introducing a gastrostomy tube to enable enteral feeding in patients who are unable to eat. Since it was first described by Gauderer *et al.* in 1980,¹ PEG has spread widely and rapidly, including in Japan. The operation is comparatively safe and once successfully performed, nutrition can be administered in a reliable way. Although many reports regarding the utility of PEG have been published, some studies have indicated that PEG did not reduce the risk of aspiration pneumonia and did not improve the life expectancy of patients with high cognitive disorders. Because PEG is an invasive therapy, physicians should consider the risks and benefits of the operation carefully

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and should confer with the patient and the patient's family, giving them adequate information before obtaining their agreement to the operation.

Although the short-term benefits have been well documented, the long-term survival rate is still unclear. In the present study we investigated the long-term survival rate and the families' satisfaction after PEG retrospectively in a general hospital.

Materials and methods

The data were collected in Anjo-Kosei Hospital, which is a key general hospital in the west Mikawa area. The hospital has 680 beds, and is mainly used for the treatment of acute diseases. We collected data retrospectively from patients who underwent PEG from February 1998 to August 2000. The questionnaire was sent to patients or their families in February 2001. The shortest period of follow-up for the dead cases and survivors, were 4 days and 157 days respectively. The longest period of follow-up was 1078 days among survivors. The questionnaire consisted of five questions: (i) Is the patient alive or dead? (ii) (If the patient is already dead) When did the patient die? (iii) Was the patient admitted to the hospital because of pneumonia after PEG? (iv) Are family satisfied with PEG placement? (v) Who is the main caregiver?

In all cases, PEG ($n = 78$) was performed on patients who were unable to eat due to dysphagia or highly cognitive impairment. In every patient, PEG was inserted by a pull-through method, using the BARD Fastrack PEG kit (Medicone Inc., Osaka). A complete esophagogastroduodenoscopy was performed with PEG in each patient. The point at which to perform gastrotomy was chosen by finger-pushing and transillumination of the abdominal wall, and confirmed by X-ray.

Statistical analysis was performed by using Statview (SAS Inc., Cary, NC). The non-parametric data were analyzed by the Mann-Whitney test for more than two groups, and by Fisher's exact test between two groups. Survival rates were analyzed by Kaplan-Meier's survival curve, and differences between the groups in survival curves were assessed with the log-rank test.

Results

We received 69 replies out of 78 questionnaires (88%). All of the 69 answered the question as to whether the patient was alive or dead, with 40 patients still alive and 29 patients dead. We learned from their charts that three of the nine patients who did not reply were alive and five were dead, but one had no follow up information whatever. The mean age of the patients when PEGs were performed was 75.7 ± 14.1 (mean \pm SD) years.

In the present study, the most common disease leading to the performance of PEG was cerebrovascular dis-

ease. Fifty-one of 69 patients (65%) had suffered from this disease. As for the rest, there were 11 patients (14%) with neurodegenerative disorders (two with Parkinson's disease, two with amyotrophic lateral sclerosis, two with senile dementia of the Alzheimer's type, one each with olivopontocerebellar atrophy/Creutzfeldt-Jakob disease/Pick's disease/adrenoleukodystrophy, six patients (8%) with hypoxemia due to cardiac arrest or complications from heart surgery, three patients (4%) with brain tumors, two patients with (2%) malignancy, two patients (2%) with pneumonia, and three (4%) suffering from other diseases (polymyositis/dermatomyositis, renal failure, Down's disease). In two cases, the patient suffered from peritonitis during the perioperative period, but in both cases the peritonitis subsided soon after the tube was withdrawn. One of these two became able to ingest food orally, while the other's nasogastric tube is still in place. Both were alive at the time of the investigation. No deaths were attributable to the PEG procedure. Three of the 78 patients died in the first 14 days.

Prognosis

The rate of survival, according to the questionnaire, was 91.3% after 30 days, 64.0% at 1 year, and 55.5% at 2 years. Figure 1 shows Kaplan-Meier's survival curve after PEG. There were no significant differences in survival rates between genders ($P = 0.764$), diseases; stroke versus non-stroke ($P = 0.604$), or the presence of pneumonia ($P = 0.430$).

We received 62 answers regarding hospitalization due to pneumonia after PEG, and among these, 17 patients (27%) had been admitted.

Satisfaction

We received 64 answers regarding the families' satisfaction after PEG. Of these 34 families (53%) answered 'yes', six families (9%) answered 'no', and 24 families (38%) answered 'cannot say yes or no.' There were no

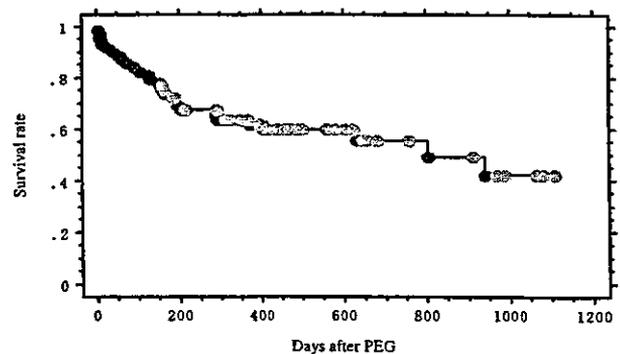


Figure 1 Kaplan-Meier's survival curve after percutaneous endoscopic gastrostomy (PEG). (●, censored (dead) cases ○, uncensored (alive) cases.)

Table 1 Summary of the literature about survival rates after percutaneous endoscopic gastrostomy (PEG)

Author	Year	Nationality	n	Age (mean ± SD)	Prior diagnoses	Treatment	1-Year survival rate (%)	2-Year survival rate (%)
Ciocon <i>et al.</i> ³	1988	USA	70	82.0	Refusal to swallow 50%, dysphagia 47%, esophageal obstruction 3%	Nasogastric tubes, Gastrostomy	60 (11 month)	NA
Taylor <i>et al.</i> ⁴	1992	USA	97	76.5 (median)	stroke 48%, other neurological disease 25%	PEG	35 (1.5 yr)	NA
Chowdhury <i>et al.</i> ⁵	1996	Australia	50	Male 50, Female 61 (median)	Neurological disease 52%	PEG	38	NA
Rabeneck <i>et al.</i> ⁶	1996	USA	7 369	68.1	Stroke 19%, other neurological disease 29%	PEG	41	29
Howard <i>et al.</i> ⁷	1997	USA	786	79.1 ± 7.6	Not described	Home enteral nutrition	45	NA
Loser <i>et al.</i> ⁸	1998	Germany	210	61.3 ± 15.3	Neurological diseases 47%, ear-nose-throat disease 29%	PEG	34	NA
Grant <i>et al.</i> ⁹	1998	USA	81 105	65-74 (25%), 75-84 (41%), 85 (33%)	Stroke 18%, neoplasms 9%, fluid and electrolyte disorders 9%	Gastrostomy	37	NA
James <i>et al.</i> ¹⁰	1998	UK	126	80 (median)	Stroke	PEG	47	NA
Fisman <i>et al.</i> ¹¹	1999	USA	175	65-74 (64%), 75-84 (18%), 85 (18%)	Stroke 36%, neoplasms 31%, pneumonia 23%	PEG	39	NA
Callahan <i>et al.</i> ¹²	2000	USA	150	78.9 ± 8.1	Stroke 41%, other neurological disease 25%, neoplasms 13%	PEG	50	NA
Verhoef <i>et al.</i> ¹³	2001	Canada	112	66.0 ± 17.9	Head injury or stroke 62%, neoplasms 17%	PEG	61	NA

significant differences in the families' satisfaction among the groups according to patients' age ($P = 0.690$), gender ($P = 0.329$), the occurrence of pneumonia ($P = 0.268$) or the patients' life or death at the time of the research ($P = 0.060$).

Discussion

Recently PEG has become more popular for patients with dysphagia. PEG is effective for preventing patients with severe dysphagia from starving; however, it is possible that some patients undergo the operation against their desire not to prolong their lives, which causes controversy over the indication of PEG.

Finucane *et al.* meta-analyzed the prognosis of patients with severe dementia after PEG, from reports completed before March 1999.² They insisted on physicians' modesty in performing PEG, as their analysis could not show a reduction in the occurrence of pneumonia or the prolongation of life after PEG. However, this study was no more than an outline, as their analysis did not consider the reasons for dementia, the degree of medication, the type of hospital or other details.

Table 1 shows the results of some leading reports showing more than a 1-year prognosis.³⁻¹³ These showed that 1-year survival rates after PEG were 34-67%. A few reports of this kind can be found in Japan. Ishimura *et al.* analyzed the data from 87 of 95 patients who underwent PEG between 1993 and 1998 in a general hospital, and they reported that the 1-year survival rate was 38.2%, and the 2-year survival rate was 22.2%.¹⁴ We sent a questionnaire to the families of patients who had undergone PEG, and we received a high response rate of 88%. Even though the subjects of the present study were old, the mean age was 75.7 years, the 1-year and 2-year survival rates were 64.0% and 55.5%, respectively, which are higher than those found in previous studies. This finding is likely related to the development of the operation technique or the kind of medicine used.

Norberg *et al.* compared the thoughts of nurses on enteral nutrition for people with severe dementia in the United States, Australia, Canada, China, Finland, Israel and Sweden.¹⁵ There were a few cultural differences in the results, as most of the nurses except those from China deemed autonomy the most important factor. Though it is unclear how the kind of medical practice may differ among these countries and Japan, it is possible that such a difference might affect the indication of PEG or the prognosis after PEG.

Additionally, we investigated the families' satisfaction after PEG. Families were asked the question 'Are you satisfied that your family underwent PEG?' and over half of the families answered 'Yes'. But among the responses there were some additional negative remarks, such as, 'it was inevitable because the patient could not

eat.' Because some families visited Anjo-Kosei Hospital in order to take treatments for themselves, we have to interpret the results carefully. In particular, it is difficult to determine the feelings of the patients after PEG because most of them are not able to communicate due to the disease. In 1996, Matsushita *et al.* asked outpatients whether they would be willing to take enteral nutrition in the case that they should become unable to eat or communicate due to severe disease.¹⁶ They reported that only 8.7% of the outpatients showed that they were willing to take enteral nutrition in such a state. Although it is not clear how many patients take enteral nutrition against their will, it is possibly not a small number. The dissociation between the rate of patients taking enteral nutrition and their willingness to accept it might be due to clinical and ethical problems or to a lack of knowledge about enteral nutrition among the patients, but there are many clinical and ethical points to be clarified, such as the effect of enteral nutrition on patients' quality of life. Just as Kanie *et al.* investigated and were able to report an improvement of the quality of life of patients after PEG,¹⁷ we should make more of an effort to clarify the effects on patients of enteral nutrition, including PEG, with a view to determining not only their prognosis of life expectancy but also their functional prognosis and their quality of life.

In conclusion, we investigated the survival rates of patients after PEG and their families' satisfaction. The 1-year and 2-year survival rates were relatively higher than those from previous studies, being 64.0% and 55.5%, respectively. Fifty-three percent of the patients' families showed overall satisfaction regarding the taking of PEG. The higher survival rates observed in this study may be attributed to variations in patients' clinical, socio-economic or cultural backgrounds in therapeutic interventions. We recognize the importance of clarifying factors that would affect the living and functional prognoses and quality of life of elderly patients who have undergone PEG. The indication for PEG can be made based on a comprehensive assessment of the relevant factors in individual cases, and by taking the patient's and the patient's family's wishes into consideration.

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Effect of long-term care insurance on communication/recording tasks for in-home nursing care services

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Abstract

The purpose of this research was to clarify the possible changes brought about by the introduction of the long-term care insurance system in terms of number of communication/recording tasks, related nursing services in use, and when and where these tasks were performed. By examining the detailed content of communication/recording tasks, this study also sought to explore the advantages of introducing information technology (IT) systems in nursing service settings. The study was designed before-and-after study in two sessions, February 2000 and August 2000, namely before and after the introduction of Japan's long-term care insurance system. Participants were clients using the institution's in-home nursing services and all staff in a medical institution located in the Mikawa region of Aichi Prefecture, Japan. Following measurements were performed: (1) nursing service in use, (2) type of job, (3) date and time, (4) from whom, (5) to whom, (6) communication tool and (7) content, related to a particular communication. Communication/recording tasks were frequently performed around the starting and closing time of services. Following the adoption of the new system, these tasks tended to occur mostly around the starting time of services. As for the staff, the involvement of the professional carers increased. Regarding content of communication/recording, reports, confirmation and instruction increased. In conclusion, the use of IT driven devices is recommended

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2. Methods

2.1. Subject and sessions of research

The subject of this research is a medical institution located in the Mikawa region of Aichi Prefecture, Japan. The institution consists of a clinic with a rehabilitation facility (Clinic), a geriatric intermediate care facility (GICF) (providing a certain amount of medical care), an In-home nursing support center, a helper's station, and a visiting care station, providing nursing services such as visiting medical care, visiting rehabilitation, rehabilitation for outpatients, visiting nutrition guidance, and short-stay services.

The research was conducted in two sessions in February 2000 and August 2000, namely before and after the nationwide introduction of the elderly care insurance system. At each session, all the communication/recording tasks that occurred in relation to nursing service provisions during a continuous 48 h were recorded.

Given the fact that no significant variation in terms of number of users on workdays was shown in a preliminary research, Tuesdays and Wednesdays were selected for both the February and August sessions.

2.2. Content of research

A fill-out-type questionnaire was designed and used for the research (see Fig. 1). The items to fill out were: (1) nursing service in use, (2) type of job, (3) date and time, (4) from whom/what, (5) to whom/what, (6) communication tools and (7) content. The entry was performed by the staff carrying out each particular communication task. A preliminary meeting was held for orientation and instruction as well as to identify any problems with the procedure. The management of the forms was conducted by off-duty staff trained in advance. They were stationed at each facility and their duty was to check and collect the forms as appropriate.

2.2.1. Category of nursing services in use

Utilized in-home nursing services in relation to specific communication tasks were categorized as follows: daycare service at clinic, daycare service at GICF, short-stay service at GICF, in-home helper service, visiting nursing, visiting nutrition guidance, visiting rehabilitation, visiting medication, and others.

2.2.2. Job type

The job types of the staff involved in communication tasks were categorized as follows: physician, nurse, pharmacist, radiological technologist, physical therapist (PT), occupational therapist (OT), trainer, professional carer, consultant, secretary, nutritionist, cook, driver, and others.

2.2.3. Date and time

The specific dates and times when communication tasks occurred were recorded.

2.2.4. From whom/what and to whom/what

When a communication event occurred, the names of the persons involved were recorded in the columns 'From' and/or 'To whom'. When information was referenced and/or recorded

in some medium such as recording forms, the type of medium was entered in the column 'To what' and/or 'From what'. Entries in the 'From/To whom' column indicate the involvement of some person categorized as family, user, staff or others. Entries in the 'From/To what' column indicate the involvement of some recording medium categorized as forms, notes, voicemail or others. Forms are any recording medium of paper such as medical records. Notes represent Notes[®], a groupware of Lotus. Groupware is any type of software designed for groups and for communication, combining various software for supporting collaboration among a group of people with functions such as email, document management and schedule management.

2.2.5. *Communication tools/media*

The communication tools/media used in communication/recording tasks were categorized as follows: message, face-to-face conversation, voicemail, Notes, Wiseman Barcode, Wiseman Keyboard, extension call, outside line call, facsimile, medical record entries, references to other forms, and others.

Wiseman Barcode[®] and Wiseman Keyboard[®] represent the utilization of the nursing information management system of Wiseman[®], making use of barcodes and keyboards, respectively, for data entry. Wiseman Barcode[®] barcodes date, treatment, person-in-charge of treatment, and vital signs, and then reads them via a reader device. Wiseman Keyboard[®] utilizes a keyboard for data input.

2.2.6. *Content*

The content of communication/recording was categorized as follows: instruction (prescription), information, report, consultation, record, confirmation and others. Information means an unofficial communication which does not require reporting or recording.

2.3. *Analysis*

The changes between the two sessions of research were analyzed in terms of number of users, number of occurrences of communication/recording tasks, and category of service in use in relation to communication/recording tasks that occurred. To eliminate the influence on the number of communication/recording tasks induced by the change in total number of users, the data of the same users (153) was analyzed in both sessions.

Further, for these 153 users, a detailed analysis was conducted for a period of time where a significant change in the number of occurrences of tasks was found.

Data analysis was performed by Statview 5.0. For testing statically significant differences, the chi-square test was utilized with $P < 0.05$ as criteria.

3. Results

3.1. *Total number of users and number of occurrences of communication/recording tasks*

Table 1 shows the total number of users and the number of occurrences of communication/recording tasks. The total number of users was 400 in February and 442 in the August

Table 3
Number of occurrences of in-home nursing service by place

Place	February (<i>N</i> = 1883)	August (<i>N</i> = 2244)	<i>P</i>
Clinic	302	464	<0.001
GICF	1263	1434	0.036
At home	143	67	<0.001
Others	172	192	0.550
Unknown	3	87	<0.001

Note: A chi square test was conducted between February and August sessions. GICF: geriatric intermediate care facility.

3.3. Time of occurrence

Fig. 2 indicates the time of occurrence of communication/recording tasks. Peaks were found in the 8:00–12:00 and 14:00–18:00 periods. Also, the number of occurrences was on the rise between February and August in the 8:00–9:00 and 10:00–11:00 periods.

3.4. Detailed analysis of 8:00–9:00 and 10:00–11:00 time periods

Regarding the communication/recording tasks that occurred in the 8:00–9:00 and 10:00–11:00 time periods, when an increase in tasks was observed, was further analysis was

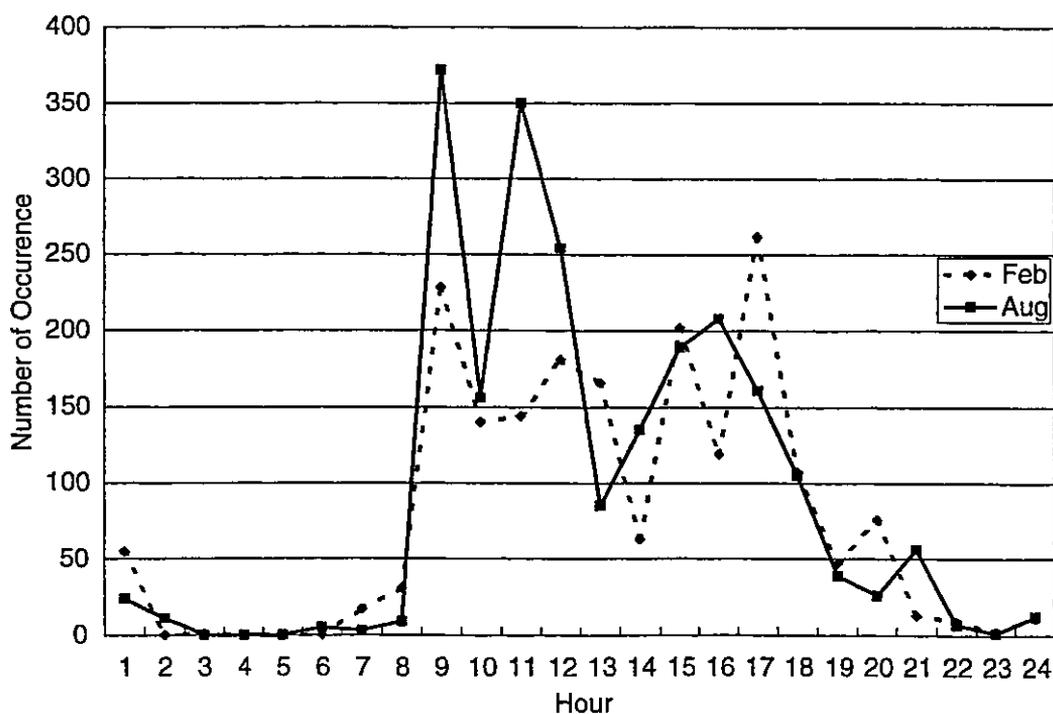


Fig. 2. Time of occurrence of communication/recording tasks. The number of occurrences was on the rise between February and August in the 8:00–9:00 and 10:00–11:00 time periods.

Table 5

Number of occurrences of communication/recording tasks during the periods of 8:00–9:00 and 10:00–11:00 by communication route

Communication route	8:00–9:00		<i>P</i>	10:00–11:00		<i>P</i>
	February (<i>N</i> = 228)	August (<i>N</i> = 372)		February (<i>N</i> = 144)	August (<i>N</i> = 350)	
Staff ⇒ staff	86	202	<0.001	55	83	0.002
Staff ⇒ records	85	21	<0.001	45	134	0.169
Staff ⇒ others ('What')	19	28	0.841	8	16	0.817
Staff ⇒ user(s)	6	1	0.026	1	7	0.514
Records ⇒ staff	2	9	0.292	0	3	–
User(s) ⇒ staff	2	3	0.999	1	5	0.823
Family ⇒ staff	1	8	0.184	1	4	0.999
Records ⇒ records	1	1	0.999	1	8	0.406
Staff ⇒ family	1	0	–	0	3	–
Staff and/or records ⇒ staff	0	41	–	0	3	–
Staff and/or others ('What') ⇒ staff and/or others ('What')	0	19	–	0	1	–
Staff and/or records ⇒ staff and/or records	0	0	–	0	24	–
Others	22	36	0.999	30	54	0.186
Unknown	3	3	0.853	2	5	0.999

Note: A chi square test was conducted between February and August sessions. (–) Indicates that the test could not be conducted. 'What' refers to medium.

Table 6

Number of occurrences of communication/recording tasks during the periods of 8:00–9:00 and 10:00–11:00 by communication tool

Communication tool	8:00–9:00		<i>P</i>	10:00–11:00		<i>P</i>
	February (<i>N</i> = 228)	August (<i>N</i> = 372)		February (<i>N</i> = 144)	August (<i>N</i> = 350)	
Messages	3	3	0.853	3	14	0.429
Direct conversation	182	265	0.025	65	87	<0.001
Voicemails	1	1	0.999	2	25	0.019
Notes	0	0	–	0	0	–
Wiseman Barcode	6	0	–	18	10	<0.001
Wiseman Keyboard	6	3	0.150	4	24	0.117
Extension calls	3	1	0.311	9	0	–
Outside calls	7	10	0.984	1	16	0.061
Facsimiles	0	4	–	0	2	–
Record entries	7	0	–	15	0	–
Reference to forms	9	6	0.131	0	74	–
Others	4	44	<0.001	27	60	0.767
Unknown	0	35	–	0	38	–

Note: A chi square test was conducted between February and August sessions. (–) Indicates that the test could not be conducted.

Meanwhile, the 153 former users may have benefited from the fact that such information had already been gathered in the institution as they had started using services before the system was launched. However, no trend toward a decrease in the number of communication/recording tasks was observed among these users. The introduction of the elderly care insurance system has undoubtedly brought about some increase in communication tasks. For example, the system requests preciseness in procedure such as the preparation of care plans and the management of nursing service provision, both of which necessarily involve more frequent information exchanges. Also, following the adoption of the system, changes in the type and frequency of services made by users may trigger an increase in communication/recording tasks. According to a report, daycare service provisions increased and short-stay service decreased after the system was introduced in Japan (Miyatake, 2001), and this could also be the case in the subject institution. Changes in users' choices from short-stay service to daycare may prompt an increase of communication/recording tasks because the latter is provided per day and requires more information exchange among staff in comparison with the former. The types and frequency of services in use were not studied in this research. However, an increase in daycare and a decrease in short-stay were observed in the category of utilized services in this research, in agreement with the above-mentioned report.

4.2. Time of occurrence of communication/recording tasks

Firstly, communication tasks were observed more often in the 8:00–11:00 and 14:00–17:00 time periods. The subject institution is open from 9:00 to 16:30, and at 8:30–9:00 and 16:00–16:30, short staff meetings are held for the purpose of exchanging information on short-stay users. The peaks of occurrence of communication/recording tasks in the morning and the afternoon fall respectively around the opening and closing times of this institution, presumably because of these correspond to those times when greater information exchange occurs and patient updates are provided.

Secondly, there are various possible factors behind the steep increase in the number of communication/recording tasks in the 8:00–9:00 and 10:00–11:00 time periods. As mentioned above, these periods fall around the opening time of the institution. In fact, it is inferable that the 8:00–9:00 period corresponds to the time when patient updates and information exchanges take place before opening.

Regarding job types of staff, a more prominent increase in the number of professional carers was noticed as compared to other staff. This suggests that the introduction of the new insurance system may have increased the number of communication/recording tasks performed by the professional carers during specific periods of time. Meanwhile, some reports have indicated that a greater number of inpatient falls occurred during those periods of time when the nurses were busy performing a communication or recording task (Taira et al., 1999; Kanemura et al., 2000). In facilities where nursing care services are also provided, the rush of communication tasks may deteriorate the quality of nursing services and increase the risk of accidents on the part of users. It thus appears necessary to take some measures to prevent such concentration of communication tasks. However, this study is limited in the sense that it does not shed adequate light on the burden put on the professional carers for the following reasons: (1) the study focused on the number of communication

education, and delayed development of user-friendly peripheral tools, in order to efficiently apply IT driven devices.

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CORRESPONDENCE

Survival rate after percutaneous endoscopic gastrostomy in a long-term care hospital

Dear Sir,

We previously reported the mortality after percutaneous endoscopic gastrostomy (PEG) in a general hospital.¹ The results showed a higher survival rate (30-day survival rate: 92.5%, 1-year survival rate: 64.0%, 2-year survival rate: 55.5%, mean age ± SD at PEG: 75.7 ± 14.1 years) than the results in other studies.²

In this study we surveyed the survival rate of 93 consecutive patients older than 65 years (mean age: 80.3 ± 7.4 years) who received PEG by reviewing their charts in a long-term care hospital. Because the hospital has an affiliated nursing home, home-visit nursing and day care centers for the frail elderly, we could track the record of survival in 84.9% of the post-PEG patients at the time of survey. The primary diagnoses whose symptoms required the patients to receive PEG were: cerebrovascular disease (61.3%), Alzheimer's dementia and/or vascular dementia (15.1%) and brain injury (4.3%). Most patients were severely disabled, showing a mean of 5.5 ± 1.2/6 on the score of Cognitive Performance Scale³ (only one patient showed intact cognitive performance) and a mean of 0.8 ± 3.0/20 on Barthel Index.⁴

Fig. 1 shows the Kaplan–Meier's survival curve after PEG. The survival rate was 88.9% at 30 days, 59.1% at 1 year and 52.0% at 2 years. The mean fully observed survival period was 382.3 ± 485.2 days. Age was a significant predictor for the survival period ($\beta = -18.7, P = 0.008$). The relative risks of serum total protein <6.0, white blood count >12,000, and coexisting decubitus at the time of PEG for the death at 1 year after PEG was 1.33 (95% CI; 0.77–2.28, $P = 0.263$), 1.79 (95% CI; 1.10–2.93, $P = 0.080$) and 1.29 (95% CI; 0.78–2.13, $P = 0.228$), respectively.

The 30-days, 1-year and 2-year survival rates of post-PEG patients in a long-term care hospital were

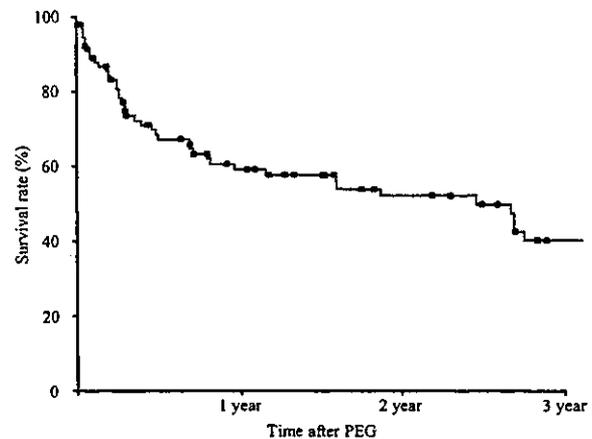


Figure 1 Kaplan–Meier survival curve after PEG. (●) Censored (dead) cases; PEG, percutaneous endoscopic gastrostomy.

lower than those in a general hospital. According to the 2002 annual report released by the Ministry of Health, Welfare and Labor of the government, the mean length of patients' hospital stay was 22.2 days in general hospitals, and 179.1 days in long-term care hospitals in Japan. By the current political pressure of shortening the length of stay in acute hospitals, the number of patients receiving PEG in long-term care hospitals has been constantly increasing. As shown in the results, the patients in long-term care hospitals usually have severe functional disabilities relative to those in acute hospitals. Under the circumstances, it is crucial to build up evidences regarding the post-PEG prognosis in long-term care hospitals.

In summary, the results indicate lower survival rates for post-PEG patients in a long-term care hospital than those in a general hospital. We believe that the present findings add some insights to the application of PEG in the long-term care.

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Effects of home massage rehabilitation therapy for the bed-ridden elderly: a pilot trial with a three-month follow-up

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Objectives: To assess the effects of home massage rehabilitation therapy on the bed-ridden elderly.

Design: Alternately allocated trial.

Setting: Subjects' homes, three home nursing stations, 13 visit care stations and one day service centre in Aichi prefecture, Japan.

Subjects: Bed-ridden patients who were 65 years and above, no dementia, stable general condition, and no rehabilitation therapy.

Intervention: Thirty-minute sessions of home massage rehabilitation therapy by a massage practitioner 2 or 3 days a week for three consecutive months or usual care.

Main measurements: Barthel Index (BI), Subjective Satisfaction and Refreshment Scale, Apathy Scale and Self-rating Depression Score.

Results: Fifty-three subjects were recruited, 26 in the home massage rehabilitation group (HMG) and 27 in the routine care group without massage (RCG). The protocol was completed for 40 subjects, 22 in the HMG and 18 in the RCG. There were no significant differences between the baseline characteristics of both groups; age, presence of spouse living together, diseases associated with disabilities and use of day care rehabilitation ($p = 0.76, 0.36, 0.94$ and 0.71 , respectively). The total BI score of the HMG (15.27 ± 4.51) at baseline was nonsignificantly lower ($p = 0.03$) than those of the RCG (11.44 ± 5.90). Subjective satisfaction and refreshment scale, Apathy Scale and Self-rating Depression Score of both groups at baseline were matched ($p = 0.12, 0.32$ and 0.89 , respectively). There were no statistical differences between the intergroup changes over time in BI, Subjective Satisfaction and Refreshment Scale, Apathy Scale and Self-rating Depression Score ($p = 0.35, 0.08, 0.70$ and 0.55 , respectively).

Conclusion: Home massage rehabilitation therapy did not show a positive effect on the bed-ridden elderly mentally and physically. We would require large-size trials to determine whether it is effective.

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