

ONS & Cancer Cachexia



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Cancer cachexia (wasting syndrome) can markedly compromise quality of life, increase the likelihood that a patient will respond poorly to treatment and is associated with decreased survival.¹ Cancer cachexia affects 50-80% of patients with malignancies, accounts for up to 20% of cancer deaths and can prove difficult to manage.¹ This case illustrates that a nutritious diet supported by high energy, high protein, low volume, oral nutritional supplements (ONS) can promote weight gain and improve outcomes in malnourished elderly patients, such as those with cancer cachexia.

Presentation

Joan, a 76-year-old lady, presented to A&E with a six-month history of weight loss and reduced appetite. A computed tomography (CT) scan revealed a mass in her left breast. Biopsies confirmed a grade 2 carcinoma, while a positron emission tomography (PET) scan identified multiple liver and bone metastases.

On admission for her diagnostic tests, Joan was referred to the dietetic outpatient clinic for low body mass index (BMI: 18.3 kg/m²), poor appetite, recent unintentional weight loss and a Malnutrition Universal Screening Tool ('MUST') score of 2, suggesting that she was at high risk of malnutrition.² Two weeks later Joan saw her oncology consultant. Joan expressed a strong wish not to have chemotherapy and started palliative hormonal and monoclonal antibody therapy.

Joan attended the dietetic clinic two weeks after seeing the oncologist. Joan showed unintentional weight loss of 18% over the previous five months (Table 1), as well as muscle wasting at her temples, cheekbones, hands and legs. Joan also felt fatigued and said she often felt unsteady while walking. She lacked the energy and confidence to leave the house and spent most of the day indoors by herself.

Joan's food intake had steadily declined for six months and she usually skipped lunch, mainly because of a lack of appetite and feeling too fatigued to prepare food. Her husband prepared evening meals, but other

commitments meant that he was unable to do so during the day. The dietitian estimated that Joan consumed 60% of her energy and protein requirements and her diet lacked variety (Table 2).

Table 1: Changes in Weight and Body Mass Index

	Weight (kg)	Body mass index (kg/m ²)
Initial assessment	41.8	17.9
1st review (2 months)	47.4	20.3
2nd review (4 months)	51.0	21.8

Table 2: Estimated Energy, Protein and Fluid Intake Compared with Requirements

	Requirement	Formula	Intake	Deficit
Energy (kcal)	1800	Henry x 1.4 PAL + 400 kcal weight gain	1100	700
Protein (g)	50-63	1.2-5 g/kg/day PROT-AGE study group (older adults with acute or chronic disease)	30	20-33
Fluid (ml)	1300	30 ml/kg/day (>60 years)	1500	Nil

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The dietetic goals were to prevent further unintentional weight loss in the short-term and promote weight gain in the longer term. Joan wanted to reach her previous body weight of 51 kg (BMI 22 kg/m²), increase her energy levels and feel steadier when walking.

Management

The dietitian encouraged Joan to eat “*little and often*” and explained how to fortify food. Joan, however, did not feel confident that she would be able to increase her food intake sufficiently to meet her nutritional requirements. Nevertheless, she drank plenty of water and enjoyed milky drinks. So, the dietitian suggested a trial of an oral nutritional supplement (ONS) that provided an extra 600 kcal, 36 g protein per day and a range of minerals and vitamins to meet her nutritional requirements.

Joan’s large unintentional weight loss and low BMI meant that she met one of the indications specified by the Advisory Committee on Borderline Substances for the use of ONS (disease-related malnutrition).³ The high protein content of the ONS aimed to strengthen Joan’s legs.^{4,5} Joan felt that the ready-to-drink formulation would work because the ONS required minimal preparation when she felt fatigued.

First review

When Joan attended the dietetic clinic two months later, she reported that she had started eating more regularly throughout the day and usually managed a small, balanced lunch. Joan said that she used some of the food fortification techniques discussed at her first appointment and took the high energy, high protein, low volume ONS twice daily. She liked the taste of the ONS, which did not affect her appetite and was easy to consume alongside food. Joan’s appetite was slowly returning and she had more energy for cleaning and cooking.

Joan was very pleased to learn that she had gained 5.6 kg over the previous two months (Table 1). The dietitian advised Joan to continue consuming regular meals, snacks and nourishing fluids throughout the day. Her ONS prescription was reduced to once daily.

Second review

At the second review, four months after the dietetic assessment, Joan had gained a further 3.6 kg and had reached her personal goal of 51 kg (Table 1). She looked healthier, was walking without the aid of an arm or a stick, and had the confidence to go out and about by herself during the day. Joan said that she felt that she had regained her independence.

Joan’s appetite had improved and she was eating three meals a day with at least two snacks. Joan was advised to stop taking the high energy, high protein, low volume ONS, to focus on regular balanced meals and drinking nourishing fluids, and was discharged.

Learning points

Joan’s case illustrates that a nutritious diet supported by high energy, high protein, low volume ONS can promote weight gain and improve outcomes in malnourished elderly patients, such as those with cancer cachexia. Joan was prescribed two ONS drinks each day for 12 weeks, which is in line with the Managing Adult Malnutrition in the Community Pathway for frail elderly patients with chronic conditions.⁶ Joan regained the weight that she had lost. Her energy levels, general strength and appetite all improved.

The high energy, high protein, low volume ONS helped Joan meet the requirements of people older than 65 years of age who have acute or chronic diseases. Older patients need more dietary protein than younger people to support good health, promote recovery and maintain functionality.⁴ In addition, dietary protein combined with exercise aids the recovery and maintenance of muscle strength and function in older people.^{4,5}

Elderly patients, especially if they are unwell, can find reconstituting powders difficult and, as mentioned, they may be unable to manage large volumes. The bottles of ready-to-drink ONS helped her maintain her nutritional intake when she felt fatigued, and the small volume did not affect her appetite or food intake. As a result, Joan’s quality of life improved markedly: she was really pleased that she had reached her previous body weight and to have regained her independence.

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References: **1.** Vanhoute G, et al. (2016). Cachexia in cancer: what is in the definition? *BMJ Open Gastroenterol.* 3:e000097. **2.** BAPEN (2018). Malnutrition Universal Screening Tool. Accessed online: www.bapen.org.uk/pdfs/must/must_full.pdf. (Sept 2018). **3.** BAPEN (2016). Oral Nutritional Supplements. Accessed online: www.bapen.org.uk/nutrition-support/nutrition-by-mouth/oral-nutritional-supplements (Sept 2018). **4.** Bauer J, et al. (2013). Evidence-based recommendations for optimal dietary protein intake in older people: a position paper from the PROT-AGE study group. *J Am Med Dir Assoc.* 14(8): 542-559. **5.** Deutz NEP, et al. (2014). Protein intake and exercise for optimal muscle function with aging: Recommendations from the ESPEN Expert Group. *Clin Nutr.* 33(6): 929-936. **6.** Malnutrition Pathway (2017). A Guide to Managing Adult Malnutrition in the Community. Accessed online: www.malnutritionpathway.co.uk/library/managing_malnutrition.pdf (Sept 2018).