

# Emergencies in Palliative Medicine

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# Objectives

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- 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
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# Palliative Care Emergencies

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- ❑ 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).
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# Palliative Care Emergencies

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

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## Anticipate

- Who is at risk?

## Plan

- Communication
- Preparation

## Avoid

- Correct the correctable
  - Prophylaxis
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# Factors to consider

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- 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
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# Palliative Care Emergencies

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- 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?
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# Palliative Care Emergencies

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

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

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# Hypercalcemia

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

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- 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
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# Hypercalcemia- symptoms

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- ❑ Symptomms are non-specific
  - ❑ Symptoms may be thought to be the symptoms of advanced illness
  - ❑ High index of suspition for hypercalemia is necessary
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# Hypercalcemia- symptoms

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

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

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- ❑ Check renal function and corrected calcium  
( need to know albumin concentration)
  - ❑ Corrected calcium formula (mg/dl) =  
 $([4.0 - \text{albumin (g/dl)}] \times 0.8) + \text{serum total calcium (mg/dl)}$
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# Hypercalcemia- severity

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- 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)
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# Hypercalcemia- management

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- ❑ Hydration 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
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# Hypercalcemia- management

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- ❑ Bisphosphonates- first line medical therapy
  - ❑ Blocking osteoclastic 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
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# Hypercalcemia- management

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- 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 supplementation, discontinuation of drugs that may lead to hypercalcemia

# Hypercalcemia- management

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- ❑ 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.
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# Prevention of Recurrence

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

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## □ 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
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# Superior Vena Cava Obstruction (SVC O)

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- Superior Vena Cava Obstruction (SVC O) 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)
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# Superior Vena Cava Obstruction (SVC O)

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

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- ❑ 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
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# SVCO: clinical presentation

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

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- ❑ 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 patient with pleural effusion - thoracentesis with cytological analysis
  - ❑ Bronchoscopy, transthoracic needle aspiration biopsy, mediastinoscopy
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# Management

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- Depends on:
    - Etiology
    - Severity of symptoms
    - Patient's goals of therapy
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- ❑ 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.
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- ❑ 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.
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- 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.
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# SVCO: Management in advanced disease

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- ❑ 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
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# Spinal Cord Compression (SCC)

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- ❑ 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
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# Spinal Cord Compression (SCC)

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- ❑ 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
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# Spinal Cord Compression

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## □ Causes

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

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## 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
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# Spinal Cord Compression

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- 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
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# Spinal Cord Compression

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## □ 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

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

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- ❑ 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
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# Management of SCC – glucocorticoid therapy

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- ❑ 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)
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# Management of SCC – radiation therapy

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- ❑ 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 to the patient's goals of care
  - ❑ High-precision radiotherapy techniques used for primary treatment and for recurrence of disease while minimizing radiation exposure to surrounding tissue
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# Management of SCC –surgery

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- ❑ 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
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# Management of SCC- rehabilitation

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

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

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## □ General Principles

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