Feeding-swallowing issues in older adults with dementia

CPH Chan¹ BSc(Sp & Hr Sci), MA, YK Kwan² MBChB, FHKAM(Medicine), FRCP (Edin)

ABSTRACT

Purpose. To develop a set of intervention strategies using the cognitive-behavioural approach to maximise oral feeding in elderly people with dementia who refuse food.

Methods. 100 patients with dementia admitted for behavioural feeding problems (food refusal or poor oral intake) were reviewed. They were all confined to bed and had no acute medical or psychiatric conditions. Their swallowing ability was adequate to support oral feeding, but their feeding disability was severe. 30 men and 20 women (mean age, 86.5 years) were assigned to the Feeding Enhancement En Dementia (FEED) group, and 12 men and 38 women (mean age, 87.0 years) were assigned to the non-FEED group. The FEED group received a multidisciplinary, cognitive-behavioural treatment for feeding-swallowing problems, whereas the non-FEED group received passive diet and fluid modification or tube feeding if needed. The 2 groups were compared in terms of oral feeding at discharge, 6-month mortality, 6-month sustainability of oral feeding, and number of readmissions in 6 months after discharge.

Results. Patients in the FEED group achieved better outcomes than those in the non-FEED group in terms of oral feeding at discharge (96% vs. 60%, p<0.001), 6-month mortality (32% vs. 30%, p=0.663), 6-month sustainability of oral feeding (58% vs. 26%, p<0.001), and number of readmissions in 6 months after discharge (0.3 vs. 0.8, p=0.001).

Conclusion. Cognitive-behavioural strategies are viable for treating feeding-swallowing problems in patients with dementia.

Key words: Deglutition disorders; Dementia; Feeding behaviour

INTRODUCTION

In Hong Kong, the proportions of dementia in people aged 60 to >85 years range from 1.2% to 32%,³ with the mean prevalence being 9.3% in those older than 70 years. Feeding is one of the most difficult problems in dementia care; ⁴ 47% to 86% of persons with advanced dementia develop a feeding-swallowing problem,³⁵ which is associated with 39% mortality in 6 months.⁴ At the Speech Therapy Service of Tuen Mun Hospital, the referral rate for oral refusal or poor oral intake secondary to dementia has increased from 2% to 5% of the total number of referrals from 2010 to 2013, with >200 new cases per year.

Feeding-swallowing problems in the dementia population are routinely treated with pharmacological intervention. However, the outcomes and sustainability are sub-optimal, and elderly people with dementia often end up receiving syringe or tube feeding. Based on the swallowing physiology, coordinated oral-preparatory, oral, and pharyngeal phases are needed to maintain a
safe feeding process. Therefore, syringe feeding is controversial for elderly people with dementia who have severe preparatory and oral problems, as food and drinks may spill to the pharyngeal phase prematurely without self-protection of the airway first. Elderly patients can usually avoid being choked by food, but syringe feeding inevitably increases the likelihood of aspiration. Tube feeding may result in complications such as diarrhoea and gastrointestinal bleeding, development of pressure ulcers in frail elderly who were put under physical restraint, earlier institutionalisation, and decreased function and quality of life. Tube feeding does not decrease the aspiration risk and mortality. Therefore, efforts to enhance oral feeding as usual care for elderly dementia patients are necessary.

According to the American Speech, Language and Hearing Association, feeding is defined as the intention of accepting, gathering food, and getting ready to swallow, whereas swallowing is the chain of neuromuscular events that food and drink are physically manipulated when there is no psychological barrier to eating. Eating problems in dementia patients are characterised by both feeding and swallowing problems, namely: (1) swallowing difficulties with aspiration risks, (2) food refusal by verbal rejection, physical rejection, and oral defensiveness, (3) oral spitting and spillage, and (4) food retention. The ‘cumulative and hierarchical pattern’ of these problems is cognitive-behaviourally based. This study aimed to develop a set of intervention strategies using the cognitive-behavioural approach to maximise oral feeding in elderly dementia patients with food refusal.

**METHODS**

In 2011, the Feeding Enhancement En Dementia (FEED) programme for elderly dementia patients was established by geriatricians, speech therapist, dieticians, geriatric nurse specialists, and hospital care assistants at the Tuen Mun Hospital together with patients’ caregivers. The programme aimed to: (1) identify behavioural feeding problems for quality-of-life care, (2) develop intervention strategies to enhance oral feeding, (3) maintain acceptable nutrition and hydration standards, (4) delay use of tube feeding, and (5) reduce avoidable restraints.

100 patients with dementia who were referred to the Speech Therapy Service at the Tuen Mun Hospital between February 2011 and August 2011 owing to behavioural feeding problems (food refusal or poor oral intake) were retrospectively reviewed. All patients were confined to bed and had no acute medical or psychiatric conditions. Their swallowing ability was adequate to support oral feeding and they were all receiving modified diet and fluid before admission, as indicated by their Royal Brisbane Hospital Outcome Measure for Swallowing scores of ≥6 out of 9. However, all patients had severe feeding disability, as indicated by their Edinburgh Feeding Evaluation in Dementia Scale scores of ≥10 out of 20.

30 men and 20 women (mean age, 86.5 years) [8 living at home and 42 in nursing homes] admitted to the geriatrics ward were assigned to the FEED group, and 12 men and 38 women (mean age, 87.0 years) [6 living at home and 44 in nursing homes] admitted to mixed medical and geriatrics wards were assigned to the non-FEED group.

For patients in the FEED group, the geriatricians assessed their medical and psychiatric conditions and adjusted any medication that could affect the sensorium, appetite, and gastric emptying. The patients’ families were interviewed about their ‘wishes’ for their relative’s feeding mode. After ruling out reversible medical and psychiatric conditions contributing to oral feeding difficulties, the speech therapist evaluated the severity of feeding and swallowing problems. Meanwhile, the nursing specialists asked caregivers about the patient’s favourite foods, taste, feeding environment, and preferred feeding carer. The speech therapist devised therapeutic strategies that best alleviated the cognitive and behavioural barriers to feeding and swallowing. The intervention strategies included: (1) behavioural modification to reduce refusal by rhythmical patting, music, and conditioning with favourite food reinforcers in the diet, (2) oral desensitisation to minimise abnormal oro-motor reflexes by teat soothing, slow icing and brushing, and bottle feeding, (3) oral stimulation to initiate oral anticipation by alternation of appetisers with specific taste and temperature in the diet, and (4) cognitive psychological adaptation to enhance recognition of eating mode by selected feeding carer, recognised voice, or verbal prompting. The dieticians monitored the patients’ body mass index and advised on oral
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supplementation if required. The nursing staff promoted oral feeding, and the caregivers were encouraged to feed the patients. The team met weekly for progress updates and discharge planning. After the patients were discharged with the ability to feed orally, the speech therapist continued to support the caregivers with their feeding skills at outpatient follow-up for 2 sessions.

For patients in the non-FEED group, passive diet and fluid modification was performed by speech therapists; patients were fed by tube if they still refused oral feeding or had poor intake.

The 2 groups were compared in terms of oral feeding at discharge, 6-month mortality, 6-month sustainability of oral feeding, and number of readmissions in 6 months after discharge. Gender is not a contributing factor to health outcomes.¹⁴

RESULTS

The FEED and non-FEED groups did not differ significantly in terms of feeding and swallowing functions on admission. Patients in the FEED group achieved better outcomes than those in the non-FEED group in terms of oral feeding at discharge (96% vs. 60%, p<0.001), 6-month mortality (32% vs. 30%, p=0.663) [which were lower than the 39% in a US study⁴], 6-month sustainability of oral feeding (58% vs. 26%, p<0.001), and number of readmissions in 6 months after discharge (0.3 vs. 0.8, p=0.001) [Table].

Causes of death were chest infection, coffee-ground pneumonia, heart failure, and cardiac arrest;
none of the patients died from aspiration. Although most patients were nursing home residents, they were well supported by their family members (spouses, daughters, and daughters-in-law). Transferring the feeding strategies to family members enhanced the patients’ oral feeding sustainability. Communication of feeding guidelines between the nursing specialists and caregivers before patient discharge enabled caregivers to be more aware of the feeding advice.

Associations between feeding symptoms and specific intervention strategies were noted. For physical refusal, behavioural modification using music, calming, and rhythmical patting (i.e. intervention strategy 1) should be used. For oral defensiveness, oral desensitisation of soothing and oral reflex normalisation (i.e. intervention strategy 2) should be used. For verbal refusal, selected feeding carers and favourite food conditioning should be used. For mixed abnormal behaviours, combinations of intervention strategies 1, 2, 3, and 4 should be used.

**DISCUSSION**

Elderly patients with dementia regress in terms of neurology and developmental and cognitive psychology, similar to newborns in feeding-swallowing patterns, with dominance of primitive oral reflexes, as insufficient frontal lobe function limits their inhibition to abnormal oro-motor reflexes to feeding, including tonic bite reflex, tongue thrust reflex, and oral aversiveness/defensiveness, which can be improved by techniques of soothing, calming, and normalising of oro-motor behaviours.

Dementia patients with oral refusal are associated with cognitive (memory, attention, proprioception, and recognition) degeneration and are prone to agnosia with difficulty to interpret their senses (vision, taste, smell, and touch). They refuse oral feeding as they cannot recognise the objects as food that is edible, tasty, and appealing. They resist opening their mouths for food and drink because of oral dyspraxia involving planning to eat, execution of the muscles to eat, and monitoring of the eating process. To facilitate their cooperation with feeding, it is necessary to help them to ‘understand’ the eating mode by cognitive adaptation from selected feeding carers with recognised faces and voices.

As dementia progresses, the eating routine can be complicated by physical rejection and agitation. Dementia patients regress cognitively and behaviourally to their instinctive selves by relating to the world with movements. By using a fixed mealtime schedule, an environment with rhythmical music, and presentation of favourite foods, oral feeding is enhanced through conditioning by establishing an eating pattern.

This study had several limitations. First, admission to the geriatric or medical ward was not randomised owing to administrative constraints. Second, baseline characteristics of the patients, namely the Mini-Mental State Examination score, basic activities of daily living status, mobility status, comorbidity index, and nutritional status were not measured. Third, associations of specific intervention strategies with specific feeding symptoms need further substantiation. Fourth, a committed and devoted

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**Table**

Comparison of Feeding Enhancement En Dementia (FEED) and non-FEED groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>FEED</th>
<th>Non-FEED</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean±SD age (years)</td>
<td>86.5±8.7</td>
<td>87.0±8.8</td>
<td>0.766</td>
</tr>
<tr>
<td>Mean±SD Edinburgh Feeding Evaluation in Dementia Scale score</td>
<td>16.5±1.8</td>
<td>16.2±1.5</td>
<td>0.469</td>
</tr>
<tr>
<td>Mean±SD Royal Brisbane Hospital Outcome Measure for Swallowing score</td>
<td>6.1±0.3</td>
<td>6.0±0.1</td>
<td>0.172</td>
</tr>
<tr>
<td>Mean±SD no. of admissions owing to feeding-swallowing problems in previous 6 months</td>
<td>1.2±0.5</td>
<td>1.1±0.4</td>
<td>0.113</td>
</tr>
<tr>
<td>Oral feeding at discharge (% of patients)</td>
<td>96</td>
<td>60</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>6-month mortality (% of patients)</td>
<td>32</td>
<td>30</td>
<td>0.663</td>
</tr>
<tr>
<td>6-month sustainability of oral feeding (% of patients)</td>
<td>58</td>
<td>26</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mean no. of readmissions in 6 months after discharge</td>
<td>0.3</td>
<td>0.8</td>
<td>0.001</td>
</tr>
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</table>
team is needed to reproduce such a favourable outcome.

CONCLUSION

Cognitive-behavioural strategies are viable for treating feeding-swallowing problems in patients with dementia.

ACKNOWLEDGEMENT

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REFERENCES