Careful hand feeding in a geriatric step-down hospital: a retrospective study

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ABSTRACT
Objective. To evaluate the safety and effectiveness of the careful hand feeding (CHF) programme in a geriatric step-down hospital.

Methods. Medical records of patients aged ≥65 years who received CHF in Fung Yiu King Hospital between February 2017 and November 2021 were retrospectively reviewed.

Results. 446 patients (178 men and 268 women) aged 66 to 109 (mean, 91) years were included for analysis. 88% of patients were severely frail or very severely frail. 70% of patients had advanced dementia. 81.3% of patients had dysphagia. 44% of patients were in imminent death status (who were highly likely to die within a week) before starting CHF. Food intake during CHF was poor or very poor in 51% of patients and satisfactory or good in 49% of patients. 90% of patients required clinically assisted hydration. The mean length of hospital stay was 19.3±16 days, and the mean duration of CHF was 14±13.5 days. 39% of patients died during the index admission; most of the remaining 61% of patients were discharged to their original placement. 27 (6%) patients had pneumonia. Independent predictors for pneumonia were the length of hospital stay (odds ratio=1.024, p=0.014) and poor/very poor intake (odds ratio=1.82, p=0.017).

Conclusion. CHF is safe in a geriatric step-down hospital and avoids use of a nasogastric feeding tube in patients in their last phase of life. It fosters comfort and dignity for dying patients. Most patients can return to their original placement for CHF after discharge.

Key words: Enteral nutrition; Frail elderly; Pneumonia, aspiration

INTRODUCTION
End-of-life care for older people is increasingly recognised in Hong Kong, particularly for those with cancers, advanced dementia or other irreversible chronic illnesses.1 One natural process of advanced dementia is eating problem with poor appetite and swallowing difficulty.2,3 Unless patients opted for no enteral feeding in advance directive or advance care planning, family members and healthcare professionals often feel obliged to use enteral feeding. Nasogastric tube feeding is commonly used in frail people living in a residential care homes for the elderly (RCHE),4 but it is associated with the risk of aspiration pneumonia.5 Enteral feeding fails to improve serum albumin, body weight, and lean muscle mass.6 Use of a feeding tube increases the use of physical restraints and the...
risk of pressure sore development. Older people in RCHEs who receive tube feeding are repeatedly transferred to the emergency department for tube complications.

Careful hand feeding (CHF) or comfort feeding has been advocated as an alternative for older people with advanced dementia and eating problems. The older person is placed in an upright position. The carer makes use of feeding techniques such as frequent reminders to swallow, multiple swallows, encouraging coughs after each swallow, limiting bolus size to less than one teaspoon, judicious use of thickeners, moistening foods with water or sauces, and alternating food with appropriate liquid consistency. The carer observes the patient for choking and pocketing of food in the mouth during the entire feeding process.

The quality of the interaction between caregiver and care receiver affects the proportion of food consumed by persons with late-stage dementia. Provision of CHF in public hospitals is difficult because of the understaffed situation. The wards are crowded, noisy, and without privacy. Nurses may have medicolegal consequences if they hand feed patients who are considered unfit for oral feeding by a speech therapist. Family members who refuse nasogastric tube feeding for dysphagic older patients are often asked to come to feed these patients in wards. When they are unable to come to the hospital, particularly during the COVID-19 pandemic under the no-visitor policy, they may have to opt for tube feeding.

Fung Yiu King Hospital is a geriatric step-down hospital. It provides convalescence support for older patients from Queen Mary Hospital and those from RCHEs who are under the end-of-life programme by the Hong Kong West Geriatric Assessment Team. In February 2017, a CHF programme was initiated to provide an alternative mode of feeding for suitable older patients with cancers or irreversible chronic illnesses in the end-of-life situation. A working group led by a consultant geriatrician was set up, comprising geriatricians, nurses, speech therapists, and dietitians. The concept and practice of CHF was taught to nurses, allied health professionals, and supporting staff. Suitable older patients with dysphagia and/or poor feeding were offered CHF. The pros and cons of tube feeding and CHF were discussed with patients and/or family members. The decision made was documented, with signatures of two doctors, one of whom must be the geriatrician in charge. Patients who opted for CHF were reassessed by the speech therapist (to determine the most suitable consistency of food and technique to feed the patients) and the dietician (to prepare the specific food). Before the COVID-19 pandemic, family members were encouraged to come to the hospital to feed the patients. During the pandemic under the no-visitor policy, nurses and trained supporting staff performed all the feeding in wards. Family members were encouraged to talk to the patients to give psychosocial support via telecare. The comfort of the patients and the joy and touch they experience during the feeding process take priority over the amount of food intake. Carers were taught to cease feeding immediately when they observe signs of choking and aspiration. CHF was continued until the patient died or was discharged, unless the patient had frank pneumonia, decreased consciousness, or change of decision. In patients with no advance care planning or when patients/family members objected to clinically assisted hydration, intravenous infusion or hypodermoclysis (subcutaneous fluid infusion) was given if intake of patients is inadequate. Feeding instructions were given to formal or informal carers to continue feeding after discharge. Patients living in RCHEs were followed up by our team, whereas home-dwelling patients were followed up by specialist clinics.

This study aims to evaluate the safety and effectiveness of the CHF programme in a geriatric step-down hospital.

METHODS

This study was approved by the Institutional Review Board of the University of Hong Kong/Hospital Authority Hong Kong West Cluster (reference: UW 20-257). Medical records of patients aged ≥65 years who received CHF in Fung Yiu King Hospital between February 2017 and November 2021 were retrospectively reviewed. Data retrieved included patient demographics, major diagnosis, frailty state as assessed by Rockwood Clinical Frailty Scale, length of hospital stay, duration of CHF, reasons for enteral feeding, use of clinically assisted hydration, and outcomes and complications after CHF. Food intake based on the average food portion
the patient could finish during CHF was assessed and categorised into good (≥75%), satisfactory (74% to ≥50%), poor (49% to ≥25%), and very poor (<25%).

Statistical analysis was performed using the SPSS (Windows version 27; IBM Corp, Armonk [NY], US). Patients were classified into two groups based on food intake: good to satisfactory and poor to very poor. The independent t-test (for continuous variables) and the Chi-squared test (for categorical variables) were used for comparison between groups. Variables with significant association (p<0.05) in univariate analysis were entered into multivariate analysis to determine independent predictors for pneumonia in CHF. All tests were two-tailed. A p value of <0.05 was considered statistically significant.

RESULTS

489 patients joined the CHF programme during the study period. 43 of them with incomplete records were excluded. The remaining 446 patients (178 men and 268 women) aged 66 to 109 (mean, 91) years were included for analysis (TABLE). 88% of patients were severely frail or very severely frail. 70% of patients had advanced dementia. 81.3% of patients had dysphagia. 44% of patients were in imminent death status (who were highly likely to die within a week) before starting CHF.

Food intake during CHF was poor or very poor in 228 (51%) patients and satisfactory or good in 218 (49%) patients. 401 (90%) patients required clinically assisted hydration. The mean length of hospital stay was 19.3±16 days, and the mean duration of CHF was 14±13.5 days. 175 (39%) patients died during the index admission; the remaining 271 (61%) patients were discharged to their original placement (n=261) or change from living at home to RCHEs (n=10). 27 (6%) patients had pneumonia.

In univariate analysis, pneumonia after CHF was associated with the length of hospital stay (p=0.042), duration of CHF (p=0.013), and poor/very poor intake (p=0.003). In multivariate analysis, independent predictors for pneumonia were the length of hospital stay (odds ratio [OR]=1.024, 95% confidence interval [CI]=1.005-1.043, p=0.014) and poor/very poor intake (OR=1.82, 95% CI=1.112-2.978, p=0.017).

DISCUSSION

CHF is not practised widely in Hong Kong, because of the lack of manpower in hospitals (especially during the COVID-19 pandemic), the labour-intensive nature of CHF, and the concerns of nursing staff about medicolegal consequences should the patients develop pneumonia, aspiration, or even asphyxia after CHF. Without enteral feeding, patients are often inadequately fed to be discharged to community. Continuation of CHF in RCHEs is difficult because of the shortage of staff.

Nonetheless, CHF was successfully carried out in our geriatric step-down hospital even during the COVID-19 pandemic under the no-visitor policy. The working group plays an important driving force for the CHF programme. This involves change in usual practice and culture. Staff training is imperative for lessening worries of the healthcare team.
Doctors play a pivotal role in discussion and seeking consensus from relatives for CHF. The consensus is documented with signatures of two doctors, one of whom must be the geriatrician in charge. The endorsement by doctors assures the nursing staff to carry out CHF and eases their medicolegal concerns.

Advance care planning enables family members and the healthcare team to understand the preference of the patients. However, only 29% of patients had advance care planning in place prior to admission, with two others having advance directives. With an ageing population in Hong Kong, it is desirable to promote advance care planning and advance directives in older people so that their healthcare wishes are better understood.20

CHF was safe in suitable patients with dysphagia; only 6% had pneumonia after CHF. This is comparable to a study in Singapore that reported a rate of aspiration pneumonia of 7.7% in patients with dysphagia who refused nasogastric tube feeding and had oral feeding.21 Whether all pneumonia cases were caused by aspiration was not known because of the nature of the retrospective study. The low rate of pneumonia is likely to be due to careful patient selection by our team, assessment by a speech therapist to determine the most suitable consistency of food and technique to feed the patient, education to carers on CHF by nurses and the speech therapist, and provision of food with appropriate texture by a dietitian. The carers are taught to observe the patients carefully and to stop feeding if there is any sign of intolerance such as coughing, choking, dyspnoea or cyanosis. Nasogastric tube feeding and CHF are comparable in terms of the patient survival rate; tube feeding is associated with a higher pneumonia risk.22

The length of hospital stay and poor/very poor feeding were independent predictors for pneumonia. This group of patients is the frailest with the poorest swallowing ability and immunity and thus at higher risk of pneumonia. However, for patients who were fit for discharge, most could return to their original placement for CHF; only 10 patients moved from home to RCHEs for care.

The comfort of the patients and the joy and touch they experience during CHF take priority over the amount of food intake. If the patient could not tolerate an oral intake, the pros and cons of clinically assisted hydration in the form of intravenous or hypodermoclysis were discussed with the patient/family members. Our team believe that clinically assisted hydration can enhance patient comfort by avoiding severe dehydration. Most family members would agree to some form of clinically assisted hydration, even during the last few days of life of patients.

There are limitations to this study. As a retrospective study, data accuracy relies on good documentation. A prospective randomised controlled study with a larger sample size is needed to demonstrate the benefits of CHF as compared with enteral feeding. Patients were from a single geriatric step-down hospital; our findings may not be generalised to other units or acute hospital settings. Satisfaction of family members towards CHF could not be measured during the COVID-19 pandemic.

CONCLUSION

CHF is safe in a geriatric step-down hospital and avoids use of a nasogastric tube in patients in their last phase of life. It fosters comfort and dignity for dying patients. Most patients can return to their original placement for CHF after discharge.

CONTRIBUTORS

All authors designed the study, acquired the data, analysed the data, drafted the manuscript, and critically revised the manuscript for important intellectual content. All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

CONFLICTS OF INTEREST

All authors have disclosed no conflicts of interest.

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DATA AVAILABILITY

All data generated or analysed during the present
study are available from the corresponding author on reasonable request.

ETHICS APPROVAL

The study was approved by the Institutional Review Board of the University of Hong Kong/Hospital Authority Hong Kong West Cluster (reference: UW 20-257). The patients were treated in accordance with the tenets of the Declaration of Helsinki. The patients provided written informed consent for all treatments and procedures and for publication.

REFERENCES

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