

Case 3

Tube feeding due to aspiration pneumonia

Clinical summary



Presentation/clinical history

Mrs C, 70 years, is a housewife who lives with her husband

- Admitted to the medical assessment unit 2 days ago with confusion, lethargy and shortness of breath.
- Diagnosed with a chest infection and exacerbation of COPD and possible aspiration pneumonia, commenced IV antibiotics.
- Referred to the dietitian, as nutritional screening and poor oral intake indicates high nutritional risk. Also referred to speech and language therapist as coughing observed at meal times.
- Past medical history: osteoarthritis, COPD
- Medication: calcium/vitamin D supplement, saline nebuliser, paracetamol, IV antibiotics
- Biochemistry: Na 144 mmol/l, K 3.6 mmol/l, Ur 8.6 mmol/l, Cr 110 µmol/l, Ca 2.3 mmol/l, PO₄ 0.98 mmol/l, Mg 0.72 mmol/l



Enteral nutritional support should commence early to minimise malnutrition risk.²⁰



Weight history

- Previous situation: Mrs C reports no weight loss, but clothes seem loose

Current weight **55.4 kg** (BMI: 21.1 kg/m²)

- No calculated weight loss but visually evident

Nutritional assessment



Estimated nutritional requirements

- Energy: 1994 kcal⁸⁹
(20 kcal x 55.4 kg + 1.2 stress factor due to infection and 1.5 activity factor due to low mobility)
- Protein: 66.5 g (1.2 g/kg)³
- Fluid: 2031 ml (using the 100/50/15 formula)¹⁰



Dietetic assessment

- Reviewed patient on ward. Patient bed-bound. Catheter in situ, contents poor and dark in colour. On IV fluids 8-hourly (1500 ml). Bowels moved today - soft. Biochemistry indicates dehydration, but improving with IV fluids.
- Oral intake minimal, managing 2-3 small glasses of full cream milk and 2-3 cups of tea with 2 teaspoons of sugar daily, approx. 500 kcal and 10 g protein. Family reports no recent weight loss but do report coughing with drinks in particular.
- High risk of malnutrition: low intake and BMI at lower end of healthy range.
- Short-term nasogastric tube feeding²¹ is indicated, as lethargy and shortness of breath significantly reduces oral intake.



Aim

- Maintain nutritional status and meet nutritional requirements.

Tube feeding with Fresubin



Nutrition therapy

Type of feeding tube: Freka 8Fr nasogastric tube

- Low re-feeding syndrome risk, but feed to start slowly and monitor biochemistry to ensure stability.²⁰
- Higher calorie feed is needed to prevent fluid overloading. Hydration requirements will be met after 2 days of tube feeding. Then IV fluid to be discontinued.
- A feed with calcium and the RDD of 20 µg vitamin D is required to help reduce the risk of fractures and falls.^{12,13}
- A feed containing fibre is also indicated to help maintain gut physiology.¹⁴⁻¹⁶

Day



Feeding regime

- 500 ml Fresubin Energy Fibre at 25 ml/hr x 16 hr (400 ml) approx. 7 a.m.-11 p.m. with 100 ml water flushes pre- and post-feed.
- 1000 ml Fresubin Energy Fibre at 50 ml/hr x 16 hr (800 ml) approx. 7 a.m.-11 p.m. with 100 ml water flushes pre- and post-feed.
- 1000 ml Fresubin Energy Fibre at 75 ml/hr x 13.5 hr approx. 7 a.m.-8.30 p.m. with 100 ml water flushes pre- and post-feed providing 1500 kcal, 56 g protein, 15 g fibre and 960 ml fluid.

Monitoring/Follow Up

- Feed well-tolerated, currently running at 25 ml/hr. Mrs C remains lethargic and slightly confused, unable to recall oral intake. Reviewed by speech and language therapist, abnormal swallow diagnosed. To commence thickened fluids and mashed diet.
- Biochemistry checked. Dehydration now corrected: not overloaded. IV fluids to be discontinued. Feeding without problems at 50 ml/hr. Increase rate Fresubin Energy Fibre to 75 ml/hr x 13.5 hr to reach full feeding volume.
- Breathlessness improved significantly. Weight 56 kg, meeting nutritional requirements. Tolerating feed as prescribed. Bowels moving, no problems reported. Continue with feeding on Fresubin Energy Fibre at 100 ml/hr x 10 hr with 100 ml water flushes pre- and post-feed.
- IV antibiotics completed. Patient more mobile around ward. Bowels moving well, urine output good. Oral intake significantly improved. Managing at least 1/2 of mashed main meals and enjoying thickened full cream milk (3-4 glasses daily). Fresubin Energy Fibre at 100 ml/hr x 5 hr in the evening, as patient is not meeting nutritional requirements orally.
- Patient more alert today and continues to be mobile. Managing meals and 3 glasses of thickened full cream milk. Feeding well tolerated at 100 ml/hr x 5 hr. Oral intake approx. 1700-1800 kcal and 65 g protein. Thus, patient is meeting nutritional requirements for weight maintenance. Request weight from nursing staff.
- Weight 56.8 kg. Feeding discontinued, nasogastric tube removed. Oral intake back to normal, managing 2-3 mashed courses at meals with thickened full cream milk in-between meals. Bowels moving well, urine output normal. Patient feeling well and looking forward to getting home.
- Mrs C discharged from hospital, back to independent life on thickened fluid and mashed diet. Instructed to contact GP for referral to community dietitian if oral intake decreases. For review by community speech and language therapist.

Mrs C was able to meet her full nutritional requirements within 3 days with all macro- and micronutrients including the RDD of 20 µg vitamin D and 15 g fibre.

Therapeutic outcome



At discharge, 2 weeks after start of enteral tube feeding

- Mrs C's weight increased, stable at 56.8 kg with BMI in healthy range.
- All micronutrients provided including 20 µg vitamin D per RDD which may improve muscle strength and muscle function and may also reduce the risk of falls and fractures.^{12,13}
- Maintenance of gut physiology was promoted by 15 g fibre in 1000 ml Fresubin Energy Fibre.¹⁴⁻¹⁶
- Short-term nasogastric tube feeding with Fresubin Energy Fibre aided Mrs C to recover from aspiration pneumonia by meeting her full nutritional requirements, helped to reduce complications⁴ and allowed her to be discharged home independently on a texture modified diet.

