The efficacy of pre-thickened fluids on total fluid and nutrient consumption among extended care residents requiring thickened fluids due to risk of aspiration

SIR—Dysphagia is associated with many neurological and neuromuscular conditions including stroke and Parkinson’s disease. Consequently dysphagia is a common condition in our patient population. Treatment of dysphagia necessitates the use of thickened fluids, however there are problems with the use of thickener. Failure to achieve the recommended consistency can increase the risk of aspiration. Dysphagia patients who receive thickened fluids frequently fail to meet their fluid requirements [1] and this can lead to dehydration. Whelan [1] investigated fluid intake in 24 stroke patients with dysphagia to evaluate the effect of the disability, and identify the type of fluid given. The mean thickened fluid intake was 455 ml/day resulting in the use of an extra 742 ml/day of supplementary parenteral fluids. This still did not result in an adequate total intake. However, patients not on a specialist stroke unit who received pre-thickened fluids drank almost 100% more than those on powder-thickened fluids.

In a small, unpublished study on 10 patients in St. Mary’s Hospital, fibre, fluid and laxative intake was assessed. In this study, the patients on thickened fluids had a lower total intake and their fluid intake consisted mainly of poor nutritional quality beverages such as tea and lemonade.

The use of powder thickener added to fluids relies on the staff achieving the correct consistency through correct instruction and adequate guidelines.

Poor hydration can adversely affect a number of physiological processes including the regulation of body temperature, the distribution of nutrients and the excretion and elimination of waste products of metabolism. A study conducted on a non-specialist stroke unit who received pre-thickened drinks consumed almost 100% more than those on powder-thickened fluids [1]. We conducted a small study at St. Mary’s Hospital in Dublin on 11 patients to assess whether the use of pre-thickened, standardised consistency fluids resulted in an increase in fluid and nutrient intake, reduced constipation rates and improved hydration status in dysphagic patients.

Methods

Eleven adult patients, resident in a 321-bed geriatric care facility that provides acute, rehabilitation and long-term care services in Dublin, took part in our study. These patients ranged in age from 51 to 109 years; three were male and eight were female. They had all previously been assessed and were considered to be at risk of aspiration and to require thickened fluids. We utilised a cross-over study design, with patients assigned to two groups. The first group (group A) was assigned to receive pre-thickened, standardised consistency fluids, available in a variety of flavours including fruit juices, milk, orange juice, peppermint and tea for a 6-week period. The second group (group B) continued on fluids thickened at the bedside using ‘usual’ thickener—modified maize starch—for the same 6-week period. Fluid intakes were recorded by nursing staff at each drinking occasion using graduated measuring cups. After 6 weeks, the groups were reversed and group A received fluids with ‘usual’ thickener while group B received pre-thickened fluids for the next 6 weeks. In this way the participants functioned as their own controls.

Data was gathered on Barthel index and MMSE at baseline, week 6 and week 12. Daily fluid, protein, calorie, vitamin C and vitamin D intakes were recorded on a weekly basis throughout the study. Fluid requirements were calculated using the Parenteral and Enteral Nutrition Group (PENG) guidelines. Fluid was defined as any food that was liquid at room temperature. Constipation rates were also recorded using the Bristol Stool Chart.

Ethical approval was not sought for this study as all participants had been previously prescribed thickened fluids following appropriate clinical assessment.

Results

Eleven patients took part in the study. The mean age of the patients was 76, the mean BMI was 23.3 and the mean Barthel index was 0.4.

Results from this study showed that patients had significantly higher energy, protein, calcium and vitamin C and D intake when given pre-thickened fluids as compared to drinks thickened at the bedside (Table 1). Eight of the eleven patients in the study had higher fluid intake when taken in the form of pre-thickened fluids as compared to powder-thickened fluids. The fluids taken in pre-thickened form were found to be of more nutritional value, whereas patients taking fluids with thickener added were more likely to be taking their fluid in the form of less nutritious fluids such as tea or lemonade.

There was no difference in rates of constipation observed.

Discussion

Dysphagic patients who receive thickened fluids frequently fail to meet their fluid requirements [1], resulting in inadequate nutrient intake. The results of our small study are interesting as they indicate that pre-thickened fluids may increase fluid and nutrient intake in vulnerable patients suffering from dysphagia. As this is likely to improve immune function, depression, fatigue, confusion, constipation [3] and weakness [2], it is suggested that a larger study may be worthwhile.

Key points

- Patients with dysphagia commonly receive thickened fluids.
- Use of traditional powder thickener may be associated with insufficient fluid and nutrient intake.
- Pre-thickened fluids may offer a beneficial alternative.
Pre-thickened fluids were associated with significantly improved nutrient intake, and a trend towards improved fluid intake.

Conflict of interest

Fresenius Kabi partly funded this study through an unrestricted educational grant; however, it was not involved in the design, execution, analysis, interpretation of data or writing of the study.

References

4. doi: 10.1093/ageing/afn204

Age, comorbidity, treatment decision and prognosis in lung cancer

SIR—Lung cancer is now the leading cause of cancer-related death in most developed countries. Approximately 80–85% of lung cancer subtypes are of non-small cell (NSCLC), two-thirds of which are at advanced stages on diagnosis. Like other solid tumours, lung cancer is predominantly a disease of the elderly and ∼30–50% of all patients are older than 70 years when the disease is diagnosed [1, 2]. Despite the high incidence of lung cancer and its high mortality rate in elderly patients, the likelihood of receiving active treatment appears to decrease with increasing age [3, 4]. The presence of comorbid conditions is regarded as an important factor influencing treatment decisions [5]. In spite of the fact that comorbid conditions are very common in the elderly [6], the prognostic impact of age and comorbidity remains controversial.

With these aspects in mind, we performed an observational study to analyse the influence of age and comorbidity on choice of treatment and prognosis in advanced NSCLC.

Patients and methods

Patients

Patients with cyto-histological diagnosis of NSCLC stages III-B or IV according to the TNM system [7], between January 1997 and June 2006, were analysed retrospectively.

Exclusion criteria were as follows: performance status (PS) >2 according to the Eastern Cooperative Oncology Group (ECOG) or death before treatment due to causes unrelated to neoplastic disease.

The oncological committee of our hospital (comprising physicians from the oncology, radiotherapeutic oncology...