

## Original Article

# Staff training effect on the management of patients with dysphagia and dementia in a nursing home

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**ABSTRACT: Background:** Dementia is the fourth cause of death in the elderly population in Western countries. Dysphagia is frequent both in the early and late phases of dementia. It increases malnutrition and aspiration risks, mortality rates, and length of hospital and nursing home stay, thereby reducing patients' quality of life. Nursing home staff taking care of patients with dysphagia and dementia often have generic training and lack specific tools to handle this problem.

**Objective:** To examine the effect of specific training on dysphagia and dementia in the nursing home. **Patients and methods:** Two groups of nursing home patients attended to by generically (group A) and specifically (group B) trained staff were retrospectively compared.

**Results:** Within a 6-month period group B showed a longer duration of nutritional therapy and a smaller number of tube-fed patients, x-ray swallowing exams, patients with malnutrition, and hospital admissions for aspiration pneumonia.

**Conclusion:** Appropriate staff training is a vital element in the management of patients with dysphagia and dementia. (*Nutritional Therapy & Metabolism* 2009; 27: 95-9)

**KEY WORDS:** Dementia, Dysphagia, Malnutrition

## INTRODUCTION

The term *dementia* was originally introduced to signify an alteration of intelligence and behavior. In the last years, better defined clinical criteria have enabled us to distinguish this disorder from other conditions. Dementia is now defined as a clinical syndrome with a loss of cognitive functions – always including memory – which interferes with patients' social and working activities. There may also be significant noncognitive function impairment (personality, affectivity, ideation, perception, vegetative function and behavior) (1).

Dysphagia is an alteration in swallowing capacity or the complete inability to swallow. Swallowing difficulties affect one's ability to safely consume foods (2). Dysphagia is frequent both in the early and late phases of dementia. It increases malnutrition and aspiration risks, mortality, and duration of hospital and nursing home stay, thereby reducing patients' quality of life (3).

Dementia is the fourth cause of death in the elderly population in Western countries. The prevalence of this condition, especially Alzheimer's disease (AD), increases with age and is higher in women than men (4, 5). AD is the most common form of dementia (50-60%). Ten to twenty percent of patients have vascular dementia. In

about 15% of patients AD and vascular dementia coexist. The frequency of more rare forms like Lewy body disease and Pick dementia has been variously reported in the literature. Five to twenty percent of patients are affected by reversible types of dementia. The prevalence of dementia in nursing homes ranges from 15% to 60% (6).

AD is the most frequent and best defined degenerative form of dementia. It begins in a subtle way and continues with a chronic and progressive course. Loss of memory is one of the earliest symptoms. Apraxia (loss of ability in motor functions with preservation of comprehension and motility) and agnosia (loss of ability to recognize or identify objects in the absence of sensory impairment) are common symptoms. Later on, patients become unable to learn new information and frequently get lost in their own homes. In the last phase, AD patients lose all activities of daily living and usually become incontinent. Swallowing alterations such as refusal, swallowing agnosia or apraxia often appear in this phase.

Vascular dementia (7) is characterized by the presence of dementia symptoms and cerebral vascular signs (radiological characteristics), and the observation of a correlation between the two aspects. In vascular dementia, multiple focal deficits and different clinical expres-

sions may coexist, mainly with subcortical symptoms. Swallowing alterations may represent one of the earliest symptoms in these patients.

In recent years Lewy body disease has been assumed to be responsible for dementia syndromes in 15% to 25% of patients (6). Lewy body disease is mainly characterized by parkinsonism and a cognitive decline with psychotic symptoms. Attention disturbance, loss of critical capacity and visual-spatial deficits are the first symptoms of this disease. Parkinsonism may also be a consequence of neuroleptic treatment. Cognitive impairment, waking status and hallucinations are fluctuating, as is dysphagia, with alterations mainly in the oral phase of swallowing.

Swallowing problems are less pronounced in such dementia forms as normal pressure hydrocephalus (trauma, meningitis, subarachnoid hemorrhage, Paget's disease) and frontotemporal dementia (Tab. I) (4, 5).

The diagnosis and treatment of patients with dementia and dysphagia can be problematic. The management of such patients is especially difficult in nursing homes, where staff is often unprepared.

We retrospectively examined the effect of a specific training program on dysphagia and dementia along with specific diagnostic and treatment protocols in a nursing home.

## PATIENTS AND METHODS

Between June and December 2006 we trained a group of physicians and nurses in a nursing home to take care of patients with dysphagia and dementia. The main purposes of the training were the adoption of a screening tool for dysphagia and malnutrition, the enhancement of sensitivity towards malnutrition treatment, and the development of specific protocols to compensate swallowing disorders and start nutritional therapy.

We retrospectively compared data collected between January and June 2007 on 2 groups of patients living in the same nursing home. Group A comprised 56 patients (33 women and 23 men, age range 69-83 years) with dysphagia and dementia, treated by generically trained physicians and nurses; group B consisted of 27 patients (18 women and 9 men, age range 75-88 years) who were under the care of specifically trained staff.

The stage of dementia of the study patients was classified using the Functional Assessment Staging (FAST) scale (8). Residual swallowing ability was estimated with the McGill Ingestive Skills Assessment (MISA) scale (9). Figure 1 shows the algorithm used for the evaluation and treatment of dysphagia and malnutrition.

Within the considered period we analyzed staff dedicated time helping a single patient with a single meal and the number of x-ray examinations and of sip-fed and tube-fed patients. Each patient was weighed at the beginning and end of the period and the percentage of weight variation was estimated. Finally, the number of hospital admissions for aspiration pneumonia was determined.

Data were expressed as means (range) and compared using Student's *t* test. The number of patients was expressed as a percentage of the total number and compared between groups using the chi-square test.

**TABLE I - IMPORTANCE OF DYSPHAGIA IN DIFFERENT DEMENTIA TYPES**

Alzheimer's disease	+++
Vascular dementia	+++
Lewy body disease	++
Normal hydrocephalus	-+
Frontotemporal dementia	-+

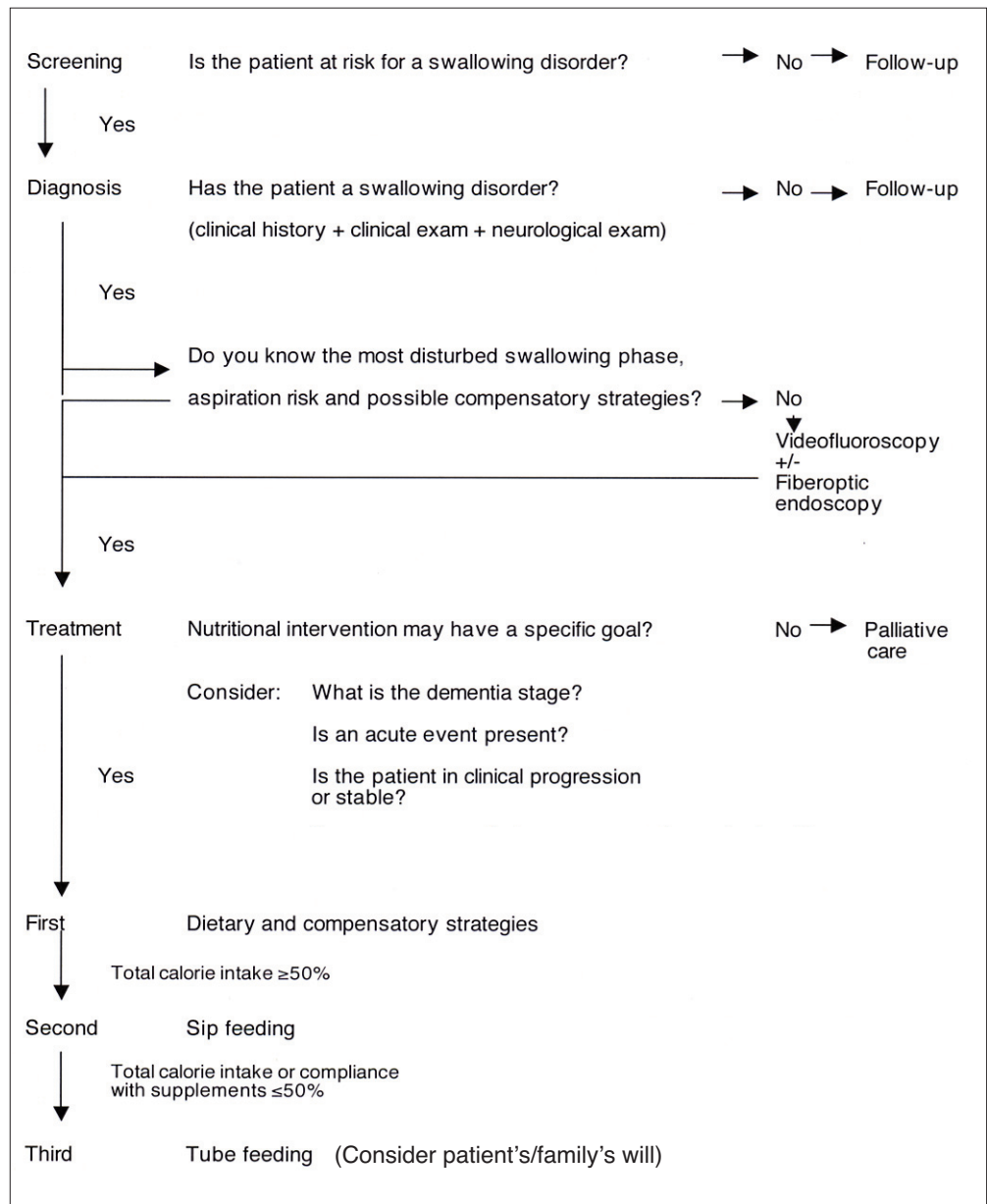
**TABLE II - RETROSPECTIVELY ANALYZED DATA IN GROUPS A AND B**

	Group A	Group B
Dementia stage: FAST score	5.1 (4-7)	5.6 (5-7)
Dysphagia severity: MISA score	26 (18-34)	21 (16-29)
X-ray swallowing exams	7	0
Tube-fed patients	10 (18%)	3 (11%)
Sip-fed patients	8 (4%)	14 (52%) <sup>§</sup>
Tube feeding duration (days)	23 (16-280)	140 (40-280) <sup>§</sup>
Patients with hydration	11 (20%)	2 (7%)
Staff dedicated time helping a single patient with a single meal (minutes)	18 (14-43)	33 (22-51) <sup>§</sup>
Hospital admissions for aspiration pneumonia	10 (18%)	1 (4%) <sup>§</sup>
Patients with weight loss >5%	34 (61%)	4 (15%) <sup>§</sup>

<sup>§</sup>p<0.05

FAST, Functional Assessment Staging; MISA, McGill Ingestive Skills Assessment

**Fig. 1** - Algorithm for diagnosis and treatment of patients with dysphagia and dementia.



## RESULTS

The results are shown in Table II. The severity of dementia and dysphagia were similar in both groups. Group B underwent fewer x-ray swallowing studies than group A. The use of enteral nutrition was different in the 2 groups: tube-fed patients were significantly fewer in group B and had a longer treatment duration than those in group A. Conversely, group B had more sip-fed patients. Specifically trained nurses dedicated more time to helping patients with their meals. The number of hospital admissions for aspiration pneumonia

and the number of patients with weight loss >5% were significantly lower in group B. No differences were found in the number of hospital admissions in tube-fed and non-tube-fed patients.

## DISCUSSION

Screening for swallowing disorders must be easy to perform, non-invasive, and suitable for defining an intervention program. It should evaluate pulmonary and nutritional risks, the indication for new tests or exami-

nations, and the need for specialist intervention (2, 10). In mild or moderate dementia, dysphagia screening is not different from that used in other diseases. In severe dementia or in case of behavior disorders, however, screening tools may be difficult to administer.

The evaluation must include assessment of the patient's clinical history (other diseases, nutritional or respiratory problems), a clinical examination (use of medications, presence of respiratory complications), a neurological examination (motor activity and sensibility of the mouth, pharynx, etc.), and a complete evaluation of the swallowing disorders and their consequences for food of different consistencies. At the end of the procedure, the specificity of the disorder (oral, pharyngeal or esophageal disturbance) and the actual aspiration risk should be known, together with the impact on quality of life. More complex tools such as videofluoroscopy or fiberoptic endoscopy are needed in case of incomplete clinical data, incomplete clinical evaluation (e.g., due to communication problems), confirmation of a clinical suspicion or a modified clinical expression of the disorder (Fig. 1) (10, 11). In patients with behavioral disturbances or severe cognitive impairment a complete evaluation may not be possible and clinical examination may be the only useful tool. Moreover, these patients may be difficult to take to hospital or a dedicated outpatient clinic.

Treatment may be aimed at complete resolution of the problem or only correction of the disturbance in order to compensate hydration and nutrition and reduce the aspiration risk. When dietary strategies with different food consistencies and compensation methods are not enough, artificial nutrition and supplements should be considered, and their goals and impact on life quality should be related to the severity of dementia and its possible evolution (Fig. 1) (12, 13).

Generically trained nursing home staff are often unprepared to diagnose the problem early and choose the correct treatment. With the present work we retrospectively evaluated the effect of a specific training program and the adoption of protocols on the treatment of patients with dysphagia and dementia in a nursing home. Patients who were attended to by specifically prepared staff underwent fewer x-ray examinations and more appropriate tube feeding therapy; they had a lower risk of adverse events such as hospital admission, pneumonia, and weight loss. The longer enteral nutrition therapy in the group treated by trained staff was probably the result of a reduced incidence of intolerance. However, the time dedicated to helping with meals was increased, so more resources were needed.

We may conclude, in spite of the small number of patients studied, that training and the adoption of specific procedures can reduce the number of unnecessary examinations. Staff attention could thus be dedicated to dietary and sip-feeding strategies, limiting tube feeding, improving quality of life, and reducing costs. Our experience suggests that specific resources should be provided for staff education in nursing homes.

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