

Acute exacerbation of cystic fibrosis (CF) secondary to influenza

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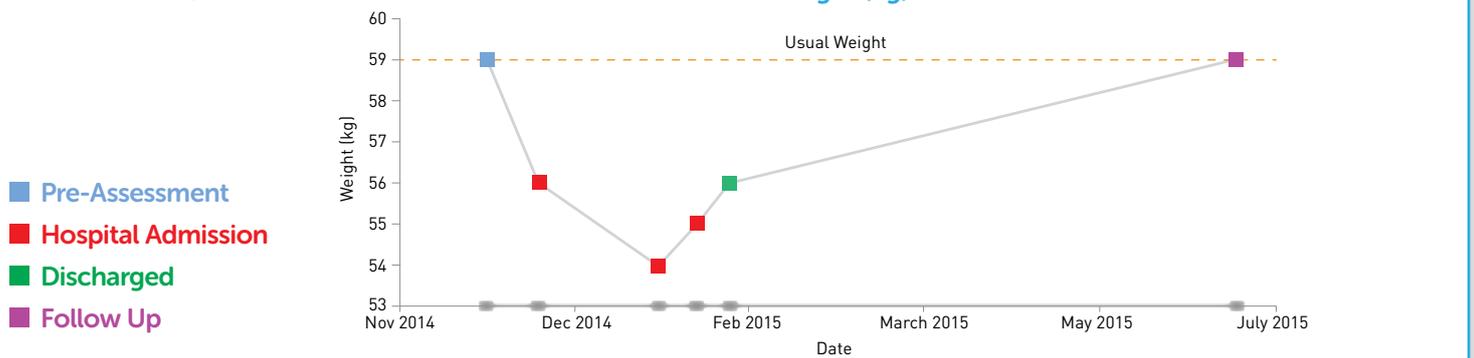
Patient Details & Medical History

Age: 31 years	Gender: 	Diagnosis: CF, CF related diabetes and liver disease.
Medications: Pancreatic enzyme replacement therapy, Insulin injections, Proton pump inhibitor (Anti-reflux), Ursodeoxycholic acid, laxative, Prokinetic agent (Constipation relief).	Nutritional supplements: Fat-soluble vitamins (A,D,E + K). Calcium. Sodium chloride.	Reason for referral: Not formally referred as all patients with CF are automatically seen by dietitian at clinic appointments and during inpatient admissions.



Dietetic Assessment

Anthropometry:



% Weight loss: 5% over 19 days	Admitted: December 2014	Discharged: February 2015 (48 days)
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Biochemistry: Bloods on admission ↓ Potassium ↓ Urea ↓ Albumin ↑ C-Reactive Protein	Clinical: Poor appetite due to 1-week history of vomiting and flu-like symptoms. Confirmed influenza on 20th December in addition to CF exacerbation. Patient reliant on Non-invasive Ventilation (NIV) for most of the day during admission.
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Dietary:

- Patient usually has a good appetite, enjoys a varied diet and maintains her weight at 59kg. Oral Nutritional Supplements (ONS) are not usually needed to meet her increased energy requirements. On admission, the patient was struggling to eat anything other than fresh fruit despite being encouraged to have milky drinks and ONS.

Estimated Requirements:

Energy: 59kg x 35kcal/kg + 50% SF = **3,100kcal/day** (Henry, 2005)

Protein: 1.5g x 59 = **89g protein/day** (ASPEN, 2002)



Dietetic Management

22nd December:

No improvement in dietary intake therefore patient provided with a variety of ONS to try. Initially, she struggled to take due to a dry mouth but eventually agreed to have a compact, milkshake style ONS tds. Managed to take these for approx. 10 days but then wanted to change ONS.

2nd January:

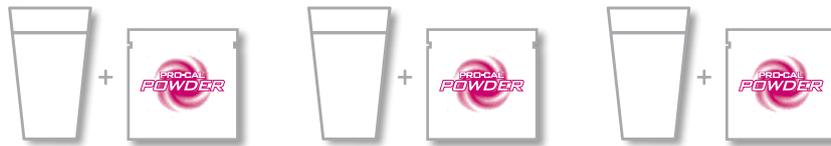
Powdered high calorie, high energy supplement prescribed bd (1,176kcal) due to taste preference and gradually increased to tds (1,764kcal) throughout admission.

6th January:

NG feeding discussed but patient struggled to come off NIV and didn't feel she would cope with tube being passed.

Pro-Cal powder[®] discussed and patient agreed to take 1 sachet in each powdered high calorie, high energy supplement. Providing 2,064kcal & 41g of protein for 3 servings. By end of admission patient had reduced powdered high calorie, high energy supplement with Pro-Cal powder to od-bd.

Multivitamin prescribed as patient's supplement preferences not nutritionally complete.



Follow Up

Progress:

As the influenza and CF exacerbation resolved, she became less dependent on NIV and appetite improved. Gained 2kg prior to discharge with powdered high calorie, high energy supplement with added Pro-Cal powder sachets tds in addition to dietary intake.

Compliance & tolerance:

Patient managed Pro-Cal powder tds. Well tolerated, easy and convenient to mix into food/drink/other ONS without affecting taste or consistency.

Completion of treatment:

Post-hospital discharge, ONS usage was reduced, by March 9th, to PRN, for use during CF exacerbations if/when appetite reduces. The patient managed to increase her weight to 59kg. An improvement in appetite was attributed to her infection resolving, in addition to her returning home which gave her greater access to familiar foods.

On-going Dietetic Management:

Now, when CF exacerbations re-occur she re-commences powdered high calorie, high energy supplement with Pro-Cal powder tds.



Management of similar cases

Another patient with CF finds it convenient to mix Pro-Cal powder into hot chocolate to assist with weight stability.

References

- ASPEN Board of Directors and the Clinical Guidelines Task Force. (2002). *Guidelines for the use of parenteral and enteral nutrition in adult and paediatric patients*. Journal of Parenteral and Enteral Nutrition 26 (11).
- Henry, C.J. (2005). *Basal metabolic rate studies in humans: measurement and development of new equations*. Public Health Nutrition, 8(7A) 1133-1152.



Innovation in Nutrition

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All information correct at the time of print

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