Emergencies in Palliative Medicine
Objectives

- Recognise palliative care emergencies
  - Be aware of their existence
  - Recognise signs and symptoms of common emergencies
- Anticipate occurrence of emergencies
- Manage palliative care emergencies
- Plan Ahead / Be prepared
Palliative Care Emergencies

- Emergencies - situations, which, if left untreated, will immediately threaten life.
- In Palliative Care emergencies are those conditions which if left untreated will seriously threaten the quality of life remaining (death is an expected outcome, and prolongation of life is not usually a realistic aim).
Palliative Care Emergencies

- Can be caused by:
  - Cancer
  - Treatment
  - Coexisting diseases
General Principles

- Anticipate
  - Who is at risk?
- Avoid
  - Correct the correctable
  - Prophylaxis
- Plan
  - Communication
  - Preparation
Factors to consider

- What is the emergency?
- Can it be reversed?
- Should it always be reversed?
- What is the general condition of the patient?
- Prognosis and the stage of disease
- Burdens of treatment-effectiveness and toxicity of treatment
- Comorbidity
- Patients and carers wishes
Palliative Care Emergencies

- what is the best technical solution to the problem?
- is it appropriate for this patient at this time, and does the patient or person responsible agree?
Palliative Care Emergencies

- Hypercalcaemia
- Superior Vena Cava Obstruction (SVCO)
- Spinal Cord Compression
- Haemorrhage / Bleeding
- Seizures / Fitting
Hypercalcemia

is the presence of abnormally high levels of calcium in the blood
Hypercalcemia

- Commonest life threatening metabolic disorder encountered in patients with cancer
- Decreases quality of life
- Consider non-malignant causes such as hyperparathyroidism
Hypercaldemaia

- It is the most common life threatening metabolic disorder in patients with malignancy.
- 10-30% of all patients with malignant disease
- Responsible for a significant number of hospitalisations
- High risk in patients with myeloma (30-100%), prostate, breast (18-42%) and non small cell lung cancer patients (25%), but also others
Hypercalcemia - symptoms

- Symptoms are non-specific
- Symptoms may be thought to be the symptoms of advanced illness
- High index of suspicion for hypercalcemia is necessary
Hypercalcemia - symptoms

- Anorexia
- Nausea and vomiting
- Polyuria and polydipsia
- Dehydratation
- Abdominal pain
- Weight loss
- Constipation
- Muscle weakness
- Fatigue
- Confusion
- Drowsiness
- Nephrolithiasis
Hypercalcemia

- What causes high calcium in malignancy?
  - Skeletal metastases
  - Production of osteoclastic factors
  - PTH related protein secretion
  - Ectopic PTH secretion (rare)
Hypercalcemia-diagnosis

- Check renal function and corrected calcium
  (need to know albumin concentration)

- Corrected calcium formula (mg/dl) = 
  \([\frac{4.0 - \text{albumin (g/dl)}}{0.8}] + \text{serum total calcium}) \text{ mg/dl}\)
Hypercaldemia - severity

- Mild: 10.5-11.9mg/dl (2.6-2.9mmol/l)
- Moderate: 12-13.9mg/dl (3.0-3.4mmol/l)
- Severe >14.0mg/dl (>3.5mmol/l)
Hypercalcemia - management

- Hydratation with intravenous saline is essential to reverse decreased GFR and impaired renal calcium excretion.
- Amount of fluid and rate given depends on the clinical and cardiovascular status of the patient and the concentrations of urea and electrolytes.
- Up to 1000ml of 0.9% NaCl every 6-8 hours for first 3 days.
- After rehydrating, furosemide to promote calcium excretion.
Hypercalcemia - management

- Bisphosphonates - first line medical therapy
- Blocking osteoclast bone resorption
- Given intravenously:
  - Disodium Pamidronate: 60 to 90mg over 2 hours
  - Zoledronic acid 4 to 8mg over 15 minutes
- Adverse effects: fever, nausea, vomiting, renal toxicity, osteonecrosis of the jaw
Hypercalcemia management

- second line medication:
  - Glucocorticoids- hydrocortisonum to block the calcium from GI tract
  - Calcitonin 100-200 IU s.c./i.m. every 6-12 hours (decreasing calcium level by blocking resorption from bones and increasing renal excretion)

- Also- removal of calcium from vitamin suplementation, discontinuation of drugs that may lead to hypercalcemia
Hypercalcemia-management

- Raised serum calcium is of itself not an indication to treat in the terminal phase where treatment can impose unnecessary burden instead of benefit.
- If the decision is made by the patient not to have treatment or it is deemed inappropriate to treat, the symptoms should be managed appropriately through the terminal phase of illness.
Prevention of Recurrence

- Consider disease modifying treatments
- Consider maintenance treatment
- Monitor at 3 weekly intervals or when symptomatic
Hypercalcaemia

- **Prognosis**
  - Hypercalcaemia is a sign of tumour progression
  - Survival is less than 3 months with treatment
  - Calcium level >4 leads to renal failure, cardiac arrhythmias and fits
Superior Vena Cava Obstruction (SVCO)

- Superior Vena Cava Obstruction (SVCO) is a condition where the return of blood from the upper body to the heart is impeded, resulting in severe upper body congestion.

- Usually caused by malignancies (mostly non-small-cell lung cancer)
Superior Vena Cava Obstruction (SVCO)

- External compression
- Intraluminal thrombosis
- Direct invasion of the vessel wall
Who is at risk

- Mostly malignant tumors/nodes within the mediastinum
- Mostly tumours - primary bronchial carcinomas 75%
- Lymphoma
- Breast cancer patients
- Seminoma
- Also goitre and other non-malignant tumors
SVCO: clinical presentation

- Breathlessness
- Cough
- Stridor
- Headache
- Edema of the head, neck, trunk and arms
  - Venous distension
  - Plethora
  - Stridor
  - Dysphagia
  - Head discomfort
  - Coma / Death
SVCO: Diagnosis

- Most useful: CT scan with contrast or MRI
- It is important to obtain a tissue diagnosis in patients with suspected malignancies for guiding future treatment
- In patients with pleural effusion: thoracentesis with cytological analysis
- Bronchoscopy, transthoracic needle aspiration biopsy, mediastinoscopy
Management

- Depends on:
  - Etiology
  - Severity of symptoms
  - Patient’s goals of therapy
Immediate relief of symptoms such as dyspnoea and anxiety (pharmacological, practical and psychological methods)

Opioids and possibly benzodiazepines indicated.

Initiation of high dose steroids – 16mg per day of dexamethasone initially for 5 days and then stopping if not effective or gradually tailing off if effective or as other treatments take effect.
☐ Referral to an oncology centre for assessment of appropriate treatment, radiotherapy or chemotherapy (as appropriate to the tumour).

☐ Percutaneous stenting of the Superior Vena Cava with or without thrombolysis should be considered.
The outcome of SVCO needs to be considered along with the history of the underlying cancer; however, as a prognostic indicator up to 17% of patients will survive for a year. Treatment will provide effective palliation of symptoms in more than 60% of patients with a median duration of three months.
SVCO: Management in advanced disease

- High dose corticosteroids
- Radiotherapy to the mediastinum
- Stenting of the SVCO
- In Non small cell lung cancer, palliative radiotherapy gives relief in 70%
- Important to give symptomatic treatment
Spinal Cord Compression (SCC)

- Occurs in advanced malignancy
- Main problem is lack of recognition
- Up to 5% of patients with cancer develop SCC
- There is a 30% 1 year survival
- Malignancies which commonly cause SCC include: prostate, breast, lung, myeloma, lymphoma and renal
Spinal Cord Compression (SCC)

- Usually caused by metastases
- Most commonly affects thoracic level (70%)
- Signs and symptoms depend on the area of the cord affected
- Signs can be subtle to gross
- More than one level can be affected
- Compression below L2 affects the cauda equina
Spinal Cord Compression

- Causes
  - Vertebral metastases and collapse 85%
  - Extravertebral tumour (extension into epidural space)
  - Intramedullary tumour (from spinal cord)
  - Intradural tumour (from meninges)
  - Epidural metastases
Spinal Cord Compression

- **Features**
  - Pain (earliest symptom)
  - Weakness
  - Sensory changes and a sensory level tingling and numbness
  - Sphincter dysfunction / perianal numbness
  - Altered reflexes

- **Examination**
  - Demarcated sensory loss
  - Brisk or absent reflexes
Spinal Cord Compression

- Pain is the earliest symptom - it can be localized, referred and/or radicular in nature - 80-85% of patients
- Weakness
- Decreased sensation over the buttocks, thighs, perineal region
- Sphincter dysfunction - decreased sphincter tone, resulting in stool incontinence
- Urinary retention, overflow incontinence
- Altered reflexes
Spinal Cord Compression

- Diagnosis
  - Urgent MRI - gold standard
  - Early diagnosis!
  - Delay in diagnosis can lead to increased morbidity and mortality
  - 70% have substantial weakness by the time of scanning
  - 70% who can walk before treatment maintain mobility
  - 35% of those with weakness regain function
Spinal Cord Compression

- Poor prognostic indicators
  - Paraplegia
  - Loss of sphincter function
  - Rapid onset (infarction)
Management of SCC

- Multidisciplinary team approach is critical to formulate the treatment
- Surgical team, radiation oncologist, rehabilitation practitioner, palliative medicine consultant may be involved
- Treatment customized according to patient’s disease status, prognosis, performance status, comorbidities, severity of symptoms
Management of SCC – glucocorticoid therapy

- General consensus - it is beneficial
- Optimal dose of steroids - unknown - initial bolus of dexamethasone 10mg i.v. followed by a scheduled dose between 6-10mg every 6 hours is commonly initiated
- The dose is recommended to be tapered to the smallest amount after completion of radiation therapy (to maintain neurological benefits, but to avoid side effects)
Management of SCC – radiation therapy

- Radiotherapy has been shown to relieve pain and preserve the ability to ambulate and maintain sphincter function.
- Depending on the prognosis, the radiation oncologist can formulate a treatment regimen that is consistent with the patient’s goals of care.
- High-precision radiotherapy techniques are used for primary treatment and for recurrence of disease while minimizing radiation exposure to surrounding tissue.
Management of SCC – surgery

- Surgical decompression with reconstruction
- Pain control and preserving neurological functions
- Which is better - surgical decompression with reconstruction followed by radiation or radiotherapy alone? - unclear
- Patients with progressive neurological deficits, vertebral column instability, radioresistant tumors, persistent pain - surgery recommended
Management of SCC- rehabilitation

- Improves quality of life
- Improves mood
- Provides better pain control
- Paraplegic patients- taught how to manage bowel/bladder incontinence, transfer safely
Management of SCC

- Medical treatment and psychological support to assist with coping with the loss of independence
- Symptom control
- Improving quality of life
Summary

- General Principles
  - Anticipate
  - Discuss and highlight potential problems
  - Weigh up the benefits and burdens of treatment
  - Advance Care Planning