

TUBE FEEDING CAN BE DISCONTINUED BY TAKING DOPAMINE AGONISTS AND ANGIOTENSIN-CONVERTING ENZYME INHIBITORS IN THE ADVANCED STAGES OF DEMENTIA

To the Editor: Dysphagia, loss of the capacity for voluntary movement, speech, and continence, is one of the most serious symptoms in the advanced stage of dementia. Difficulty swallowing food is generally treated by changing the consistency of food from a hard mass to a soft paste and oral care. Recently, dopamine agonists and angiotensin-converting enzyme inhibitors (ACEIs) were reported to be effective at preventing aspiration pneumonia through increasing substance P levels, which enhances swallowing and cough reflexes.¹ We administered these drugs to some patients in the advanced stages of dementia and herein report three representative patients in whom oral food intake has been prolonged and tube feeding has been delayed for 7 months to 2 years.

CASE 1

A 67-year-old man with early-onset Alzheimer's disease (AD) in stage 7e according to functional assessment staging of AD (FAST) experienced swallowing difficulty 9 years after onset, and tube feeding was considered. He was medicated with the dopamine antagonist tiapride (25 mg) because of hyperactivity and violent behavior 2 years before; despite the disappearance of symptoms, medication had been continued. We first stopped tiapride and administered the dopamine agonist amantadine chloride (50 mg) and levodopa (100 mg). After 2 weeks, he smiled and spoke to caregivers, which surprised them. As a result of improved swallowing because of larger doses of amantadine chloride (150 mg) and levodopa (200 mg), he has maintained oral intake for 2 years; during this period, he experienced fever once, caused by aspiration pneumonia. His body weight increased from 51.4 kg (body mass index (BMI) = 20.6 kg/m²) at the beginning of therapy to 56.3 kg (BMI = 22.5 kg/m²) after 8 months and is now maintained at 54.5 kg (BMI = 21.8 kg/m²) 2 years after the start of therapy.

CASE 2

An 81-year-old woman with AD in FAST stage 7e experienced swallowing difficulty 10 years after onset. She was mute, kept food in her mouth without swallowing for minutes, and started to sleep during eating. She was first medicated with the ACEI captopril (25 mg), but her body weight continued to decrease, from 46.8 kg (BMI = 22.3 kg/m²) to 39.8 kg (BMI = 18.9 kg/m²) over a period of 9 months. She received combined medication of captopril, amantadine chloride (150 mg), and levodopa (300 mg), and the herbal medicine Rikkunshito (5.0 g) for appetite improvement. She regained her appetite, became awake during meals, and showed increased facial expressions (smiling and laughing). Her weight has been at 39.9 kg (BMI = 19.0 kg/m²) for 7 months, and she has experienced fever once in the last 7 months.

CASE 3

A 75-year-old bedridden woman with vascular dementia due to recurrent stroke (double hemiparesis: left > right),

diabetes mellitus, and hip bone and lumbar fractures developed swallowing difficulty 16 years after her first stroke. Medication with amantadine chloride (100 mg) was started, together with a change of the antihypertensive drug from olmesartan to the ACEI imidapril (12.5 mg). Her body weight decreased from 37.1 kg (BMI = 16.9 kg/m²) to 36.3 kg (BMI = 16.6 kg/m²) for 20 months after the start of medication. She has experienced fever once in the last 20 months, and maintains oral intake.

We have prolonged oral food intake and delayed tube feeding by administering dopamine agonists in case 1; dopamine agonists, an ACEI, and Rikkunshito in case 2; and dopamine agonists and an ACEI in case 3. Substance P is critical for the initiation of swallowing and the cough reflex; pharmacological treatment using dopamine agonists could improve both reflexes by enhancing substance P production, whereas ACEIs lead to the inhibition of substance P breakdown,¹ although the first choice is a dopamine agonist, because as shown in cases 1 and 2, it improves the conscious state (arousal), mood (facial expression), and motivation (activity).

The traditional Japanese herbal medicine Rikkunshito was reported to enhance appetite and gastric emptying by increasing the secretion of the orexigenic hormone ghrelin.^{2,3} It might be that ghrelin protects against pneumonia by suppressing gastric regurgitation.

In Japan, it is common to use long-term tube feeding introduced by percutaneous endoscopic gastrostomy (PEG), mainly with the purpose of extending life in the end stage of dementia, but PEG is not useful in preventing pneumonia because it causes the silent aspiration of contaminated saliva and regurgitated gastric secretion.¹ To delay tube feeding with PEG, dopamine agonists should be tried first for patients with dysphagia to prolong oral food intake and so help maintain their dignity. ACEIs and Rikkunshito may also be added.

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EFFECT OF MALNUTRITION ON EXECUTIVE FUNCTION IN OLDER EGYPTIANS IN GERIATRIC HOMES

To the Editor: Nutrition is an important determinant of health in elderly patients. The importance of nutritional status has been increasingly recognized in a variety of morbid conditions including cancer, heart disease, and dementia in persons aged 65 and older.¹

Malnutrition is prevalent in elderly populations, even in the developed world.² The prevalence of malnutrition increases with age and is most common in institutionalized individuals.³

Undernutrition is associated with exacerbation of health conditions, frailty, and decline in physical and cognitive function.⁴

The aim of this study was to evaluate the effect of malnutrition on executive function in older Egyptian subjects in geriatric homes. The study was a case–control study. Participants were recruited from geriatric homes in Cairo, Egypt, and subdivided into two groups: Group 1: cases, 50 men and women aged 60 and older found to be malnourished ($n = 28$) or at risk of malnutrition ($n = 22$) according to the Mini Nutritional Assessment (MNA);⁵ and Group 2: controls (matched for age and sex), 50 men and women aged 60 and older found to be well nourished according to MNA. Subjects with dementia (Mini-Mental State Examination score less than 26)⁶ or depression (Geriatric Depression Scale score greater than 5)⁷ were excluded from the study. Subjects with history of stroke, delirium, alcoholism, drug abuse, psychiatric disease, or thyroid disease were excluded, as were subjects with auditory or visual impairment or any organ failure.

Cognitive and executive functions were assessed using three neuropsychological tests: letter verbal fluency test,⁸ animal verbal fluency test,⁹ and Executive Interview 25 test (Exit25).¹⁰ Nutritional assessment was performed using the Mini Nutritional Assessment. The mean EXIT25 score was significantly higher (impaired) in both the malnourished group ($P < .001$) and the group at risk of malnutrition ($P = .002$) than in the well-nourished group. Also letter and animal verbal fluency test scores were significantly lower in the malnourished group than in the control subjects ($P < .001$).

Elderly subjects with malnutrition or at risk of malnutrition had poorer cognitive and executive function than well nourished elderly subjects.

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SEVERE HUMAN RHINOVIRUS OUTBREAK ASSOCIATED WITH FATALITIES IN A LONG-TERM CARE FACILITY IN ONTARIO, CANADA

To the Editor: Rhinovirus (HRV) infections are one of the most common causes of viral illnesses in humans. Infection of healthy adults with HRV can lead to a self-limited upper respiratory tract illness, also known as the common cold, but it can cause more-severe disease in elderly patients, such as exacerbations of chronic lung disease, pneumonia, and death.^{1,2} Several reports of HRV outbreaks in elderly patients have been described.^{3–6} An outbreak of rhinovirus in a long-term care facility (LTCF) causing severe disease