

Case 4

Tube feeding with depression

Clinical summary



Presentation/clinical history

- Mrs E, 80 years, is a frail lady living alone**
- Admitted to hospital for investigation into significant weight loss and urinary tract infection. Low mood reported since husband passed away 3 years ago.
 - Mrs E looks frail and emaciated.
 - Nursing staff requests dietetic review for possible tube feeding.
 - Past medical history: depression, hypertension, history of falls, previous hip fracture
 - Medication: mirtazapine, calcium and vitamin D supplement, paracetamol
 - Biochemistry: Na 140 mmol/l, K 4.4 mmol/l, Ur 6.2 mmol/l, Cr 72 µmol/l, Ca 2.5 mmol/l, PO₄ 1.1 mmol/l, Mg 0.62 mmol/l



Weight history

5 years ago	51.1 kg (BMI: 21.3 kg/m ²)
Current weight	38.7 kg (BMI: 16.1 kg/m ²)

- Very significant **24.3%** weight loss over past 5 years and BMI very low

Nasogastric tube feeding helps nutritional requirements to be met quickly following admission with a PEG meeting longer term needs.²⁰

Nutritional assessment



Estimated nutritional requirements

- Energy: 1393 kcal⁸⁹
(20 kcal x 38.7 kg + 1.2 stress factor due to infection and 1.5 activity factor due to low mobility)
- Protein: 58 g (1.5 g/kg)³
- Fluid: 1780 ml (using the 100/50/15 formula)¹⁰



Dietetic assessment

- Mrs E is unable to meet her nutritional requirements - oral intake very poor, managing approx. 1/4 of meals. On 12-hourly subcutaneous fluids due to poor vein access.
- Very significant 24.3 % weight loss reported over past 5 years. BMI low, magnesium low, at high risk of re-feeding. Start feeding cautiously - don't exceed 50 % of requirements on day 1 of feeding.²⁰



Aim

- Maintain nutritional status and meet nutritional requirements.

Tube feeding with Fresubin



Nutrition therapy

- Type of feeding tube: Freka 8Fr nasogastric tube**
- Nasogastric tube feeding on Fresubin Original Fibre due to risk of re-feeding syndrome. A 1 kcal/ml feed is indicated in the first instance.
 - A feed containing fibre is also indicated to maintain gut physiology.¹⁴⁻¹⁶
 - Due to refeeding syndrome risk, low magnesium to be corrected, multivitamin and 100 mg thiamine twice daily to be commenced prior to feeding^{19,20}
 - Continue to monitor biochemistry and stop IV fluids tomorrow to prevent fluid overloading.



Fresubin Original Fibre is normo-caloric nutritionally complete feed and suitable for cautious feeding i.e. patients at risk of re-feeding syndrome.

Day



Feeding regime

- 500 ml Fresubin Original Fibre at 25 ml/hr x 16 hr (400 ml) approx. 7 a.m.-11 p.m. with 100 ml water flushes with medication pre- and post-feed to meet hydration requirements. Don't increase rate of feed until biochemistry checked.
- 1000 ml Fresubin Original 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 providing 800 kcal, 30.4 g protein, 12 g fibre and 870 ml fluid.

Monitoring/Follow Up

- Feeding commenced at 25 ml/hr and well-tolerated. Biochemistry checked. Urine and stoma output without problems. Mg supplementation continued. Continue with Fresubin Original Fibre at 50 ml/hr x 16 hr.
- Reviewed patient on ward. Oral intake not improved but feed well-tolerated. Biochemistry within reference ranges, Mg supplementation stopped as level now 0.8 mmol/l. Increase feed to 1000 ml Fresubin Original Fibre at 75 ml/hr (approx. 13.5 hr), providing 1000 kcal, 38 g protein, 15 g fibre and 1040 ml fluid.
- Oral intake still very poor due to low mood equivalent to 200 kcal and 5 g protein, but managing approx. 500 ml of fluids daily. Feed provides > 80 % of requirements. As Mrs E's protein requirements are not being met and her energy and fluid requirements are relatively low; change feed to Fresubin 1200 Complete (1000 ml at 75 ml/hr x 13.5 hr) providing 1200 kcal, 60 g protein, 15 g fibre, 1040 ml and all micronutrients.
- Weight 40.1 kg, meeting nutritional requirements. Biochemistry parameters stable within normal ranges. Fresubin 1200 Complete tolerated well. Increase feeding rate to 100 ml/hr x 10 hr to reduce length of time on feeding.
- Tolerating feed well, weight stable at 40.3 kg, but oral intake still very poor, despite change of anti-depressant, mood not improving.
- Patient referred to gastroenterology department for percutaneous endoscopic gastrostomy (PEG) as oral intake not improved²¹, likely to be longer-term problem.
- 15Fr Freka PEG sited - water running as per protocol, to recommence feeding in 3 hr.
- Feed continues on Fresubin 1200 Complete at 100 ml/hr with 100 ml fluid pre- and post-feed. As her condition is stable, Mrs E is able to be transferred back home. Mrs E will be unable to complete daily administration of feed independently therefore community nursing team will attend patient home 2 x daily to start and stop feed as well as carer to provide personal hygiene. Letter to GP and referral to community dietitian.

Fresubin Original Fibre was tolerated providing vital nutrition in the initial phase of feeding. Fresubin 1200 Complete provides high protein, low energy and all micronutrients to meet Mrs E's nutritional requirements in a low volume.

Therapeutic outcome



8 weeks after start of enteral tube feeding

- Mrs E is back living in her own home with care at home provided by community nursing teams to help with personal care and her PEG. Oral intake still poor but she is now able to attend a local day centre to socialise.
- Nasogastric tube feeding enabled Mrs E to meet nutritional requirements quickly following admission with a PEG meeting longer needs.
- Fresubin Original Fibre was tolerated providing vital nutrition in the initial phase of feeding.
- Fresubin 1200 Complete provides high protein, low energy and all micronutrients and is nutritionally complete in one EasyBag.
- Fibre provided by both enteral feeds help maintain gut physiology.¹⁴⁻¹⁶
- The vitamin D content (20 µg per RDD) may improve muscle strength and muscle function and may also reduce the risk of falls and fractures.^{12,13}
- Both Fresubin Original Fibre and Fresubin 1200 Complete contain fish oil which may provide cardiovascular benefits.¹⁷
- When a change of feed was required, Mrs E retained these benefits since all Fresubin standard enteral tube feeds are nutritionally complete per recommended daily dosage including 20 µg vitamin D per RDD.