The Nutritional and Pharmaceutical Management of Chemotherapy and Radiotherapy Side Effects

Presented by
Beth Hua (Pharmacist)
and
Belinda Hodgson (Dietitian)
Common Side Effects

- Mucositis
- Oesophagitis
- Anorexia
- Nausea
- Vomiting
- Diarrhoea
- Constipation
Case Study 1: Anne

- 55yo female with mid oesophageal squamous cell carcinoma with regional nodal disease, no metastatic disease

- Planned for radical chemo / radiotherapy (5½ weeks RT to 50.4Gy with Cisplatin and 5FU infusion at weeks 1, 5, 8 and 11)
Case Study 1: Anne

• Lives in the country with her supportive husband but staying with family in Melbourne during treatment

• 5kg loss of weight prior to diagnosis

• Oesophageal dilatation prior to treatment due to severe dysphagia
Case Study 1: Anne

• In her final week of treatment, after her second cycle of chemo, she complained of quite severe:
  – Nausea and vomiting
  – Sore mouth (no ulcers)
  – Oesophagitis

• She had lost a further 5kg of weight during her treatment (8% of total body weight)
Nutritional Management - Nausea

- Small frequent meals
- Room temperature or cold foods
- Dry, starchy and/or salty foods
- Sips of dry ginger ale/ginger beer, pieces of glazed ginger, ginger biscuits etc
- Light exercise and fresh air
- Avoidance of sweet, rich, greasy and/or spicy foods
- Avoidance of strong odours/cooking smells
- Avoidance of liquids on an empty stomach
- Avoidance of favourite foods to prevent potential aversions
Pharmaceutical Management - Nausea

- Anti-nauseants should be given regularly and at the maximum doses allowable
  - Examples: metoclopramide, prochlorperazine or a 5HT₃ receptor antagonist (ondansetron)
- For those who are unable to swallow we would use wafers or sublingual tablets
  - Examples: ondansetron wafers, lorazepam tablets
- If one anti-nauseant is not sufficient then additional ones can be added for a synergistic effect or when required
  - Examples: haloperidol, clonazepam, cyclizine (SAS), methotrimeprazine (SAS)
Nutritional Management - Vomiting

• First try to prevent with nausea tips and medications!
• Start with small sips of dry ginger ale, cold flat lemonade, diluted fruit juice or lucozade/sports drinks, or icy poles, ice cubes or flavoured ice cubes, or boiled lollies, mints and citrus flavoured lollies
• As the vomiting settles, more nourishing fluids such as ice cream, jelly, fruit juice, clear soups, tea with honey or lemon and sugar should be tried every 15 minutes
• Then progress to solid foods such as dry biscuits, toast, plain rice, noodles, porridge or stewed fruit.
• Avoid heavy, rich foods
Pharmaceutical Management - Vomiting

- Pharmaceutically we try to prevent this occurring by giving anti-nauseants half an hour before chemotherapy
- Adding additional anti-emetics prior to the next cycle of chemotherapy
- Patients receive two days of anti-nauseants after most cycles of chemotherapy
- Patients are advised to take anti-nauseants between each cycle of chemotherapy if needed
Nutritional Management – Sore Mouth

• Soft moist foods with extra gravies, dressings and sauces
• Use of a straw to direct fluid away from the painful parts of the mouth
• Foods at room temperature or chilled
• Sucking icy poles or ice chips to numb the mouth before eating meals/snacks
• Avoidance of dry, coarse or rough foods
• Avoidance of alcohol (including alcohol based mouth washes)
Pharmaceutical Management – Sore Mouth

• Using regular mouthwashes (no ulcers)
  – Examples: Difflam mouthwash
    Peter MacCallum Mouthwash
    Cocaine mouthwash
    Biotene® mouthwash
    Chlorhexidine mouthwash
    Lignocaine 2%/Mylanta mixture

• Medications may need to be given in the liquid or soluble form

• Using prophylactic nystatin to help against oral candidiasis
Nutritional Management – Oesophagitis

- Soft moist or puree foods
- Small more frequent meals and snacks
- Nourishing fluids often
- Avoidance of dry, coarse or rough foods such as dry biscuits, crisp toast, crusty bread or potato crisps
  - These can be soaked in milk, juice, gravy or sauce or ‘dunked’ in a drink before eating to soften
- Avoidance of very hot or very cold food or drinks
Pharmaceutical Management – Oesophagitis

- As it involves a sore mouth and inflamed oesophagus we recommend mouthwashes can also be swallowed
  - Examples: Lignocaine 2%/Mylanta mixture
- To help with pain we need to give soluble forms of medications which may also be gargled
  - Examples: Paracetamol soluble
- To help with pain we can give patients liquid painkillers
  - Examples: Morphine mixture
Case Study 2: George

- 40 year old male admitted for DT-PACE salvage chemo (Cisplatin, Etoposide, Doxorubicin, Cyclophosphamide and Dexamethasone for 4 days) for progressive Multiple Myeloma

- Unintentional 30kg loss of weight in 6 months prior to admission but has maintained BMI within range

- Lives at home with his supportive partner
Case Study 2: George

• Maintained a good appetite and good oral intake during his admission

• On discharge he experienced severe:
  – Mucositis
  – Nausea
  – Diarrhoea
which required re-admission to hospital for management
Nutritional Management - Diarrhoea

• Add soluble fibre to diet at regular intervals throughout the day
• Limit/avoid insoluble fibre
• Eat small, frequent meals and snacks over the day
• Avoid greasy, fried, spicy or very rich foods
• Avoid caffeine and alcohol
• Avoid dairy products or use lactase enzyme if lactose intolerant
• Avoid excessive amounts of sweetened drinks and juices that might contribute to osmotic diarrhoea
• Avoid sugar free gum and lollies made with sorbitol
• Increase fluid intake
• If diarrhoea is severe, increase consumption of high potassium foods and high sodium foods
Pharmaceutical Management - Diarrhoea

• Clear any possibility of an infection or other cause for the diarrhoea
• Can give anti-diarrhoeals to help relieve symptoms
  – Examples: loperamide, diphenoxylate/atropine, codeine phosphate
Nutritional Management - Mucositis

• Try soft moist foods with extra gravies, dressings and sauces (watch for acidic ingredients like tomatoes, citrus and vinegar)
• Use a straw to direct fluid away from the painful parts of the mouth
• Avoid alcohol, citrus, caffeine, tomatoes, vinegar and hot peppers
• Avoid dry, coarse, rough or spicy foods
• Try foods at room temperature or chilled
• Try sucking icy poles or ice chips to numb the mouth
• Rinse mouth out frequently
Pharmaceutical Management - Mucositis

- Patients will generally be switched from their oral medications to the intravenous form wherever possible.
- Using a soluble form may also be an option.
- Standard mouthcare is prescribed.
  - Examples: Difflam mouthwash, Peter MacCallum mouthwash, Cocaine mouthwash, Lignocaine 2%/Mylanta mixture, Nystatin suspension.
Case Study 3: Jennifer

- 63yo female with T2 adenocarcinoma right lung admitted for a right lower lobectomy
- Past history of a bowel resection for a Duke’s C colon cancer 10 years ago
- Retired teacher who lives with her supportive husband and maintains an active life hiking and trekking twice a year
- 17kg LOW over 7-8 months (25% of total body weight)
Case Study 3: Jennifer

- Recovery complicated by severe pain that required strong analgesia to control
- Resulted in constipation
- Pain also affected appetite reducing her desire to eat and drink
- Combination of the two resulted in a further 5kg loss of weight
Nutritional Management - Constipation

- Eat at regular intervals throughout the day
- Increase fluid intake to 8-10 cups per day
- Avoid caffeine
- Increase dietary fibre if able to take adequate fluids
- Try hot drinks as a bowel stimulant
- Try prune juice, preferably hot, as a bowel stimulant
- Try to increase physical activity if able
- Try to establish a schedule for having bowel movements
Pharmaceutical Management - Constipation

- Provided medically any obstruction or other cause has been investigated we can treat patients with either aperients or enemas

- **Use of aperients:**
  - Example: Movicol®, Lactulose, Coloxyl and Senna

- **Use of enemas:**
  - Example: Microlax®, Glycerol, Fleet®
Nutritional Management - Anorexia

- Eat nutrient dense meals and snacks frequently
- Add protein and calories to favourite foods
- Eat in a pleasant and social setting
- Drink nutrient dense fluids between meals to avoid feeling too full with meals
- Try a small amount of beer, wine or aperitif to stimulate the appetite if approved by the medical team
- Try light exercise to stimulate appetite
- Make the most of times when feeling well (note breakfast is often the best meal of the day)
Pharmacuetical Management - Anorexia

- Dexamethasone may be used to stimulate a patient’s appetite.
- As a corticosteroid it predominantly exhibits glucocorticoid effects (eg: gluconeogenesis)
- It is a common side effect for patients to have an increase in appetite at the doses we use to treat chemotherapy-induced nausea (4-8mg daily)
- Patients receiving dexamethasone for their radiotherapy or chemotherapy may not be advised to have additional dexamethasone written up for treating anorexia
In Closing, Remember:

• Management of side effects requires a team approach to ensure the best possible outcomes for the patient,

• Every patient is different therefore not every strategy or medication will work for every patient, and

• The bigger your handbag of strategies, the more likely you are to help the patient!