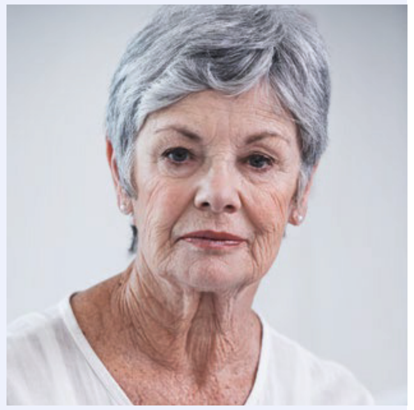
Case 3

Short-term nasogastric feeding during acute illness in dementia

Clinical summary



Presentation/clinical history

Mrs K, 72 years, grandmother living with dementia

- Admitted to hospital for IV antibiotics for a recent severe chest infection
- Nutritional screening: identified as high risk as she has lost 11.4 % of body weight in the past 6 months. Oral intake is minimal.
- Regular coughing fits following food – reviewed by speech and language therapist. Diagnosed with dysphagia as a consequence of her dementia progression, subsequently commenced on a minced and moist diet with mildly thick fluids (stage 1).
- Feeding with nasogastric (NG) tube in the short term indicated due to very poor oral intake and to overcome chest infection, especially as new onset dysphagia.[23]
- Medical history: dementia (2 years ago), reflux, eczema
- Medications: lansoprazole, diprobase cream
- Biochemistry: Na 133 mmol/l, K 3.9 mmol/l, Ur 3.9 mmol/l, Cr 39 µmol, Ca 2.05 mmol/l, PO_4 0.73 mmol/l, Mg 0.69 mmol/l, CRP 201 mg/l, albumin 30 g/l

Short-term nasogastric tube feeding indicated in patients with dementia to overcome acute illness, especially when dysphagia is newly diagnosed.[23]

Weight history

Normal weight	69 kg (BMI: 24.7 kg/m²)
Current weight	61.1 kg (BMI: 21.9 kg/m²)

- Weight loss: **11.4 %** in 6 months – significant

Nutritional assessment

Estimated nutritional requirements

- Energy: 1760 kcal[5,6] (20 kcal x 61.1 kg + 1.2 stress factor due to infection and 1.2 physical mobility factor due to being immobile on ward)
- Protein: 91.7 g (1.5 g/kg)[24]
- Fluid: 2117 ml (using the 100/50/15 formula)[8]

Dietetic assessment

- Unable to meet nutritional requirements: oral intake very poor for past 2 days, < 1/3 of meals, normally enjoys snacking (est. 300 kcal + 15 g protein). As protein requirements are high especially during chest infection, intensive short-term nutrition support via NG tube indicated.[23]
- 7-day course of IV antibiotics to be completed. Currently on 6 hourly IV fluids (2000 ml).
- Significant weight loss (11.4 %) over past 3-6 months and magnesium borderline low, therefore moderate risk of re-feeding.[20]
- Appears to be slightly overhydrated. IV fluid to be reduced to 8 hourly (1500 ml) until feeding established.
- CRP and albumin indicative of inflammation/infection.

Aim

- Meet full nutritional requirements to prevent further depletion in nutritional status and aid recovery from acute illness.

Tube feeding with Fresubin

Nutrition therapy

Type of feeding tube: nasogastric tube – 8Fr Freka

- Moderate risk of re-feeding syndrome but high protein requirement, commence feeding cautiously – not exceeding 50 % of requirements on day 1 of feeding.[20]
- Correct magnesium before starting feed and commence multivitamin until full micronutrients needs are met.[20]
- Fibre containing feed is indicated to help maintain gut physiology.[13,25]

Fresubin HP Energy Fibre is nutritionally complete and provides high protein to meet increased needs during chest infection.

Day

Feeding regime

1 Fresubin HP Energy Fibre 500 ml at 25 ml/hr x 16 hr (approx. 7 a.m.-11 p.m.) with 50 ml water flushes pre- and post-feed (using 400 ml).

2 Fresubin HP Energy Fibre 1000 ml at 50 ml/hr x 16 hr (approx. 7 a.m.-11 p.m.) with 50 ml water flushes pre- and post-feed (using 800 ml feed).

3 Fresubin HP Energy Fibre 1000 ml 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.

Full feed provides 1500 kcal, 75 g protein, 15 g fibre, 990 ml fluid and is nutritionally complete in micronutrients. Monitor biochemistry including hydration status. IV fluids can be discontinued on day 3 if oral intake over 1000 ml.

Monitoring/follow-up

2 Tolerated feed very well at 25 ml/hr – feed currently running at 50 ml/hr as per regime. Oral intake remains stable despite change of textures. Sodium, urea and creatinine normalising. Magnesium 0.71 mmol/l, therefore in normal range. Continue feeding regime as planned.

4 Tolerated feed well at 75 ml/hr for 13.5 hr with 100 ml water flushes. Continues on IV antibiotics. Bowels moving well, urine output good. Oral intake slightly improved, approx. 450 kcal and 20 g protein. Weight today 61.4 kg, therefore meeting nutritional requirements – total intake 1950 kcal, 95 g protein and 2100 ml fluid. Increase rate of feed to 100 ml/hr x 10 hr (approx. 7 a.m.-5 p.m.) on 1000 ml Fresubin HP Energy Fibre. Review in 2-3 days.

7 Condition and mobility improving. IV antibiotics to be completed tomorrow. Oral intake as before. Weight 61.8 kg – small increase (no oedema noted), therefore continues to meet nutritional requirements. Continue with feed on Fresubin HP Energy Fibre 1000 ml and increase to 125 ml/hr x 8 hr to reduce length of time on feed and monitor weight.

10 IV antibiotics discontinued. Oral intake improving, managing at least 1/2 minced and moist main courses and enjoying desserts very much. Intake approx. 1350 kcal and 45 g protein. Weight 61.9 kg – stable. Bowels moving well, no problems. Reduce feed to 500 ml Fresubin HP Energy Fibre in the evening (7 p.m.-11 p.m.) at 125 ml/hr with 100 ml water flushes pre- and post-feed. Commence Fresubin thickened ONS 1-2 x per day to maximise oral intake. Review in 2-3 days, if oral intake increased again, nasogastric feeding tube can be removed.

14 Oral intake improved again, approx. 1800 kcal and 80 g protein – eating 2 courses at meal times plus 2 x Fresubin thickened ONS daily, plus extra desserts and milkshakes. Weight 61.9 kg, therefore still meeting nutritional requirements for weight gain. Stop feed and remove feeding tube. Continue with regular meals and snacks on minced and moist diet and mildly thick (stage 1) fluids to ensure weight maintenance.

Supplemental tube feeding using a high protein (20 en%), energy dense (1.5 kcal/ml) feed helped improve nutritional status and support Mrs K through a short period of acute illness where her nutritional requirements were increased and where transition to a texture-modified diet took place.[23]

Therapeutic outcome

1 month post discharge

- Outpatient, living with the support of her daughter and continuing on a minced and moist diet with mildly thick (stage 1) fluids. No longer requires oral nutritional supplementation and is able to maintain nutritional status at approx. 62 kg through her texture modified diet with food fortification advice.
- Fresubin HP Energy Fibre provides 15 g fibre to help meet fibre needs and maintain gut physiology.[13,14,25]
- Meeting protein requirements combined with vitamin D in a small volume with Fresubin HP Energy Fibre, may have also helped to improve muscle strength and muscle function.[16,17]