Abrupt weight loss in an elderly woman

By Sarah Curulli

Pharmacists routinely use investigative questioning in their pharmacy practice. Medication mystery scenarios are commonly occurring situations where detailed questioning uncovers a complex case requiring a substantial intervention. These articles demonstrate how a pharmacist can adopt a systematic problem solving approach to improve patient outcomes.

For educational purposes, questions and answers are presented collectively, while in practice, questions would be asked and answered sequentially.

Learning objectives

After reading this article you should be able to:

- Identify potential causes of reduced appetite and weight loss in elderly patients
- Discuss strategies which may be used to increase appetite in an elderly patient
- Provide advice to elderly patients regarding management of unwanted weight loss.

**Competency standards (2010) addressed:**

1.5.2, 6.1.1, 6.1.2, 6.2.1, 6.2.2, 7.1.1, 7.1.2, 7.2.2, 7.2.4

**Accreditation number:** CAP110101g

Sarah Curulli is an Australian pharmacist currently working in the UK.

Case presentation

Sheila is an 85-year-old customer who visits your pharmacy regularly. Recently, you have noticed that she has experienced significant weight loss, and on this particular occasion appears pale and weak. Sheila asks for advice as she has been feeling increasingly lethargic, and would like to purchase a product to help her ‘put on some weight and have more energy’. Your dispensary records show that Sheila is currently taking metformin 500 mg, paracetamol SR 665 mg and ranitidine 150 mg occasionally.

Information gathering

You speak with Sheila to investigate the cause of her significant weight loss.

1. Symptoms

- Can you describe your eating habits?
- Have you experienced a change in appetite?

Sheila tells you that she currently has a very poor appetite. She eats two meals a day, which consist of a small amount of bread, a poached egg and occasionally some fruit and vegetables. She drinks eight cups of water per day, and her daughter gave her some rehydration icy-poles which make her feel a little better in between meals.

A variety of factors, both physiological and psychological, can lead to a reduced appetite in elderly patients. It is thought that increased levels of circulating concentrations of the satiating hormone (cholecystokinin) and a decrease in the opioid feeding drive hormone (dynorphin) may contribute to the decreased level of hunger which occurs with advanced age. In addition to this, elderly patients often have reduced physical activity levels and an altered metabolic rate due to the normal ageing process.

2. Onset of symptoms

- How long have you had a reduced appetite?
- How much weight have you lost?

Sheila has experienced a reduced appetite for around six months now. Over the past few months she has lost more than 6% of her original body weight. She currently weighs 45 kg and you calculate her BMI as 19 kg/m² (height=154 cm).

A loss of 4.5 kg, or more than 5% of the usual body weight over a period of six to 12 months can be described as clinically important weight loss, especially if it is progressive. Elderly patients are at an increased risk of developing protein-energy malnutrition and micronutrient deficiencies due to a reduction in daily food intake. Protein-energy malnutrition is defined as weight loss of more than 10% over a period of six to 12 months. Long term protein-energy malnutrition is associated with increased levels of hospitalisation and mortality.

3. Medical history

- Tell me about the medicines you are taking (including over-the-counter and herbal medicines)?
- Do you have any medical conditions?

Sheila confirms that she is currently taking metformin 500 mg, paracetamol SR 665 mg and ranitidine 150 mg occasionally. She also mentions that she is taking tiotropium 18 mcg which she gets from the hospital pharmacy where her lung specialist works. She has a note from her GP (which she always carries with her in case of an emergency) that indicates that she has chronic obstructive pulmonary disease (COPD), hypertension, peptic ulcer disease (PUD), osteoarthritis (OA) and Type 2 diabetes mellitus.
Weight loss in older people may be attributed to certain medications and/or medical conditions. Some diseases may alter appetite and produce either malabsorption or increased metabolism of food. Side effects of medications such as nausea, dry mouth and dyspepsia may also contribute to a reduced appetite and subsequent weight loss.

4. Previous and current treatment

• When did you last see your GP?
• Have you had any blood tests recently?

Sheila visited her GP last month. Her GP conducted a full blood test and told that most of her results appeared to be within normal levels. Her GP was concerned about her diabetes (Hba1c result: 9%).

Sheila’s recent test results indicate that her diabetes is not well controlled. Persistent poor glycaemic control may result in oral manifestations of diabetes which may contribute to a reduced appetite and hence weight loss.

Assessment

Sheila has experienced an unexplained reduction in appetite and subsequent weight loss. Possible causes of reduced appetite and weight loss in the elderly include:

• Cancer/malignancies account for around one-third of patients who present with unintentional weight loss.

Sheila recently visited her GP and he did not report and signs or symptoms that may indicate malignancy.

• Gastrointestinal conditions are the second most common cause of unintentional weight loss, accounting for about 15% of published cases. Peptic ulcer disease, constipation, inflammatory bowel disease and coeliac disease are gastrointestinal conditions that can cause weight loss. Abdominal discomfort and altered gastric motility may also contribute to a reduced appetite.

Sheila has a history of peptic ulcer disease which may be contributing to her reduced appetite. When questioned, she reveals that the occasional ranitidine is controlling her symptoms and she does not have any abdominal discomfort at present.

• Cardiovascular disease can lead to unexplained weight loss due to a variety of mechanisms, the main two being increased metabolic demand and a reduced appetite with subsequent decreased calorie intake. Poor blood flow to the gut after a meal can cause abdominal discomfort, otherwise known as intestinal angina, which can lead to patients developing a fear of eating.

Sheila does not have cardiovascular disease and a recent full blood evaluation showed no abnormalities. Mesenteric ischaemia (or poor blood flow to the gut) can usually be confirmed by a raised white blood cell (WBC) or raised lactic acid level in blood tests, along with clinical symptoms.

• Neurological illnesses such as Parkinson’s disease and dementia have been associated with weight loss in the elderly population. Parkinson’s disease has been linked with intestinal dysmotility and increased caloric demands. The cognitive decline seen with dementia often reduces interest in eating and consequently leads to unintentional weight loss.

Sheila does not have severe COPD so this is unlikely to be cause of her weight loss.

• Advanced age can be linked with a reduced appetite and unexplained weight loss due to a range of factors. It is thought that increased levels of circulating concentrations of the satiating hormone (cholecystokinin), and a decrease in the opioid feeding drive hormone (dynorphin) may contribute to the decreased level of hunger which occurs with advanced age. Reduced levels of nitric oxide, which may be found in older people, are also thought to play a role in the regulation of food intake.

As Sheila is 85 years of age the normal ageing process may be affecting her appetite and contributing to her weight loss.

• Depression and anxiety. Depression is one of the leading causes of unintentional weight loss seen in elderly patients. It is thought that because depression can lead to a decrease in enjoyment of pleasurable events (such as eating), some patients may have a subsequent reduced energy intake. Anxiety has been linked with several gastrointestinal disorders (such as dyspepsia), which may contribute to weight loss.

Sheila does not have any symptoms of anxiety.

• Chronic obstructive pulmonary disease (COPD) in the late stages can result in an increased use of accessory muscles of respiration. This can lead to a higher metabolic demand and subsequent weight loss. Breathlessness, unintentional swallowing of air and side effects of COPD medications can also cause early satiety, bloating and dyspepsia which can all contribute to reduced food intake.

Sheila does not have COPD.

You ask Sheila to complete a Depression Symptom Checklist. Her responses do not indicate the need for medical referral for possible depression and she does not report any symptoms of anxiety.

Continuing Professional Development

Pharmacist

Submit your answers online at www.psa.org.au and receive automatic feedback.

Accredited PSA www.psa.org.au

Vol. 30 – January #01

69
Sheila’s current weight loss may be caused by a number of issues. Her poorly controlled diabetes could be causing a reduction in appetite and oral candidiasis. Dry mouth, caused by tiotropium, could also be leading to difficulty in chewing and swallowing, and be contributing to Sheila’s reduced appetite and resultant weight loss.

**Recommendations**

Reduced appetite and weight loss are a common occurrence amongst elderly patients. Weight loss and a significantly low body weight can have serious clinical implications. Elderly patients are at a higher risk of developing protein-energy malnutrition as a result of unexplained weight loss and this can be linked to higher rates of morbidity and mortality. It is often difficult to ascertain the cause of unexplained weight loss. The following table provides a brief summary of the main causes of unexplained weight loss in an elderly patient.

<table>
<thead>
<tr>
<th>M</th>
<th>Medication effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Emotional problems (especially depression)</td>
</tr>
<tr>
<td>A</td>
<td>Anorexia nervosa, alcoholism</td>
</tr>
<tr>
<td>L</td>
<td>Late-life paranoia</td>
</tr>
<tr>
<td>S</td>
<td>Swallowing disorders</td>
</tr>
<tr>
<td>O</td>
<td>Oral factors (e.g. poorly fitting dentures, caries)</td>
</tr>
<tr>
<td>N</td>
<td>No money</td>
</tr>
<tr>
<td>W</td>
<td>Wandering and other dementia-related behaviours</td>
</tr>
<tr>
<td>H</td>
<td>Hyperthyroidism, hypothyroidism, hyperparathyroidism, hypoadrenalism</td>
</tr>
<tr>
<td>E</td>
<td>Enteric problems</td>
</tr>
<tr>
<td>E</td>
<td>Eating problems (e.g. inability to feed self)</td>
</tr>
<tr>
<td>L</td>
<td>Low-salt, low-cholesterol diet</td>
</tr>
<tr>
<td>S</td>
<td>Stones, social problems (e.g. isolation, inability to obtain preferred foods)</td>
</tr>
</tbody>
</table>

The main aim upon discovery of unexplained weight loss should be identifying and treating the underlying cause of the condition, and also providing nutritional support. Sheila has conducted a nutritional assessment at the interview stage and discovered that Sheila consumes a very small amount of food and does not take any nutritional supplements. You have also identified that Sheila has poorly controlled diabetes which could be contributing to her reduced appetite. She is experiencing oral discomfort from oral candidiasis, which you suspect is caused by her poorly controlled diabetes and dry mouth, a side effect of tiotropium.

You recommend that Sheila applies an antifungal mouth gel four times a day for the next week to treat her oral candidiasis. You also refer her back to her GP for a diabetic review, and the establishment of a management plan to help her achieve adequate blood glucose control. In addition, she can treat any oral discomfort with oral lubricants.

The next stage is to provide Sheila with education regarding her nutritional intake. Early nutritional intervention may help avoid future complications due to further weight loss and referral to a dietician may assist with this process. Sheila should try to consume small, frequent amounts of food that she likes, as large portions of food can be overwhelming and may discourage intake. Physical exercise and activity should be encouraged, as this has been shown to increase appetite and food intake. The goal of nutrient intake in patients with a low body weight should be 30–35 kcal/kg per day with at least 20% protein content.

**Follow-up**

Sheila returns to your pharmacy a month later and tells you that she is feeling much better. Her GP has referred her to a diabetes educator, and her blood glucose control has improved immensely. Sheila is no longer experiencing oral candidiasis and her taste perception has improved slightly. She is also visiting a dietician who has provided her with flavour enhancers for her food which has helped to make eating more enjoyable. Her dietician also created an eating plan and Sheila has been trying to stick to this as closely as she can. She now has more energy and appears more vibrant and talkative than at her last visit.

**Sheila has not had protein detected in her urine, she is not having haemodialysis and her creatinine levels were normal in recent blood tests.**

**Sheila’s current weight loss may be caused by a number of issues. Her poorly controlled diabetes could be causing a reduction in appetite and oral candidiasis. Dry mouth, caused by tiotropium, could also be leading to difficulty in chewing and swallowing, and be contributing to Sheila’s reduced appetite and resultant weight loss.**

**Recent test results indicate that Sheila has poor glycaemic control. Upon questioning Sheila reveals that she has a dry and sore mouth and this often makes it difficult to eat.**

**Medication effects**

Tiotropium can cause dry mouth and Sheila has reported oral symptoms which may be affecting her appetite.

**Side effects of medications**

Sheila has been prescribed metformin which can cause abdominal discomfort, although she does not complain of any gastrointestinal symptoms. Tiotropium can cause dry mouth and Sheila has reported oral symptoms which may be affecting her appetite.

**Renal failure**

Sheila is currently prescribed metformin and this may be affecting her appetite. She has reported oral symptoms such as difficulty in chewing, swallowing and significant oral discomfort.

Reduced appetite and weight loss are a common occurrence amongst elderly patients. Weight loss and a significantly low body weight can have serious clinical implications. Elderly patients are at a higher risk of developing protein-energy malnutrition as a result of unexplained weight loss and this can be linked to higher rates of morbidity and mortality. It is often difficult to ascertain the cause of unexplained weight loss. The following table provides a brief summary of the main causes of unexplained weight loss in an elderly patient.

<table>
<thead>
<tr>
<th>M</th>
<th>Medication effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Emotional problems (especially depression)</td>
</tr>
<tr>
<td>A</td>
<td>Anorexia nervosa, alcoholism</td>
</tr>
<tr>
<td>L</td>
<td>Late-life paranoia</td>
</tr>
<tr>
<td>S</td>
<td>Swallowing disorders</td>
</tr>
<tr>
<td>O</td>
<td>Oral factors (e.g. poorly fitting dentures, caries)</td>
</tr>
<tr>
<td>N</td>
<td>No money</td>
</tr>
<tr>
<td>W</td>
<td>Wandering and other dementia-related behaviours</td>
</tr>
<tr>
<td>H</td>
<td>Hyperthyroidism, hypothyroidism, hyperparathyroidism, hypoadrenalism</td>
</tr>
<tr>
<td>E</td>
<td>Enteric problems</td>
</tr>
<tr>
<td>E</td>
<td>Eating problems (e.g. inability to feed self)</td>
</tr>
<tr>
<td>L</td>
<td>Low-salt, low-cholesterol diet</td>
</tr>
<tr>
<td>S</td>
<td>Stones, social problems (e.g. isolation, inability to obtain preferred foods)</td>
</tr>
</tbody>
</table>

The main aim upon discovery of unexplained weight loss should be identifying and treating the underlying cause of the condition, and also providing nutritional support. You have:

- Conducted a nutritional assessment at the interview stage and discovered that Sheila consumes a very small amount of food and does not take any nutritional supplements. You have also identified that Sheila has poorly controlled diabetes which could be contributing to her reduced appetite. She is experiencing oral discomfort from oral candidiasis, which you suspect is caused by her poorly controlled diabetes and dry mouth, a side effect of tiotropium.
- Recommended that Sheila applies an antifungal mouth gel four times a day for the next week to treat her oral candidiasis. You also refer her back to her GP for a diabetic review, and the establishment of a management plan to help her achieve adequate blood glucose control. In addition, she can treat any oral discomfort with oral lubricants.
- Recommended that Sheila applies an antifungal mouth gel four times a day for the next week to treat her oral candidiasis. You also refer her back to her GP for a diabetic review, and the establishment of a management plan to help her achieve adequate blood glucose control. In addition, she can treat any oral discomfort with oral lubricants.
- The next stage is to provide Sheila with education regarding her nutritional intake. Early nutritional intervention may help avoid future complications due to further weight loss and referral to a dietician may assist with this process. Sheila should try to consume small, frequent amounts of food that she likes, as large portions of food can be overwhelming and may discourage intake. The goal of nutrient intake in patients with a low body weight should be 30–35 kcal/kg per day with at least 20% protein content.

**Follow-up**

Sheila returns to your pharmacy a month later and tells you that she is feeling much better. Her GP has referred her to a diabetes educator, and her blood glucose control has improved immensely. Sheila is no longer experiencing oral candidiasis and her taste perception has improved slightly. She is also visiting a dietician who has provided her with flavour enhancers for her food which has helped to make eating more enjoyable. Her dietician also created an eating plan and Sheila has been trying to stick to this as closely as she can. She now has more energy and appears more vibrant and talkative than at her last visit.
Pharmacists can play an active role in identifying nutritional deficiencies in elderly patients. Pharmacists should be aware of the variety of issues that may contribute to weight loss in the elderly and appreciate the possible significance of excessive weight loss in this population. Simple questioning and practical advice, regarding diet and exercise, can provide early intervention and reduce the incidence of protein-energy malnutrition and mortality associated with extreme weight loss in elderly individuals.

Key learning points

1. Which one of the following statements is true?
   a) A decreased level of circulating cholecystokinin may contribute to a reduced appetite in elderly patients.
   b) Elderly patients are at an increased risk of developing protein-energy malnutrition.
   c) Decreased levels of the opioid feeding drive hormone, dynorphin, may play a role in increasing appetite.

2. Severe chronic obstructive pulmonary disease (COPD) can cause weight loss due to an increase in metabolic demand needed to use accessory muscles of respiration.

3. Which of the following pieces of advice may aid with increasing the appetite of an elderly patient?
   a) Try to eat small portions of food at frequent intervals.
   b) Attempt to increase physical activity.
   c) Experiment with adding flavour enhancers to meals to make eating more pleasurable.
   d) All of the above.

4. The recommended nutrient intake for a person with low body weight is:
   a) 5% protein content.
   b) 15% protein content.
   c) 25% protein content.
   d) 30–35 kcal/kg per day with at least 20% protein content.

A score of 4 out of 5 attracts 1 CPD credit.

References


Questions

A score of 4 out of 5 attracts 1 CPD credit.

1. Which one of the following statements is true?
   a) True.
   b) False.

3. Which of the following pieces of advice may aid with increasing the appetite of an elderly patient?
   a) True.
   b) False.

4. The recommended nutrient intake for a person with low body weight is:
   a) 20–25 kcal/kg per day with at least 5% protein content.
   b) 25–30 kcal/kg per day with at least 15% protein content.
   c) 30–35 kcal/kg per day with at least 20% protein content.

5. Which of the following is least likely to cause excessive weight loss in an elderly patient?
   a) Cancer.
   b) Parkinson’s disease.
   c) Anxiety.
   d) Hypoparathyroidism.
   e) Poorly controlled diabetes.

Note: The CPD questions are now at the end of each article.

PSA members can answer online at www.psa.org.au and receive automatic feedback.

• You will need to login to submit your answers online.
  If you do not have member access details, you can request them via a link from the login page.
• Select Pharmacist Members from the blue, left hand side menu.
• Select Submit Answers.
• Select Australian Pharmacist CPD.

Submit your answers before 1 March 2011
or fax/mail to:

PSA Fax: (03) 9389 4044
PSA CPD answers
PSA Victorian Branch
Level 1, 381 Royal Parade
PARKVILLE VIC 3052

NZCP Fax: (04) 381 4786
NZCP CPD answers
PO Box 11 640
Wellington

A score of 4 out of 5 attracts 1 CPD credit.

January 2011

Vol. 30 – January #01

71