

**ESSEX PALLIATIVE AND SUPPORTIVE CARE NETWORK**

**FORMULARY AND GUIDELINES FOR MANAGEMENT**

**ADAPTED FOR USE IN NORTH EAST ESSEX CCG**

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## INTRODUCTION

“Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual” WHO (2002)

Generic palliative care (the palliative care approach) is provided by all health care professionals and is an integral part of clinical practice.

The specialist palliative care team becomes involved with patients with an extraordinary level of need. This often reflects an intensity or complexity of problems across the physical, psychological or spiritual domains.

Fast and effective palliation of symptoms is of utmost importance in ensuring best possible quality of life in individuals for whom cure is not possible. The following formulary has not been written as a comprehensive text but as a guide to help GPs, community nurses and hospital staff as well as specialist palliative care teams on first line management of common symptoms encountered in palliative care for adults. Advice is based on clinical evidence (where possible) and nationally and internationally accepted guidelines for best practice. The authors acknowledge that symptom control and other issues should be approached in a holistic way, taking into account not only physical signs but also social, spiritual and emotional dimensions.

Users who wish to gain greater depth and breadth of reading are advised to refer to specialist palliative care texts (see further reading).

This formulary was devised on behalf of the Essex Palliative and Supportive Care Network by a small working party with representation from the Acute Trusts, Community Trusts and Voluntary Sector health care providers across the Network. This version has been adapted specifically for use within Colchester Hospital University NHS Foundation Trust and the North East Essex locality as approved by the North East Essex Medicines Management Committee.

Please note that many of the medications used within palliative care are used outside of their usual dose licencing or indications. For further information please contact specialist palliative care.

For further specialist advice please contact:

### **Hospital Specialist Palliative Care Teams**

Monday – Friday 9am –5pm

Basildon Hospital: extension 4740 (hospital switchboard 01268 524900)

Broomfield Hospital: extension 4503 (hospital switchboard 01245 362000)

Colchester General Hospital – 7 day a week service 9am – 5pm: direct line 01206 746272

Southend Hospital: 01702 01702 385190

### **Community Specialist Palliative Care Teams**

Mid Essex:	01245 455478:	Monday – Friday	9am-5pm
North East Essex:	01206 890360 (SinglePoint)	Monday-Sunday	24 hours a day
South West Essex:	01375 364435:	Monday – Friday	9am – 5pm
South East Essex:	01702 608250:	Monday – Friday	8.30am – 5pm
St Francis Hospice (for Brentwood):	01708 758610:	Monday – Friday	9am – 5pm

## **Out of Hours Specialist Palliative Care Telephone Advice Service**

Mid Essex

Farleigh Hospice: 01245 455478

Broomfield Hospital 01245 362000 and ask for consultant on call for palliative medicines

North East Essex

SinglePoint: 01206 890360

South East and South West Essex

Southend Hospital: 01702 435555 and ask for consultant on call for palliative medicine

Brentwood

St Francis Hospice: 01708 753319

### **Hospice contacts**

Fair Havens Hospice, Southend 01702 220350

Fair Havens Hospice-at Home 07850 613445

Farleigh Hospice, Chelmsford 01245 457300

St Francis Hospice, Romford 01708 753319

St Helena's Hospice, Colchester 01206 845566

St Luke's Hospice, Basildon 01268 524973

St Luke's Hospice-at Home 07739 890140

## **GENERAL PRINCIPLES**

### **Principles of prescribing in palliative care:**

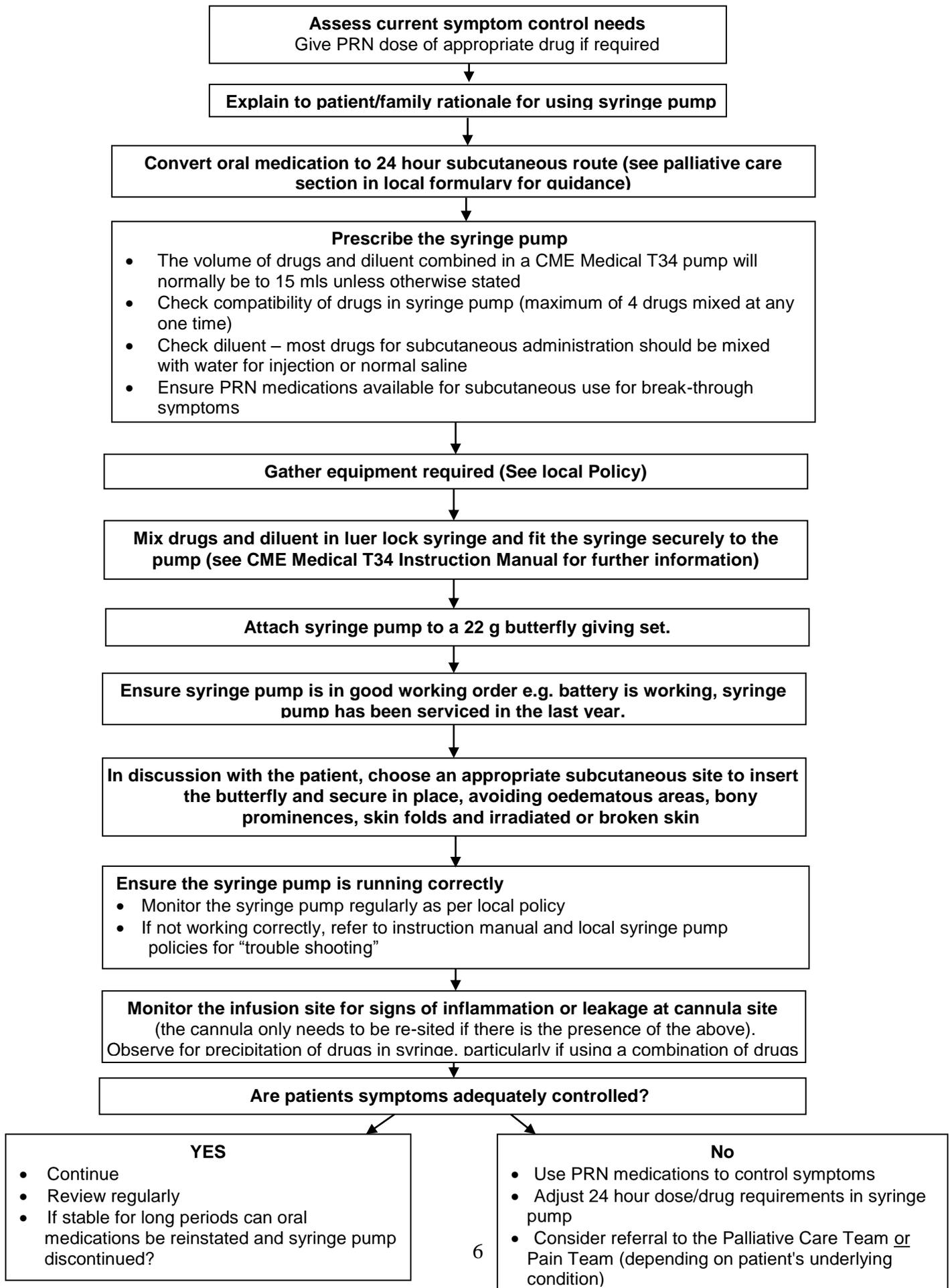
1. Assess the symptom(s) adequately through a holistic assessment
2. Establish a realistic management plan with the patient and family
3. Choose drugs based on underlying pathology and physiology
4. Choose an appropriate route of drug administration
5. Avoid polypharmacy where possible
6. Review medication regularly
7. Ensure appropriate quantities of medication are available

### **Syringe Pump:**

Syringe pumps are small battery operated pumps that allow continuous, subcutaneous drug infusions. This permits parenteral drug administration with minimal patient burden and has the advantage of steady plasma levels for a wide range of drugs available for symptom control. They are not just for use in the terminal phase but in any situation where the oral route is inappropriate or unreliable. The syringe pump currently in use across the network is the CME Medical T34. For guidance regarding setting up a syringe pump use the syringe pump care pathway and refer to local policies.

## THE USE OF SYRINGE PUMPS IN PALLIATIVE CARE

Entry criteria: Patient has symptom control needs and is not tolerating / absorbing medication or the drug required is unavailable as an oral medication



## **EMERGENCIES IN PALLIATIVE CARE**

Where possible it is always desirable to pre-empt problems that could arise. However, sometimes unpredictable or unavoidable emergencies happen. When managing palliative care emergencies, always consider the following when determining what level of intervention is appropriate:

- The nature of the emergency
- Performance status of patient
- Disease status and prognosis
- Effectiveness and potential toxicity of treatment
- Wishes of patient and carers and the capacity of the patient to consent to treatment

Emergencies in palliative care include:

- Hypercalcaemia
- Spinal Cord compression
- Superior Vena Cava Obstruction
- Severe Haemorrhage

Further information regarding the management of these emergencies can be found overleaf.

### **Subject Specific References**

- Kovacs C S. Hypercalcaemia of malignancy in palliative care patients: A treatment strategy. *Journal of Pain and Symptom Management* 1995; **10**(3): 224-232
- Ralston S. Management of cancer associated hypercalcaemia. *European Journal of Palliative Care* 1(4): 170-174
- Feber, T. *Head of Neck Oncology Nursing*. London: Whurr Publishers Ltd, 2000
- Smith A M. *Emergencies in Palliative Care*. *Annals Academy of Medicine*, 1994; **23** (2): 186-190.

## HYPERCALCAEMIA

Hypercalcaemia is the commonest life threatening metabolic disorder occurring in patients with advanced cancer. Incidence is 10% overall, but varies depending on the primary malignancy

### Causes:

- Local osteolytic effect (see in 20% of patients) metastatic tumour grows in the bone and activates osteoclasts.
- Humeral mechanisms (Seen in 80% of patients) promote osteoclast activity and bone resorption.
- It is a poor prognostic factor, with 80% patients surviving less than 1 year from onset.

### Diagnosis:

- Corrected calcium > 2.6mmol/l.
- Often only symptomatic > 3.0mmol/l.
- Levels of > 4.0mmol/l will cause death in a few days if untreated.
- Symptoms are often mistaken for opioid effects or attributed to the underlying malignancy, so a high index of suspicion is needed
- Check U&Es and corrected calcium
- The table below shows the usual symptoms occurring at different severities of Hypercalcaemia. There may be some overlap of symptoms as presentation varies between individuals

<b>Mild (corrected calcium &lt; 3.0mmol/l)</b>	<b>Moderate (corrected calcium 3.0-4.0mmol/l)</b>	<b>Severe (corrected calcium &gt; 4.0mmol/l)</b>
Lethargy	Fatigue	Dehydration
Weakness	Nausea and vomiting	Confusion
	Lethargy	Ileus
	Polyuria and polydipsia	Drowsiness
	Anorexia	Coma
	Weakness	Neurological deficits
	Constipation	Cardiac arrhythmias

### Management:

Treatment is for symptomatic purposes – it will not affect the course of the underlying disease but if left untreated impairs quality of life and may hasten death. There is a need to consider the overall clinical condition and prognosis of patient before instigating treatment: it may not be appropriate to treat a moribund patient.

Treatment should be considered if:

- Plasma calcium is > 2.8mmol/l
- Patient is symptomatic
- This is the first episode of hypercalcaemia or significant interval since previous episode

### Acute Treatment:

- Mild hypercalcaemia (corrected calcium < 3.0mmol/l)
  - Rehydration
  - Encourage oral intake.
  - If patient remains symptomatic give IV bisphosphonates:
    - Disodium Pamidronate 90mg IV in 250-500ml NaCl 0.9% over 90 minutes (adjust dose and rate for renal dysfunction)
    - Takes 36-48 hours for serum calcium to start to respond.
    - Maximum effect after 5-7 days. Duration of action approx. 3 weeks

- Moderate or severe hypercalcaemia (corrected calcium > 3.0mmol/l)
  - Stop drugs that can cause Hypercalcaemia. e.g. Vitamin D compounds, thiazide diuretics
  - Rehydration
    - Give IV fluids 3-4litres/24h if oral intake inadequate.
    - Can lower calcium by 0.3mmol/l.
    - Adjust rate if renal or cardiac failure present.
    - Replace potassium as necessary.
    - Repeat U&E daily and adjust fluids as necessary.
  - Give IV bisphosphonates:
    - Disodium Pamidronate 90mg IV in 250-500ml NaCl 0.9% over 90 minutes (adjust dose and rate for renal dysfunction)
    - Takes 36-48 hours for serum calcium to start to respond.
    - Maximum effect after 5-7 days. Duration of action approx. 3 weeks

**Notes:**

- If patients is being treated as an outpatient use:
  - Zoledronic acid 4mg IV in 100ml NaCl 0.9% over 15 minutes (adjust dose for renal dysfunction)
    - Takes 24-36 h for serum calcium to respond.
    - Maximum effect after 5-10 days. Duration of action 3-4 weeks
- For resistant hypercalcaemia calcitonin and steroids can be used under specialist advice.
  - Calcitonin 200-400 units SC QDS for 24-48 hours or 800units via CSCI over 24 hours
    - Acts within 12 hours. Duration of action 2-3 days
  - Corticosteroids: Dexamethasone 8-16mg daily.
    - Take 3-4 days to work

Symptomatic management:

- Antiemetics (see section on nausea and vomiting)
- Laxatives or rectal intervention (see section on constipation)
- Mouthcare
- Consider maintenance therapy e.g. IV bisphosphonates every 3-4 weeks
- Refer to oncologist for consideration of disease modifying treatment/anti tumour therapy
  - Hormonal therapy.
  - Chemotherapy
  - Radiotherapy
- There is no need to limit dietary calcium intake, as intestinal calcium absorption is suppressed

## **SPINAL CORD COMPRESSION**

- Compression of the spinal cord or cauda equina (nerve roots below L1) can lead to permanent paraplegia or quadriplegia
- Incidence – 3-5% overall, more common in myeloma, prostate, breast and lung cancer
- It is a poor prognostic factor with 70% of patients dying within 1 year.

### **Causes:**

- 80% due to extradural compression e.g. collapse of vertebral body caused by destructive lesion.
- 20% due to intradural compression e.g. primary spinal cord tumour.
- Site: 70% thoracic, 20% lumbar, 10% cervical

### **Diagnosis:**

Have a high index of suspicion for early symptoms which can be subtle e.g. worsening back pain, heaviness of the legs. Do not wait for neurological signs, early diagnosis and urgent treatment within hours are vital to improved outcome, mobility and continence. Once paralysed only 5% walk again, but some survive more than one year.

- Usually in a patient with known metastatic disease
- Clinical features:
  - Above L1 – upper motor neurone signs
  - Below L1 – lower motor neurone signs.

Signs and symptom include:

	<b>Signs</b>	<b>Symptoms</b>
<b>Spinal Cord Compression</b>	Bony Tenderness	Back pain (early), > 80% cases Local bone pain Root compression pain Radicular pain, worse on coughing
	Brisk reflexes	Altered sensation, > 50% cases Numbness Pins and needles
	Upgoing plantars	Weakness, 75% cases
	Urinary retention	Sphincter disturbance (late) 40% Urinary retention Constipation
	Loss of saddle sensation (late)	
<b>Cauda equina</b>	Flaccidity	Sciatic pain (often bilateral)
	Absent reflexes	Weakness
	Loss of Saddle sensation (late)	Peri-anal numbness

### **Management**

- Start Dexamethasone 16mg IV/SC/PO stat. Start treatment as soon as the diagnosis is suspected, do not delay until there is radiological confirmation
  - **Urgent referral to oncologist**
  - **Urgent MRI of the whole spine within 24 hours of suspicion**
  - Continue dexamethasone 16mg PO/IV daily (in one or two divided doses)
  - Options for treatment included:
    - radiotherapy
    - surgical decompression
      - Severity of symptoms & time to commencement of treatment determines outcome. If ambulatory 70% remain so. If paraplegic, 5% become ambulatory

<b>Radiotherapy</b>	<b>Surgery</b>
Poor performance status	Good performance status
Likely prognosis <3 months	Likely prognosis >3 months
Multiple sites of compression	Well localised site of compression
Radiosensitive tumours	Radio-resistant tumours
Helps pain control	Unstable spine
	Need for tissue for diagnosis

## SUPERIOR VENA CAVA OBSTRUCTION (SVCO)

- Venous obstruction usually due to tumour within the mediastinum
- Incidence – 3-5% in lung cancer and lymphoma
- It is a poor prognostic factor with >80% of patients dying within 1 year.

### Causes:

- Extrinsic pressure
- Direct invasion of vessel wall
- Intraluminal clot

### Diagnosis:

Clinical features include:

Symptoms	Signs
Dyspnoea	Tachypnoea
Headache	Suffused injected conjunctivae
Dizziness	Cyanosis
Syncope	Distended non pulsatile neck veins
Visual changes	Dilated collateral superficial veins of upper chest
Swelling: Facial (esp.peri-orbital), Neck, Arms and hands	Oedema: Facial (esp.peri-orbital), Neck, Arms and hand

### Management

- Start Dexamethasone 16mg IV/SC/PO stat. Start treatment as soon as the diagnosis is suspected, do not delay until there is radiological confirmation
  - **Urgent referral to oncologist**
  - **Urgent chest x-ray / CT scan**
  - Continue dexamethasone 16mg PO/IV daily (in one or two divided doses)
  - Options for treatment included:
    - SVC stent insertion
    - radiotherapy
    - chemotherapy in chemotherapy sensitive tumours e.g. small cell lung cancer
    - symptomatic management:
      - Oxygen
      - Opioids +/- benzodiazepines for dyspnoea (see section on respiratory symptoms).
      - Consider anticoagulation

## **SEVERE HAEMORRHAGE**

In a patient already close to death, occurrence of a severe haemorrhage is often a terminal event and resuscitation measures are not appropriate. Such a haemorrhage is perhaps one of the most dreaded of all terminal events and, if witnessed, can be extremely distressing to all involved. The goal of management of the event must be to minimise anxiety and ensure death with dignity, providing a calm reassuring atmosphere

There are various types of haemorrhage including:

- Haematemesis/melaena
- Haemoptysis
- Rectal bleeding
- Vaginal bleeding
- Erosion of major blood vessels by malignant ulcer

### **Management of an event in hospital:**

It is important that the following equipment is available:

- Suction as appropriate
- Call bell – for support for staff to aid with administration of medication
- Gloves and apron
- Green/blue or other dark towels
- Reassurance for carers/family
- Professional presence
- Patients should be nursed in a side ward to avoid shock and distress to other patients and relatives where possible.

### **Management of an event at home:**

It is important that the following equipment is available. They should be stored discretely but be readily available and accessible:

- Gloves and apron
- Green/blue or other dark towels
- Suction as appropriate
- Yellow waste bags

### **Care during an event:**

1. Above all, do not panic. Try to keep the patient calm, stay with them, talk gently to them and hold their hand. If possible try to keep them in one place i.e. laid on the bed or sat in the chair.
2. Call for assistance
3. Apply green/blue dark towels to bleeding site to absorb the bleeding if possible.
4. Administer medication:
  - Anxiolytics (e.g. midazolam 5-10mg IV/IM/SC)
  - Analgesics if there is an element of pain (e.g. morphine 5-10mg IV/SC/IM or patients usual breakthrough dose of their breakthrough medication)
5. Reassure patient family/carers
6. After the event stay with relatives for a chance to de-brief and support as appropriate. Staff will also need support after the event and may need to talk through the incident fully with a healthcare professional of their choice

## STEROIDS IN PALLIATIVE CARE

Steroids are used for a variety of specific and non-specific reasons in patients with progressive malignancies. Up to 40% of patients may require them at some stage of their illness.

Indications for the use of steroids in patients with malignancy include:

<b>Specific</b>	<b>Non-specific</b>
Anticancer	Anorexia
Spinal cord compression (SCC)	Lethargy
Superior vena cava obstruction (SVCO)	Dyspnoea
Raised intra-cranial pressure (ICP)	Nausea and vomiting
Cerebral tumours	Malignant pyrexia
Lymphangitis carcinomatosa	Sweats
Oesophageal obstruction	Pain
Bowel obstruction	
Biliary obstruction	
Liver capsule pain	
Nerve compression pain	
Obstructive lymphadenopathy	

### Initiating steroids

- Monitor patient closely for symptomatic response.
- Wean to lowest effective dose to minimise potential side effects.
- When reducing dose, allow time on new dose to assess whether there is any deterioration (at least 3-4 days).
- Consider use of gastro-protection, especially if on concurrent NSAIDs.
- Regular urinalysis or random blood glucose levels (preferably measured in the afternoon or teatime) should be monitored in all patients and regular blood glucose levels closely monitor if patient is a known diabetic.

### Choice of steroid:

- Current practice is to use dexamethasone in patients with advanced malignancy.
- It has mainly glucocorticoid action.
- High relative glucocorticoid potency means lower doses are needed compared with other steroids.

<b>Drug</b>	<b>Relative dose</b>	<b>Biological half-life</b>
Hydrocortisone	20mg	8-12h
Prednisolone	5mg	18-36h
Methylprednisolone	4mg	18-36h
Dexamethasone	0.75mg	36-54h

### Administration:

#### Dose:

There is little evidence-based data on dosage. These doses below for specific indications follow current conventional best practice.

<b>2-4mg daily</b>	<b>6-8mg daily</b>	<b>Up to 16mg daily</b>
Anorexia	Lymphangitis	SCC
Lethargy	Pain	SVCO
Nausea and vomiting	Biliary obstruction	Cerebral tumours
Sweats	Dyspnoea	Raised ICP
Malignant pyrexia	Obstructive lymphadenopathy	Bowel obstruction
Liver capsular pain	Nerve compression pain	Oesophageal obstruction

### Route:

- Dexamethasone is available in injectable form for IV or SC use and as tablets or syrup for oral use.
- Oral is as effective as IV/SC if there are no concerns about oral drug absorption.
- If dysphagia or vomiting give SC either stat or as short subcutaneous infusion.

### Frequency:

- Dexamethasone has a long biological half-life so can be given once daily.
- Single daily dose in morning or if on high dose can split dose twice daily.
- Give all doses before lunchtime to avoid insomnia (e.g. 0800 for once daily or 0800 and 1200 for twice daily dosing).

### Side effects:

Doses of 4mg of dexamethasone per day or more are likely to lead to side effects after several weeks including:

- Fluid retention.
- Cushingoid changes e.g. moon face.
- Skin changes e.g. bruising and striae.
- Increased risk of infection.
- Neuro-psychiatric side effects e.g. euphoria, psychosis
- Gastric irritation alone, with increased risk if used in conjunction with NSAIDs.
- Hyperglycaemia, either worsening of pre-existing diabetes or new onset.
- Proximal myopathy (medium term use).
- Osteoporosis (long term use).

### Stopping steroids:

- If no symptomatic benefit within 1 week of starting treatment, discontinue.
- Often have a limited duration of action (2-4 weeks) so need to review response regularly and stop once no longer benefiting.
- If on treatment for less than 2 weeks and dose <6mg dexamethasone or equivalent stop abruptly.
- If on treatment for more than 2 weeks or dose >6mg dexamethasone or equivalent the dose needs to be titrated down to avoid adrenal crisis.

## CARE OF THE DYING PATIENT

### Recognition of the last few days of life:

Signs and symptoms that the patient may be in the last few days of life may include:

- Increasing weakness and immobility
- Loss of interest in food and fluid
- Difficulty in swallowing
- Often develops over days to weeks
- All reversible causes have been excluded or deemed untreatable
- Care should be guided by the individual care record for the last days of life (ICRLDL)

### Assessing the needs of the patient:

- Focus on what the patient perceives as problems
- Remember symptoms are often under-reported
- Non-verbal cues of distress may be present
- Explore their fears

### Assessing the needs of the family:

- Check their understanding of the situation
- Address any fears or misunderstandings
- Ensure they have adequate professional support
- Think about risk factors for a difficult bereavement

### Hydration and nutrition:

- Offer oral fluids as tolerated and consider assisted hydration if appropriate
- Offer oral nutrition as tolerated (risk/comfort feeding is acceptable)
- Consider any need for clinically assisted nutrition

### Spiritual Care:

- Ensure spiritual needs are assessed and addressed with the patient and their family/carers.

### Principles of symptom control in the last few days of life:

- Refer to local end of life care guidelines
- Stop all unnecessary observations and interventions (e.g. medications, blood tests, fluids, etc)
- Convert all necessary oral medication for symptoms control to the subcutaneous route, both regularly via syringe pump and as required e.g. analgesia
- Ensure the availability of drugs for new symptoms that may arise (see anticipatory prescribing guidelines)
- Seek specialist advice for prescribing for patient in renal failure
- Review regularly

### Anticipatory prescribing:

Ensure medications are prescribed and available on a 'when required' basis for the symptoms that commonly arise during the last few days of life. These could include:

- Analgesic: Strong opioid – for example morphine (or oxycodone) SC at 1/6 total 24 hour dose
- Antiemetic: levomepromazine 6.25mg SC prn; haloperidol 1.5mg SC prn; metoclopramide 10mg SC prn
- Anxiolytic: for example midazolam 2.5-5mg SC prn
- Anti-secretory: glycopyrronium 0.2mg SC prn (max 1.2mg in 24 hours); hyoscine hydrobromide 0.4mg SC prn (max 2.4mg in 24 hours); hyoscine butylbromide 20mg SC prn (max 80mg 24 hours)

Refer to the Anticipatory prescribing policy for end of life care for further information or contact Specialist Palliative Care Teams

## Symptoms & management of the dying patient:

Noisy respiration:	<ul style="list-style-type: none"> <li>• Often occurs because the patient is too weak to clear secretions</li> <li>• It is usually more distressing for the carers than it is for patient – reassurance and explanation of the symptom is required</li> <li>• May respond to appropriate positioning (semi-recumbent)</li> <li>• If possibility of heart failure consider furosemide 40mg stat</li> <li>• Anticholinergics can be used: <ul style="list-style-type: none"> <li>○ Glycopyrronium 0.2mg SC stat and 0.6-1.2mg/24hrs via CSCI</li> <li>○ Hyoscine hydrobromide 0.4mg SC stat and 1.2-2.4mg/24hrs via CSCI</li> <li>○ Hyoscine butylbromide 20mg SC stat and 60-120mg/24hrs via CSCI</li> </ul> </li> <li>• Meticulous mouthcare is essential</li> </ul>
Pain:	<ul style="list-style-type: none"> <li>• Where possible continue previously effective analgesia</li> <li>• NSAIDS (e.g. diclofenac or ketorolac SC stat or via CSCI) can be used subcutaneously under the advice of the specialist palliative care team</li> <li>• Medications for neuropathic pain should be continued orally where possible. If s/c treatment required contact specialist palliative care for advice.</li> <li>• Morphine is the usual drug of choice for parenteral administration, unless the patient is already maintained on an alternative step 3 opioid or is in renal failure <ul style="list-style-type: none"> <li>○ Divide total daily dose of oral morphine by 2 to give equivalent daily dose of parenteral morphine</li> <li>○ Remember to prescribe parenteral breakthrough analgesia at 1/6<sup>th</sup> of the equivalent daily dose of regular opioid</li> <li>○ Opioid conversion charts should be used</li> </ul> </li> </ul>
Restlessness and agitation:	<ul style="list-style-type: none"> <li>• Exclude reversible causes e.g. urinary retention, drug therapy</li> <li>• Treat contributory symptoms e.g. pain</li> <li>• Ensure calming environment</li> <li>• If symptoms persist consider drug therapy, such as: <ul style="list-style-type: none"> <li>○ midazolam 2.5 - 5mg SC stat and 10-60mg/24hrs via CSCI</li> <li>○ levomepromazine 12.5 - 25mg SC stat and 12.5-150mg/24hrs via CSCI</li> <li>○ haloperidol 2.5-5mg SC stat and 5-10mg/24 hrs via CSCI</li> </ul> </li> <li>• If symptoms persist despite treatment as above, seek advice from specialist palliative care team.</li> </ul>
Nausea and vomiting:	<ul style="list-style-type: none"> <li>• Think about the likely cause &amp; reverse the reversible if appropriate</li> <li>• Choose an anti-emetic based on the probable cause – see the section on nausea and vomiting for further information.</li> </ul>
Dry mouth:	<ul style="list-style-type: none"> <li>• See Mouth Care section for further information.</li> <li>• There is no evidence that parenteral fluids improve a dry mouth.</li> <li>• Meticulous mouthcare is essential, offered as the person is able to tolerate. Where possible the family/carer can be educated and included.</li> <li>• When assessing a patients mouth ask about dry mouthm oral pain, excessive salivation, dysphagia and bleeding.</li> <li>• Examine the mouth for signs of dehydration, level of oral hygiene, ulceration, white patches, bleeding and infection. Re-examine if the patient becomes unconscious.</li> <li>• Technique: <ul style="list-style-type: none"> <li>○ Combine below with 2 hourly cleaning with water (or patient's choice of liquid) as appropriate.</li> <li>○ Apply yellow soft paraffin/oral balance gel to lips prior to mouth care</li> <li>○ A small soft toothbrush is the most effective tool</li> <li>○ If a toothbrush is not possible the tongue &amp; gingival mucosa should be cleaned using a pink foam stick or gloved/gauze/swabbed finger.</li> <li>○ 2 - 6 hourly cleaning of teeth and mouth either with toothbrush and toothpaste or chlorhexidine mouthwash or Oraldene mouthwash</li> <li>○ <u>RINSE MOUTH WELL</u> with tap water (use suction only if necessary).</li> </ul> </li> </ul>

Subject Specific Reference: National Council for Hospice and Specialist Palliative Care Services. *Changing Gear – Guidelines for Managing the Last Days of Life in Adults*. London: National Council for Hospice and Specialist Palliative Care Services, 1997.



**Non opioids:**

Medication	Indications	Preparations	Dose
Paracetamol:	Mild moderate pain: usually worth continuing in conjunction with strong opioids for synergistic effect, pyrexia	<ul style="list-style-type: none"> <li>Tablets/capsules: 500mg</li> <li>Oral suspension: 250mg/5ml &amp; 500mg/5ml</li> <li>Suppositories: 500mg, 1g</li> </ul>	1g qds maximum 4hrly, maximum dose 4g/24hrs
Entonox:	Dressing changes	Inhalation	Available for use on specialist advice only.

**Non-steroidal anti-inflammatory drugs (NSAIDs):**

Consider concurrent use lansoprazole 15mg od as a gastroprotective agent for at risk patients

Medication	Indications	Preparations	Dose
Naproxen	Pain associated with inflammation.  Choice of NSAID is often dictated by benefit/adverse effect profile but naproxen or ibuprofen should be considered for first line treatment.	<ul style="list-style-type: none"> <li>Tablets 250mg or 500mg</li> </ul>	250-500mg bd
Ibuprofen		<ul style="list-style-type: none"> <li>Tablets 200mg, 400mg, 600mg &amp; 800mg,</li> <li>Liquid 100mg/5ml</li> </ul>	400-600mg tds-qds, max 2.4g/24 hrs
Diclofenac		<ul style="list-style-type: none"> <li>Tablets EC: 25mg &amp; 50mg,</li> <li>Tablets MR: 75mg &amp; 100mg</li> <li>Dispersible tablets 50mg</li> <li>Suppository 12.5mg, 25mg, 50mg, 100mg,</li> <li>Injection 37.5mg/ml 2ml vial, 25mg/ml 3ml vial</li> </ul>	Max 150mg/24hrs
Ketorolac:	Severe inflammatory pain	<ul style="list-style-type: none"> <li>Injection</li> </ul>	30-60mg/24hrs via CSCl

**Opioid analgesics**

- When prescribing opioids brand names should be used.
- When converting between opioid preparations please refer to opioid conversion chart on page 26.
- For patients with renal failure please seek specialist advice.

**Weak opioids:**

Medication	Indications	Preparations	Dose
Codeine:	Moderate pain  Avoid combination preparations such as co-codamol and co-dydramol. Instead prescribe regular weak opioid with regular paracetamol.	<ul style="list-style-type: none"> <li>Tablets 15mg, 30mg &amp; 60mg</li> <li>Liquid 25mg/5ml</li> </ul>	15-60mg qds
Co-codamol:		<ul style="list-style-type: none"> <li>Tablets &amp; caps 8/500, 15/500 &amp; 30/500,</li> <li>Effervescent tablets 8/500 &amp; 30/500</li> </ul>	2 tabs qds
Dihydrocodeine:		<ul style="list-style-type: none"> <li>Tablets 30mg</li> <li>Liquid 10mg/5ml)</li> </ul>	30-60mg qds
Co-dydramol:		<ul style="list-style-type: none"> <li>Tablets 10/500, 20/500 &amp; 30/500</li> </ul>	2 tabs qds
Tramadol:		<ul style="list-style-type: none"> <li>Capsules/disp tabs 50mg,</li> <li>MR tablets 100mg, 150mg, 200mg,</li> <li>MR capsules 50mg, 100mg, 150mg, 200mg</li> </ul>	Max 400mg/24 hrs

There is no benefit from switching from one opioid to another if it is deemed to be ineffective. Instead move up to step three on the analgesic ladder. 1 in 10 Caucasians do not metabolise codeine therefore it is ineffective.

**Strong opioids:**

- Morphine sulfate is the oral opioid of first choice for moderate to severe cancer pain.

Medication	Indication	Preparations	Dose
Morphine Sulfate	Moderate to severe pain	<p>Immediate release:</p> <ul style="list-style-type: none"> <li>• Liquid: 10mg/5ml and 100mg/5ml</li> <li>• Tablets: 10mg, 20mg, 50mg</li> <li>• Sustained release over 12 hours:</li> <li>• Tablets: 5mg, 10mg, 15mg, 30mg, 60mg, 100mg, 200mg</li> <li>• Capsules: 10mg, 30mg, 60mg, 100mg, 200mg (Zomorph)</li> <li>• Granules: 20mg, 30mg, 60mg, 100mg, 200mg</li> </ul> <p>Sustained release over 24 hours:</p> <ul style="list-style-type: none"> <li>• Capsules: 30mg, 60mg, 90mg, 150mg, 200mg (e.g. MXL). MXL is less appropriate for use in palliative care.</li> </ul> <p>Injectable:</p> <ul style="list-style-type: none"> <li>• 10mg/ml, 15mg/ml, 20mg/ml and 30mg/ml available in 1ml and 2ml ampoules</li> <li>• Approximately twice as potent as oral morphine sulfate</li> </ul>	<p><i>Guidelines for initiating morphine:</i></p> <ul style="list-style-type: none"> <li>• Can be given as single injections or as continuous subcutaneous infusion via syringe pump.</li> <li>• Approximately twice as potent as oral morphine therefore to convert oral morphine to subcutaneous morphine give ½ of the oral dose</li> <li>• For opioid naïve patients requiring a syringe pump for <b>pain or breathlessness</b> appropriate starting doses are 5 -10mg by subcutaneous infusion over 24 hours. Remember to prescribe additional 'as required' analgesia (1/6<sup>th</sup> of total 24 hour dose available up to hourly if needed)</li> <li>• Talk to the patient; allay any fears or concerns (e.g. addiction, side effects, meanings associated with morphine)</li> <li>• Start a low dose of regular morphine (2.5 - 5mg four hourly in opioid naive patients or 5-10mg four hourly in patient previously on weak opioids. 10-20mg BD 12 hourly slow release tablets can also be used)</li> <li>• Write doses of liquid in mg not mls</li> <li>• Remember to prescribe additional 'as required' analgesia (1/6<sup>th</sup> of total 24 hour dose available up to hourly if needed)</li> <li>• Morphine sulfate liquid takes 20-30 minutes to work and lasts up to 4 hours.</li> <li>• Morphine sulfate immediate release tablets take 90 minutes to work and last up to four hrs.</li> <li>• Co-prescribe a laxative (e.g. Sodium docusate 100 - 200mg bd - tds and senna 2 – 4 tablets on)</li> <li>• Prescribe an anti-emetic (e.g. Metoclopramide 10-20mg tds or haloperidol 1.5-3mg on)</li> <li>• Assess for pain relief and side effects</li> <li>• If pain still present and opioid sensitive, increase dose by 30-50%</li> <li>• When analgesic requirements are stable convert to a sustained release preparation</li> </ul>

Diamorphine	First choice strong opioid if injectable form required (alternative to morphine sulfate injection)	<p>Injection</p> <ul style="list-style-type: none"> <li>• Powder for reconstitution 5mg, 10mg, 30mg, 100mg, 500mg ampoules</li> <li>• Diluent: water for injection</li> </ul>	<ul style="list-style-type: none"> <li>• Specialist Palliative care initiation only</li> <li>• Can be given as single injections or as continuous subcutaneous infusion via syringe pump</li> <li>• Approximately three times more potent than oral morphine, therefore to convert oral morphine to subcutaneous diamorphine give 1/3 of the oral dose</li> </ul>
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Medication	Indication	Preparations	Dose
Oxycodone oral	Patients with opioid sensitive pain who have: <ul style="list-style-type: none"> <li>• side effects (e.g. hallucinations) with morphine</li> <li>• Patients with moderate renal failure or for 'as required' dosing in patients with severe renal failure</li> <li>• Approximately twice as strong as morphine</li> </ul>	Immediate release: <ul style="list-style-type: none"> <li>• Liquid: 5mg/5ml, 10mg/1ml;</li> <li>• Capsules: 5mg, 10mg, 20mg</li> </ul> Sustained release over 12 hours: <ul style="list-style-type: none"> <li>• Tablets: 5mg, 10mg, 15mg, 20mg, 30mg, 40mg, 60mg, 80mg, 120mg</li> </ul>	<ul style="list-style-type: none"> <li>• Talk to the patient: allay any fears or concerns (e.g. addiction, side effects, meanings associated with oxycodone)</li> <li>• Start a low dose of regular oxycodone (1.25 - 2.5mg four hourly in opioid naive patients or 2.5 - 5mg four hourly in patient previously on weak opioids)</li> <li>• Write doses for liquids in mg not mls</li> <li>• Oxycodone liquid takes 20-30 minutes to work and lasts for up to four hours.</li> <li>• Remember to prescribe additional 'as required' analgesia (1/6<sup>th</sup> of total 24 hour dose available up to hourly if needed)</li> <li>• Co-prescribe a laxative (e.g. Sodium docusate 100 - 200mg bd - tds and senna 2 - 4 tablets on)</li> <li>• Ensure an anti-emetic is available (e.g. Metoclopramide 10 - 20mg tds or haloperidol 1.5 - 3mg on)</li> <li>• Assess for pain relief and side effects</li> <li>• If pain still present and opioid sensitive, increase dose by 30-50%</li> <li>• When analgesic requirements are stable convert to a sustained release preparation</li> </ul>
Oxycodone injection		Injection: <ul style="list-style-type: none"> <li>• 10mg/ml solution: 1ml and 2ml ampoules, 50mg/ml solution</li> </ul>	<ul style="list-style-type: none"> <li>• Can be given as single injections or as continuous subcutaneous infusion via syringe pump</li> <li>• Approximately twice as potent as oral oxycodone therefore to convert oral oxycodone to subcutaneous oxycodone give ½ of the oral dose</li> </ul>

Medication	Indication	Preparations	Dose
Fentanyl, transdermal	<p>Patients with opioid sensitive pain experiencing side effects with morphine</p> <p>Patients unable to take oral opioids or have gastrointestinal absorption problems</p> <p>Patients in renal failure</p> <p><b>Patches should not be used in patients with acute, uncontrolled pain.</b></p>	<ul style="list-style-type: none"> <li>• Self-adhesive matrix patch.</li> <li>• Patch sizes: 12, 25, 50, 75 and 100mcg/hr (e.g. Durogesic DTrans)</li> </ul>	<ul style="list-style-type: none"> <li>• Patches should not be used in patients with acute, uncontrolled pain.</li> <li>• To convert from another opioid please refer to opioid conversion chart for equivalent strength patch required.</li> <li>• When applying the first patch the onset of action occurs in 12 hours, therefore previous analgesia should be continued for 12 hours after the first fentanyl patch is applied (e.g. last dose of sustained release morphine or oxycodone should be given at the same time as the first fentanyl patch is applied.)</li> <li>• Patches should be changed every 72 hours.</li> <li>• Very occasionally patients may require their patches to be changed every 48 hours, but this should only be done on specialist palliative care advice.</li> <li>• After the first application it takes 36 - 48 hours to reach steady state plasma concentrations. Steady state then remains throughout patch changes.</li> <li>• Elimination plasma half life is 15 - 17 hours; therefore once a patch has been removed and not replaced the fentanyl will continue to work for at least a further 12 hours.</li> <li>• Patients should be advised of the risk of increased absorption and the risk of toxicity if they are exposed to increased temperature e.g. hot bath/sauna (these should be avoided) or fever.</li> </ul>
Rapid onset Fentanyl, transmucosal /intranasal	<p>Rapidly escalating, unpredictable breakthrough cancer pain in patients already on regular strong opioids e.g. incident pain.</p> <p><b>NOT INTENDED AS FIRST LINE BREAKTHROUGH ANALGESIA FOR PATIENTS ON FENTANYL PATCHES</b></p>	<p><b>To be prescribed by specialist palliative care teams only.</b></p> <ul style="list-style-type: none"> <li>• Buccal: e.g. Effentora,</li> <li>• Sublingual: e.g. Abstral &amp; Effentora</li> <li>• Intranasal preparations: e.g. Instanyl + PecFent</li> <li>• Transmucosal: e.g. Actiq (less suitable for use)</li> </ul>	<ul style="list-style-type: none"> <li>• Patients must be maintained on at least 60mg oral morphine daily or equivalent analgesia</li> <li>• Under no circumstances should they be used in opioid naïve patients.</li> <li>• Pain relief occurs rapidly (5 - 15 minutes)</li> <li>• Dose titration needed in each patient under supervision from specialist palliative care team. Dose cannot be predicted from dose of regular strong opioid. Doses of each preparation are not equivalent.</li> </ul>

Medication	Indication	Preparations	Dose
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Methadone	<ul style="list-style-type: none"> <li>• Patients with opioid sensitive pain experiencing side effects with morphine</li> <li>• May be more effective than morphine for neuropathic pain</li> </ul>	<ul style="list-style-type: none"> <li>• Tablets: 5mg</li> <li>• Solution: 1mg/ml, 10mg/ml, 20mg/ml</li> <li>• Injection: 10mg/ml in 1ml, 2ml, 3.5ml and 5ml ampoules</li> </ul>	<ul style="list-style-type: none"> <li>• Dose requirements should be titrated under specialist palliative care supervision, usually as an in-patient</li> <li>• When dose requirements stable, give 12 hourly</li> <li>• Long and unpredictable plasma half-life (8 - 75 hours)</li> <li>• Highly lipophilic, accumulates in tissues creating a potentially extensive reservoir</li> <li>• Injectable form can be given by continuous subcutaneous infusion, give ½ of the daily oral dose over 24 hours</li> </ul>
Alfentanil:	Patients with severe renal failure who require a parenteral opioid	<ul style="list-style-type: none"> <li>• 500mcg/ml 2ml &amp; 10ml amps:</li> </ul>	<ul style="list-style-type: none"> <li>• For use under specialist palliative care supervision only</li> <li>• Synthetic derivative of fentanyl with a short plasma half life (100mins) metabolised in the liver to inactive compounds</li> <li>• 10 times more potent than diamorphine</li> </ul>
Buprenorphine	<p>Patients unable to take oral opioids or have gastrointestinal absorption problems</p> <p><b>Patches should not be used in patients with acute, uncontrolled pain.</b></p>	<ul style="list-style-type: none"> <li>• 7 day patches: 5mcg/hr, 10mcg/hr, 20mcg/hr</li> <li>• 4 day patches: 35mcg/hr, 52.5mcg/hr, 70mcg/hr.</li> </ul>	<ul style="list-style-type: none"> <li>• A partial opioid agonist</li> <li>• Patches should be changed every 4 or 7 days depending on brand.</li> <li>• To convert from another opioid please refer to opioid conversion chart for equivalent strength patch required.</li> <li>• When applying the first patch the onset of action occurs in 12-24 hours, therefore previous analgesia should be continued for 12 hours after the first buprenorphine patch is applied.</li> <li>• After the first application it takes 9 days to reach steady state plasma concentrations. Steady state then remains throughout patch changes.</li> <li>• No dosage adjustments should be made for the first 72 hours. After 72 hours if the patient continues to require two or more doses of breakthrough analgesia the next strength patch should be used.</li> <li>• Elimination plasma half-life varies but is long therefore once a patch has been removed and not replaced the buprenorphine will continue to work for at least a further 24 hours.</li> <li>• Patients should be advised of the risk of increased absorption and the risk of toxicity if they are exposed to increased temperature e.g. hot bath/sauna (these should be avoided) or fever.</li> </ul>

### **Calculating dosage adjustments in patients receiving opioid analgesia:**

If a patient regularly needs two or more doses of medication for breakthrough pain between doses of the regular opioid the dose of the regular opioid prescribed needs to be reviewed with a view to it being increased. Before this can be done a thorough history from the patient and an assessment of the response to the breakthrough doses given and the incidence of any possible opioid induced side effects including confusion, drowsiness, constipation etc. must be performed.

If the patient reports that the immediate release opioid for breakthrough pain is effective in relieving their pain and is well tolerated with no evidence of opioid induced side effects, the dose of the regular opioid may be increased by either 30% if two extra doses have been given in 24 hours or 50% if three or more doses have been given in 24 hours. The dose increment of the regular opioid should be no more than 30-50%. This new dose of regular opioid should be maintained until at least 3 consecutive doses have been administered before considering any further dose increment. It is imperative that before each dose increment the patient and his/her pain should be reassessed each time. Increments in opioid dose should never be made without seeing and assessing the patient first.

If the pain seems to be only partially sensitive or insensitive to the breakthrough dose (often indicated by repeated doses given over a short time period with minimal benefit reported by the patient and/or the presence of opioid induced side effects then the pain should be reassessed as to its possible cause and the addition of other adjuvant analgesics should be considered e.g. bisphosphonates, anticonvulsants, etc. Advice should be sought from the specialist palliative care team as appropriate.

When prescribing a new regular dose of opioid the dose of the PRN immediate release opioid will also need to be increased to account for the new regular opioid dose prescribed. Please refer to the Opioid Conversion Chart for further information..

**Neuropathic pain:**

- Often aching in nature, sometime burning or shooting pain
- May not respond in a predictable way to analgesia

Medication		Indication	Preparations	Dose	
Tricyclic anti-depressants:	Amitriptyline:	Neuropathic pain	<ul style="list-style-type: none"> <li>• Tablets 10mg, 25mg and 50mg</li> </ul>	<ul style="list-style-type: none"> <li>• 10-75 mg nocte.</li> <li>• Start at low dose and increase as tolerated. May take up to one week before analgesic effect apparent</li> </ul>	
	Duloxetine		<ul style="list-style-type: none"> <li>• Capsules 30mg, 60mg</li> </ul>	<ul style="list-style-type: none"> <li>• 30mg od to 60mg BD.</li> <li>• Start at low dose and increase as tolerated. May take up to one week before analgesic effect apparent</li> </ul>	
	Nortriptylline:		<ul style="list-style-type: none"> <li>• Tablets 10mg, 25mg</li> </ul>	<ul style="list-style-type: none"> <li>• 10-75 mg nocte.</li> <li>• Start at low dose and increase as tolerated. May take up to one week before analgesic effect apparent</li> </ul>	
Anti-convulsants	Gabapentin:		<ul style="list-style-type: none"> <li>• Capsules 100mg, 300mg, 400mg</li> <li>• Tablets 600mg, 800mg</li> </ul>	<ul style="list-style-type: none"> <li>• Requires careful dose titration, initially 300mg nocte day 1, 300mg bd day 2, then 300mg tds thereafter, increasing further by 300mg daily as required to max 900mg tds..</li> </ul>	
	Pregabalin:		<ul style="list-style-type: none"> <li>• Capsules 25mg, 50mg, 75mg, 100mg, 150mg, 225mg, 300mg</li> </ul>	<ul style="list-style-type: none"> <li>• 75 – 300mg bd.</li> <li>• Start low and increase dose as tolerated. Stop if no benefit after 5 - 7 days at maximum dose tolerated.</li> </ul>	
	Clonazepam		<ul style="list-style-type: none"> <li>• Tablets 0.5mg &amp; 2mg</li> </ul>	<ul style="list-style-type: none"> <li>• 0.5 - 4mg nocte. Start low and increase as tolerated. Stop if no benefit after 5 - 7 days at maximum dose tolerated.</li> </ul>	
	Sodium valproate		<ul style="list-style-type: none"> <li>• MR tablets 200mg, 300mg, 500mg</li> <li>• EC tablets 200mg, 500mg</li> <li>• Crushable tablets 100mg</li> <li>• Liquid 200mg/5ml</li> <li>• Injection 400mg vial</li> </ul>	<ul style="list-style-type: none"> <li>• 200mg – 1g ON</li> <li>• Start low and increase dose as tolerated. Stop if no benefit after 5 - 7 days at maximum dose tolerated.</li> </ul>	
Steroids	Dexamethasone		Neuropathic pain – after failure of other agents <b>Use under specialist palliative care advice only</b>	<ul style="list-style-type: none"> <li>• Tablets 0.5mg and 2mg</li> </ul>	<ul style="list-style-type: none"> <li>• 8mg od and adjust accordingly.</li> <li>• Use under specialist palliative care advice only</li> <li>• Review after 5 days and stop if no response. If effective wean to lowest effective dose and continue.</li> </ul>
Ketamine				<ul style="list-style-type: none"> <li>• Injection 10mg/ml, 50mg/ml, 100mg/ml</li> </ul>	<ul style="list-style-type: none"> <li>• To be commenced and monitored by specialist palliative care teams only</li> </ul>
Lidocaine patches 5%				<ul style="list-style-type: none"> <li>• Lidocaine 5% patches</li> </ul>	<ul style="list-style-type: none"> <li>• Apply to the painful area for maximum 12 hour duration (12 hours on, 12 hours off)</li> <li>• Patches maybe cut to fit. Maximum three patches used at one time</li> <li>• May take up to a week to see benefit.</li> </ul>

**Bone pain:**

- Pain that may relate to bone metastases

Medication		Indication	Preparations	Dose
Bisphosphonates	Disodium Pamidronate	Bone pain	• Injection 15mg or 90mg	<ul style="list-style-type: none"> <li>• First line use - 90mg IVI repeated every 3-4 weeks if effective given in conjunction with calcium supplements and vitamin D.</li> <li>• Assess dental state prior to commencing bisphosphonates and suspect osteonecrosis of the jaw if the patient develops jaw pain.</li> </ul>
	Zoledronic acid		• Injection 4mg	<ul style="list-style-type: none"> <li>• 4mg by IVI</li> <li>• Repeated every 3-4 weeks if effective given in conjunction with calcium supplements and vitamin D.</li> <li>• Assess dental state prior to commencing bisphosphonates and suspect osteonecrosis of the jaw if the patient develops jaw pain.</li> </ul>
NSAID's			See guideline above	
Steroids	Dexamethasone		• Tablets 0.5mg or 2mg	• 8mg daily, review after 5 days and stop if no response.
Radiotherapy				
Surgery		For actual or potential long bone fractures		

**Liver capsule pain**

- Stretching of the liver due to metastases
- Stitch like pain, sometimes refers to the right shoulder
- Can be sudden in onset, severe and sharp pain

Medication		Indication	Preparations	Dose
Steroids	Dexamethasone	Liver capsule pain	• Tablets 0.5mg or 2mg	<ul style="list-style-type: none"> <li>• 8mg daily, review after 5 days and stop if no response. If effective wean to lowest effective dose and continue.</li> </ul>
NSAID's			See guideline above	

**Bowel colic**

- Colicky cramp like pain, sometimes associated with food
- May result from subacute/complete bowel obstruction

Management:

- Relatively opioid insensitive
- Consider hyoscine butylbromide (Buscopan) 40 - 120mg/24hrs by continuous subcutaneous infusion
- See section on bowel obstruction for further information

## **Muscle spasm**

### Management:

- Relatively opioid insensitive
- Consider:
  - Diazepam 2 - 10mg orally tds
  - Baclofen 5 - 30mg tds (start at 5mg tds and increase by 5mg tds every 2-3 days: avoid in patients with cerebral metastases/tumour due to risk of fits)
- TENS may be useful
- Heatpads may be useful
- Massage or physiotherapy may also be helpful

### Subject Specific References:

- Grond S et al. Assessment and treatment of neuropathic cancer pain following WHO Guidelines. *Pain* 1999; **79**: 15-20.
- Hanks, GW et al. Morphine and alternative opioids in cancer pain: the EAPC recommendations. *British Journal of Cancer* 2001; **84**(5): 587-593.
- Mannix, K et al. Using bisphosphonates to control the pain of bone metastases: evidence based guidelines for palliative care. *Palliative Medicine* 2000; **14**: 455-461
- McQuay, H et al. Anti-convulsant drugs for the management of pain: a systematic review. *British Medical Journal* 1995; **311**: 1047-52
- McQuay, HJ et al. A systematic review of antidepressants in neuropathic pain. *Pain* 1996; **68**: 217-227.

### Simplified Opioid Conversion Chart

ORAL MORPHINE (mg)			FENTANYL PATCH (mcg/hr)	SC MORPHINE (mg)		ORAL OXYCODONE (mg)		SC OXYCODONE (mg)		BUPRENORPHINE PATCH (mcg/hr)	SC ALFENTANIL (mg)		SC DIAMORPHINE (mg)	
4 hrly dose	12 hrly MR dose	24 hour dose	Patch strength	4 hrly dose	24 hour dose	4 hrly dose	12 hrly MR dose	4 hrly dose	24 hour dose	Patch strength	4 hrly dose	24 hour dose	4 hrly dose	24 hour dose
5	15	30	12	2.5	15	2.5	5-10	1.25	7.5	35	0.125	1	2.5	10
10	30	60	12-25	5	30	5	15	2.5	15	35	0.25	2	2.5	20
15	45	90	25	7.5	45	7.5	20	3.75	20	52.5	0.5	3	5	30
20	60	120	25-37	10	60	10	30	5	30	70	0.75	4	7.5	40
30	90	180	50	15	90	15	45	7.5	45	105	1	6	10	60
40	120	240	75	20	120	20	60	10	60	140	1.25	8	12.5	80
50	150	300	75	25	150	25	75	12.5	75	140	1.5	10	15	100
60	180	360	100	30	180	30	90	15	90	140	2	12	20	120
70	210	420	125	35	210	35	105	(17.5)	105	140	2.5	14	20	140
80	240	480	125	40	240	40	120	(20)	120	140	2.5	16	25	160
90	270	540	150	45	270	45	135	(22.5)	135	140	3	18	30	180
100	300	600	150	50	300	50	150	(25)	150	140	3.5	20	30	200
110	330	660	175	55	330	55	165	(27.5)	165	140	3.75	22	35	220
120	360	720	200	60	360	60	180	(30)	180	140	4	24	40	240

- All figures are based on the conversions & then rounded up or down. Remember to ensure appropriate 4/12/24hourly columns are used correctly.
- When converting between opioids, re-titration of new opioid may be necessary (considerable inter-patient variation will occur). Always reassess the patient carefully and anticipate the need to titrate the dose either upwards or downwards.
- When first using a different opioid, it is advisable to be cautious in the use of PRN doses. **For example, for a patient on Fentanyl patch 75mcg/hr who has never previously received Morphine Sulfate, a PRN dose of 15-20mg may be sufficient at first, rather than the 40-50mg suggested on the chart.**
- When first applying a Fentanyl patch or Buprenorphine patch regular analgesics should be continued for 12 hours after the initial application.
- When a Fentanyl patch is removed and not replaced the Fentanyl will continue to work for a further 12 hours.
- When a Buprenorphine patch is removed and not replaced the Buprenorphine will continue to work for a further 24 hours.
- Patients who have a patch for pain should keep their patch in place and have it changed as usual as stated on their prescription. If the patient is unable to swallow PRN subcutaneous analgesia should be prescribed. If 3 or more PRN doses are needed a syringe pump can be set up over 24 hours **IN ADDITION** to the patch.
- Buprenorphine does not yet have a standard conversion ratio. The figures above are a guideline only. The maximum patch dose is 140mcg/hr.
- Stat doses of Oxycodone SC > 15mg are generally impractical because of the volume required.

Conversion ratios:  Ensure that you compare the same dose period (i.e. 4/12/24 hours)	PO codeine to PO morphine	Divide total codeine dose by 10
	PO tramadol to PO morphine	Divide total tramadol dose by 5-10
	PO tramadol to TD buprenorphine	≤50mg/day tramadol = 5mcg/hr buprenorphine; 50-100mg/day tramadol = 10mcg/hr buprenorphine; >100mg/day tramadol = 20mcg/hr buprenorphine
	PO codeine to TD buprenorphine	≤30-60mg/day codeine = 5mcg/hr buprenorphine; 60-120mg/day codeine = 10mcg/hr buprenorphine; >120mg/day codeine = 20mcg/hr buprenorphine
	PO morphine to TD fentanyl	Divide total daily dose morphine by 3 to give fentanyl patch strength in mcg/hr
	PO morphine to PO methadone	Divide total daily morphine dose by 3 - 6
	PO morphine to SC diamorphine	Divide morphine dose by 3
	PO morphine to PO oxycodone	Divide morphine dose by 2
PO oxycodone to SC oxycodone	Divide oral oxycodone dose by 2	

## GASTRO-INTESTINAL SYMPTOMS

### Anorexia-cachexia syndrome

#### Causes:

- Loss of appetite and weight loss are common in patients with malignancies, occurring in 70-80% of patients due to a combination of direct and systemic tumour effects and treatment.
- Due to a combination of direct tumour effects, systemic tumour effects and treatment.

#### Diagnosis:

- Evidence of weight loss
- Dietary history
- Biochemistry e.g. serum albumin

#### Management:

##### *Exclude/treat reversible causes:*

- Oral problems e.g. candida
- Nausea and vomiting
- Dysphagia
- Oesophagitis

##### *Non-pharmacological management:*

- Explanation and reassurance to patient and family.
- Refer to the dietician
  - Supplements may prevent further weight loss but there is no evidence that they improve weight gain or quality of life.

##### *Pharmacological management:*

<b>Corticosteroids:</b>	E.g. Dexamethasone 4mg od (give as single dose no later than lunchtime). <ul style="list-style-type: none"> <li>• Improves appetite.</li> <li>• Weight gain is uncommon but may occur due to fluid retention.</li> <li>• Decreases fatigue.</li> <li>• Rapid onset of action.</li> <li>• May have limited duration of action (approx. 4 - 6 weeks), but helpful in patients with short prognosis.</li> <li>• Stop after 1 week if no benefit.</li> <li>• If develop side effects or prognosis is longer than weeks, consider decreasing to 2mg od.</li> </ul>
<b>Progestogens:</b>	E.g. Megestrol acetate starting at 80-160mg daily, if poor response after 2 weeks consider doubling the dose to a maximum of 800mg daily or medroxyprogesterone 400mg mg od or bd. <ul style="list-style-type: none"> <li>• Improves appetite.</li> <li>• Weight gain (both fat and lean muscle).</li> <li>• Decreases fatigue</li> <li>• Delayed onset of action (approx. 2 - 4 weeks), so limited use in patients with short prognosis.</li> <li>• Duration of action is months.</li> <li>• If patient has a longer prognosis but need rapid symptomatic benefit, can consider starting corticosteroid and progestogen simultaneously and tailing off steroids after 3 - 4 weeks as the progestogen starts to have effect.</li> </ul>
<b>Prokinetic agents</b>	E.g. Metoclopramide 10mg tds <ul style="list-style-type: none"> <li>• Pre-meals.</li> </ul> Helpful in early satiety and chronic nausea related to gastroparesis

## Nausea and Vomiting:

- Nausea and vomiting are common symptoms in patients with cancer, affecting between 40-70% of patients.

### Definitions

- **Nausea** – feeling the need to vomit, often accompanied by autonomic symptoms such as pallor, cold sweat, salivation and tachycardia.
- **Retching** – laboured, spasmodic movement of the diaphragm and abdominal muscles, often culminating in vomiting.
- **Vomiting** – the forceful expulsion of gastric contents through the mouth. Involves co-ordinated activity of diaphragm, GI tract and abdominal muscles, mediated via somatic nerves.

### Diagnosis:

- It is essential to determine likely cause from the assessment and history, as appropriate treatment will depend on this.
- History:
  - Pattern of nausea and vomiting
  - Onset
  - Frequency
  - Severity
  - Volume
  - Content
- Site of primary and metastases
- Ongoing/previous treatment e.g. surgery, radiotherapy
- Potential reversible causes

### Examination:

- Abdominal palpation: e.g. obstruction
- Rectal examination: e.g. constipation
- Fundoscopy: e.g. papilloedema
- Oropharynx: e.g. candida

### Investigations:

- Consider: FBC/ U&E/ Calcium  
MSU  
Abdominal X ray

### Causes:

- See table overleaf

#### Specific Causes of Nausea & Vomiting

<b>Causes</b>	<b>Examples</b>	<b>Presentation</b>
Drugs and metabolic disturbances	Drugs: <ul style="list-style-type: none"><li>• Opioids</li><li>• NSAIDs</li><li>• Antibiotics</li><li>• Chemotherapy</li></ul> Metabolic: <ul style="list-style-type: none"><li>• Hypercalcaemia</li><li>• Renal failure</li><li>• Liver failure</li></ul> Toxins: <ul style="list-style-type: none"><li>• Tumour toxins</li><li>• Infections</li></ul>	<ul style="list-style-type: none"><li>• Nausea &amp; retching prominent</li><li>• Continuous symptoms</li><li>• No relief from vomiting</li><li>• History of recent change in medications</li><li>• Specific symptoms / signs of underlying cause</li></ul>

<p>Gastric</p> <ul style="list-style-type: none"> <li>• Motility</li> <li>• Irritation</li> </ul>	<p>Motility</p> <ul style="list-style-type: none"> <li>• Upper abdominal tumour</li> <li>• Hepatomegaly</li> <li>• Ascites</li> </ul> <p>Irritation</p> <ul style="list-style-type: none"> <li>• NSAIDS</li> <li>• Steroids</li> </ul>	<p>Motility</p> <ul style="list-style-type: none"> <li>• Bloating &amp;/or vomiting food</li> <li>• Fullness &amp; discomfort</li> <li>• Dyspepsia</li> </ul> <p>Irritation</p> <ul style="list-style-type: none"> <li>• Epigastric discomfort</li> <li>• Dyspepsia</li> <li>• Resistant to antiemetics</li> <li>• Drug history</li> </ul>
<p>Stimulation of vomiting centre</p>	<p>Raised intracranial pressure</p> <ul style="list-style-type: none"> <li>• Cerebral primary</li> <li>• Cerebral metastases</li> </ul> <p>Cranial radiotherapy</p>	<ul style="list-style-type: none"> <li>• Headache</li> <li>• Sedation</li> <li>• Confusion</li> <li>• Neurological signs</li> </ul>
<p>Intestinal obstruction</p>	<ul style="list-style-type: none"> <li>• Tumour</li> <li>• Adhesions</li> <li>• Constipation</li> <li>• Blood in stomach</li> </ul>	<ul style="list-style-type: none"> <li>• Bowels not open &amp; not passing flatus</li> <li>• Abdominal distension</li> <li>• Colic</li> <li>• Vomiting often relieves nausea</li> <li>• Faeculent vomiting</li> <li>• Large volume vomits</li> </ul>
<p>Psychological and emotional</p>	<ul style="list-style-type: none"> <li>• Fear</li> <li>• Anxiety</li> <li>• Depression</li> <li>• Pain</li> </ul>	<ul style="list-style-type: none"> <li>• Distress exacerbates existing symptoms</li> <li>• Rarely sole cause of nausea and vomiting</li> </ul>
<p>Pharyngeal stimulation</p>	<ul style="list-style-type: none"> <li>• Cough</li> <li>• Candida</li> </ul>	<ul style="list-style-type: none"> <li>• Coughing results in muscle spasm and vomiting</li> <li>• Sputum or infection in pharynx can trigger vomiting reflex</li> </ul>

Management:

- Identify and treat reversible causes:
  - Candidiasis – antifungals.
  - Constipation – laxatives.
  - Cough – anti-tussives.
  - Gastric irritation – H2 antagonist or proton pump inhibitor, stop NSAIDS.
  - Hypercalcaemia – hydration and bisphosphonates.
  - Infection – antibiotics.
  
- Non-pharmacological measures:
  - Calm, reassuring environment.
  - Avoid sight and smell of food if this precipitates nausea.
  - Small snacks e.g. few mouthfuls and not big meals.
  - Complementary therapies e.g. acupuncture.
  
- Pharmacological measures:

Antiemetics:	<ul style="list-style-type: none"><li>▪ Choose on basis of most likely cause of nausea and vomiting (see table below).</li><li>▪ Give regularly rather than only “as required”.</li><li>▪ Use oral route for prophylaxis, use parenteral route if there is established vomiting. Give subcutaneously either as stat doses or by continuous subcutaneous infusion via a syringe pump.</li><li>▪ Switch back to oral when symptoms controlled for 72 hours and ensure oral antiemetics are restarted before syringe pump is stopped.</li><li>▪ Rectal route can also be used</li><li>▪ Reassess at regular intervals.</li><li>▪ If first choice drug only partially successful or unsuccessful after 24-48h either increase dose or consider changing the administration route (e.g. oral to subcutaneous) or try second line specific antiemetic.</li><li>▪ A combination of antiemetics with different actions may be needed in up to 25% of cases especially where there are multi-factorial causes.</li><li>▪ Do not use more than one drug from the same class</li><li>▪ Be aware of potential prolongation of QT interval with some antiemetics (domperidone, metoclopramide, haloperidol)</li></ul>
Dexamethasone	<ul style="list-style-type: none"><li>▪ May be added in to enhance antiemetic effects of other drugs.</li></ul>

If still have treatment failure consider using a broad-spectrum second line agent such as levomepromazine as a substitute and seek advice from the specialist palliative care team.

Medications used in the treatment of nausea & vomiting

DRUG	DOSE/ROUTE	INDICATION/USE	MECHANISM /RECEPTORS	SITE OF ACTION
CYCLIZINE	PO/SC/IV: 50mg tds CSCI: 100 - 150mg/24hr	Raised intracranial pressure Bowel obstruction – <b>first line</b>	Antihistamine & anticholinergic	Vomiting centre
HYOSCINE HYDROBROMIDE	SC: 0.4mg tds CSCI: 1.2 - 2.4mg/24hr	Bowel obstruction – <b>second line</b>	Anticholinergic	
LEVOMEPRMAZINE	PO/SC: 6.25 - 25mg bd CSCI 12.5 - 75mg/24hr	Broad spectrum, unknown cause or treatment failure – <b>second line</b>	5-HT <sub>2</sub> , dopamine, acetylcholine & histamine antagonist	
BENZODIAZEPINE e.g. Lorazepam	PO: 1-2mg stat	Fear and psychological stimuli e.g. anticipatory nausea – <b>first line</b>	Anxiolytic	Cerebral cortex
CORTICOSTEROID e.g. Dexamethasone	PO/SC: 4 - 16mg om CSCI: 4-16mg/24hr	Raised intracranial pressure Bowel obstruction - <b>second line</b>	Anti-inflammatory	Cerebral cortex & GI tract
HALOPERIDOL	PO/SC: 1.5 - 5mg on CSCI: 3 - 5mg/24hr	Opioid-induced vomiting. Biochemical causes e.g. hypercalcaemia, uraemia - <b>first line</b>	Dopamine antagonist	Chemoreceptor trigger zone
METOCLOPRAMIDE	PO/SC: 10 - 30mg tds/qds CSCI: 30 - 100mg/24hr	Gastric stasis, squashed stomach and oesophageal reflux – <b>first line</b> Opioid-induced vomiting Biochemical causes – <b>second line</b>	Dopamine, 5-HT <sub>3</sub> antagonist, 5-HT <sub>4</sub> agonist, prokinetic	Chemoreceptor trigger zone & GI tract
DOMPERIDONE	PO: 10 - 20mg tds/qds PR: 30 - 60mg tds/qds	Gastric stasis, squashed stomach and oesophageal reflux – <b>first line</b> Opioid-induced vomiting Biochemical causes – <b>second line</b>	Dopamine antagonist, prokinetic	
ONDANSETRON	PO/IV/SC: 8mg bd CSCI: 8 - 24mg/24hr	Chemotherapy and radiotherapy – <b>first line</b>	5-HT <sub>3</sub> antagonist	
GRANISETRON	PO/IV: 1mg bd	Chemotherapy and radiotherapy – <b>first line</b>		
HYOSCINE BUTYLBROMIDE	PO/SC: 20mg tds CSCI: 60 - 120mg/24hr	Bowel obstruction – <b>second line</b>	Antisecretory, anticholinergic	GI tract
OCTREOTIDE	SC: 100 - 200mcg tds CSCI: 300 - 600mcg/24hr	Bowel obstruction, Intractable vomiting – <b>second line</b>	Antisecretory, somatostatin analogue	

**PO = oral, IV = intravenous, SC = subcutaneous, CSCI = continuous subcutaneous infusion, GI = gastrointestinal**

## Constipation

- Defined as the passage of small hard faeces infrequently and with difficulty.
- The aim of management is to achieve easy and comfortable defecation.

### Causes:

- Medication: e.g. opioids, tricyclic antidepressants, ondansetron
- Concurrent disease
- Immobility/inactivity
- Dehydration
- Hypercalcaemia

### Diagnosis:

- History:
  - When were bowels last open?
  - Characteristics of last stool? – loose, formed, pellets?
  - Pain on defecation?
  - Straining required, hard stool, rectal obstruction?
  - What is stool frequency now?
  - Is the urge to defecate absent? (? colonic inertia)
  - Is there blood/mucus in the stool? (tumour? Haemorrhoids?)
  - Other signs – nausea? bloating? flatulence? abdominal pain? halitosis? faecal soiling?
- Examination
  - Abdominal examination
  - Rectal examination – empty rectum does not exclude constipation, may be high up impaction.
- Investigations
  - Abdominal X ray (for differential diagnosis of either constipation or obstruction).
  - Bloods – calcium level

### Management:

- Prevention is better than cure

Non-pharmacological:	<ul style="list-style-type: none"><li>• If possible, increase fluid and fibre</li><li>• Encourage mobility</li><li>• Assess ability to get to/ use toilet (may need raised toilet seat/commode)</li></ul>
Pharmacological:	<ul style="list-style-type: none"><li>• Commence prophylactic laxatives when starting weak or strong opioids</li><li>• Use oral laxatives in preference to rectal interventions.</li><li>• Ask about patients preference on formulation of laxatives</li><li>• Use a combination of stimulant laxative with a softener/osmotic laxative. E.g. senna 1 - 4 tabs ON and sodium docusate 200mg BD – TDS. For patients that have difficulty swallowing tablets alternatives are senna liquid 5 - 20ml ON, magnesium hydroxide liquid 10ml ON. Sodium docusate liquid should not be prescribed due to it being unpalatable.</li><li>• Combination preparations such as co-danthramer and co-dranthrusate (capsules and liquid) can be used as alternatives. Note: Dantron stains the urine red and can cause perianal irritation therefore do not use in patients with faecal or urinary incontinence. If co-danthramer rash develops in perianal area then stop and replace with a faecal softener and stimulant laxative.</li><li>• Titrate components to achieve optimum stool frequency and consistency.</li><li>• If patient is in bowel obstruction stimulant laxatives must be stopped but consider continuing softener laxatives. For further details see section on intestinal obstruction.</li><li>• Avoid lactulose. It can cause bloating and wind</li><li>• If diarrhoea occurs as a result of laxative therapy, stop for 24 hours then recommence at a reduced dose</li><li>• Bulk forming agents e.g. Fybogel are not effective in preventing opioid-induced constipation</li><li>• Methylnaltrexone an option for opioid induced constipation but should only be used under the advice of the specialist palliative care team.</li></ul>

Type of constipation	Oral management	Rectal management	Comments
Rectum full, faeces soft	<b>First line:</b> <ul style="list-style-type: none"> <li>Senna 2 - 4 tabs or 10 – 20ml ON</li> <li>Bisacodyl 5 - 20mg ON</li> </ul> <b>Second line:</b> <ul style="list-style-type: none"> <li>Co-danthramer 1 - 3 caps or 5 – 10ml ON</li> <li>Co-danthramer forte 1-3 caps or 5 – 10ml ON</li> </ul>	<ul style="list-style-type: none"> <li>Bisacodyl 10mg supps</li> </ul>	Dantron stains urine red and can cause perianal irritation. Do not use in patients with faecal or urinary incontinence
Rectum full, faeces hard	<ul style="list-style-type: none"> <li>Docusate sodium up to 200mg TDS or magnesium hydroxide liquid 10ml ON or movicol/laxido 1 – 8 sachets daily in patients requiring a liquid.</li> </ul> <p>Docusate sodium liquid should not be prescribed as it is unpalatable.</p>	<b>First line:</b> <ul style="list-style-type: none"> <li>Glycerine suppositories</li> </ul> <b>Second line:</b> <ul style="list-style-type: none"> <li>Arachis oil enema</li> <li>Phosphate enema</li> </ul>	Arachis oil contains peanut oil - Do not use in patients with peanut allergy. Docusate sodium is only licensed up to 500mg daily
Colon full, with colicky abdominal pain	<ul style="list-style-type: none"> <li>Docusate sodium up to 200mg TDS (licensed up to 500mg daily) or magnesium hydroxide liquid 10ml ON or movicol/laxido 1 – 8 sachets daily in patients requiring a liquid.</li> </ul> <p>Docusate sodium liquid should not be prescribed as it is unpalatable.</p>	<ul style="list-style-type: none"> <li>Arachis oil enema</li> </ul>	Arachis oil contains peanut oil - Do not use in patients with peanut allergy Administer arachis oil enema overnight, consider antispasmodics
Colon full, without colicky abdominal pain	<ul style="list-style-type: none"> <li>Co-danthramer 1 - 3 caps or 5 – 10ml ON</li> <li>Co-danthramer forte 1-3 caps or 5 – 10ml ON</li> <li>Movicol/laxido 1 – 8 sachets daily</li> </ul>	<ul style="list-style-type: none"> <li>Bisacodyl 10mg supps</li> </ul>	Consider phosphate enema alone or arachis oil enema overnight then phosphate enema the next morning
Impaction	<ul style="list-style-type: none"> <li>Movicol/laxido 8 sachets - given as 2 sachets every 2 hours for four doses. Repeat daily for up to 3 days until effective.</li> </ul>	<ul style="list-style-type: none"> <li>Regular enema regimen.</li> </ul> <p>At night give high arachis oil enema delivered by soft suction type catheter inserted 10-15 cm into rectum followed by a phosphate enema the following morning</p>	Manual evacuations (if indicated) MUST be performed by medical staff under sedative cover – diazepam, midazolam.

In normal practice only two laxatives should be used. If the addition of laxido is required consideration should be given to stopping sodium docusate.

## Diarrhoea

- Defined as an increase in the fluidity of faeces and possibly the frequency of bowel opening.
- It is debilitating for patients with advanced disease and less common than constipation.

### Causes:

- Constipation with overflow
- Drug induced diarrhoea (antibiotics, NSAIDs, laxative use, chemotherapy)
- Infection (e.g. C. difficile)
- Radiotherapy to pelvic /abdomen
- Pancreatic insufficiency – characterised by bulky offensive stools that float
- Subacute intestinal obstruction
- Disease related

### Diagnosis:

- Investigations
  - Stool culture
  - U & E's
  - Consider abdominal x-ray if cause uncertain
- Examination
  - Palpate abdomen
  - Stool colour
  - PR examination to exclude overflow secondary to rectal loading with faeces
  - Exclude reversible causes
  - Patient hydration status – is it appropriate to hydrate orally/parenterally

### Management:

- Treat reversible causes. If patient is receiving chemotherapy stop chemotherapy and contact chemotherapy unit or out of hours contact number for urgent advice and review of patient
- Treat dehydration and encourage fluids as appropriate. Consider using electrolyte replacement therapy.
- If constipation with overflow and infective diarrhoea have been excluded prescribe loperamide 4mg initially then 2mg after each stool up to a maximum of 16mg daily
- Consider adding in codeine 30 – 60 mg qds if loperamide alone ineffective.
- On specialist advice start octreotide to reduce high output diarrhoea 300mcg - 1000mcg/24hrs by continuous subcutaneous infusion or 100 - 300mcg tds by SC injection. For patients requiring medium to long term octreotide consider using a depot preparation of octreotide or lanreotide following discussions regarding funding with CCG.
- If patient presents with steatorrhea (fat malabsorption) prescribe pancreatic enzymes to be taken immediately before food and not with hot drinks. (E.g. creon 10,000units 1 – 2 capsules with meals and fatty drinks/snacks).
- For patients on opioids - consider converting from sustained release tablets to an immediate release preparation to improve absorption

## Intestinal obstruction

### Causes:

- Most common with primary tumours of ovary and colon
- May occur with almost any primary tumour, including carcinoma of breast
- May be due to:
  - Tumour mass within lumen
  - Tumour on peritoneal surface causing compression or adhesions
  - Infiltration within muscle layers preventing normal peristalsis
  - Damage to autonomic nerve plexuses by tumour infiltration
  - Adhesions, radiation fibrosis, metabolic disturbance, constipation, septicaemia

### Diagnosis:

- Ascertain the likely site of obstruction based on clinical history and examination i.e. gastroduodenal junction, small bowel or large bowel.
- The following symptoms may be present:
  - Vomiting - often with little preceding nausea
  - Constipation, although some flatus may still be passed
  - Abdominal distension and discomfort
  - Bowel sounds may be hyperactive or scanty
  - Colic may or may not be a feature
- Are there likely to be multiple sites of obstruction? E.g. is there history of previous abdominal irradiation or surgery.
- Is the patient fit for surgery? Remember that bowel obstruction may not be related to the patient's known cancer and that a surgical opinion should be considered.

### Management:

General principles for patients not appropriate for surgery	<ul style="list-style-type: none"> <li>• This will depend on site of obstruction, patient's wishes and general condition</li> <li>• Consider surgery if the patient is fit enough</li> <li>• If surgical intervention is inappropriate, then symptomatic management is the mainstay of treatment</li> <li>• Drugs should be given parentally if possible. A syringe pump is an acceptable way of delivering a combination of drugs for most patients with bowel obstruction.</li> <li>• Avoid NG tubes where possible – these are disliked by many patients. Some patients often prefer to vomit several times a day rather than have an NG tube inserted.</li> <li>• Allow the patient to eat and drink freely as tolerated.</li> <li>• IV fluids often not necessary but should be considered in those patients who are at risk of rapid dehydration e.g. in gastric outflow and high small bowel obstruction.</li> <li>• Avoid 'routine' blood tests – they are not necessary in the last few days of life or if the result does not alter clinical management.</li> <li>• Simple mouth care is important.</li> <li>• Stop all stimulant laxatives (co-danthramer, senna) and gastro-intestinal motility stimulants such as metoclopramide and domperidone.</li> </ul>
Nausea	<ul style="list-style-type: none"> <li>• Metoclopramide and domperidone can potentially cause abdominal cramps in patients with complete obstruction because of their prokinetic actions. However they can be useful in patients with partial obstruction (use metoclopramide 30-90mg over 24hrs in syringe pump)</li> <li>• Use centrally acting anti-emetics such as:           <ul style="list-style-type: none"> <li>▪ Haloperidol 3 - 5mg/24 hrs via continuous subcutaneous infusion</li> <li>▪ If fails, add cyclizine 100 – 150 mg/24 hours via continuous subcutaneous infusion</li> <li>▪ If fails, stop the above and switch to levomepromazine 6.25 – 25mg/24hrs via continuous subcutaneous infusion</li> </ul> </li> </ul>

Vomiting:	<ul style="list-style-type: none"> <li>• Drugs that are useful in reducing the volume of gastrointestinal secretions and therefore the frequency and volume of vomits are: <ul style="list-style-type: none"> <li>▪ Octreotide – start at 300-600mcg/24 hrs via continuous subcutaneous infusion, this can be increased to 1000mcg over 24 hours if necessary.</li> <li>▪ Once symptoms stable reduce to lower effective dose.</li> <li>▪ For patients requiring medium to long term octreotide consider using a depot preparation of octreotide or lanreotide as discussion regarding funding with the CCG.</li> <li>▪ Hyoscine butylbromide (Buscopan) 60 - 120mg/24 hrs via continuous subcutaneous infusion</li> <li>▪ In gastric outflow and small bowel obstruction both drugs may be needed to reduce vomiting to an acceptable level.</li> </ul> </li> <li>• Where drug treatment is unsuccessful and patients have a prognosis of at least weeks, then consider possible venting gastrostomy.</li> </ul>
Pain:	<ul style="list-style-type: none"> <li>• If patient has colic, avoid prokinetic and stimulant drugs and bulking laxatives, instead use: <ul style="list-style-type: none"> <li>• Hyoscine butylbromide (Buscopan). Give stat does of 20mg SC then give 60 - 120mg/24hrs</li> </ul> </li> <li>• Opioids: <ul style="list-style-type: none"> <li>• if the patient is already taking opioids then remember to convert to the appropriate dose of morphine/ oxycodone as appropriate (see opioid conversion chart).</li> <li>• If patient is using fentanyl patches these may be continued rather than switching to morphine.</li> <li>• If patient is opioid naïve it may be necessary to add morphine to the syringe pump to aid pain control. Start at a low dose (10mg/24 hrs) and increase further if appropriate via syringe pump.</li> </ul> </li> <li>• Diclofenac: <ul style="list-style-type: none"> <li>▪ inflammatory pain e.g. if peritonitis has developed.</li> <li>▪ Dose 75 - 150mg/24hrs via continuous subcutaneous infusion.</li> <li>▪ NB: Diclofenac does not mix with other drugs and needs a separate syringe pump. It should be diluted with sodium chloride 0.9%.</li> </ul> </li> </ul>
Laxatives:	<ul style="list-style-type: none"> <li>• Use 'softener' laxative such as docusate sodium 200mg tds.</li> <li>• It may be necessary to use suppositories and/or enemas if these are tolerated by the patient.</li> <li>• Stop stimulant laxatives</li> </ul>
Steroids:	<ul style="list-style-type: none"> <li>• Consider 5 day trial Dexamethasone 8mg SC or by CSCI</li> </ul>

## **Other Gastro-intestinal symptoms:**

### **Fistulae:**

#### **Management:**

- High output fistulae:
  - May respond to octreotide 100mcg tds by SC injection or 300 - 600mcg/24 hrs by continuous subcutaneous infusion.
  - For patients requiring medium to long term octreotide consider using a depot preparation of octreotide or lanreotide after discussion regarding funding with the CCG.
- Large bowel fistulae:
  - Consider using anti-diarrhoeal drugs to constipate the patient.

Remember skin care is important - need to prescribe barrier cream.

### **Malignant ascites:**

#### **Causes:**

- Malignant ascites:
  - 50% of cases are associated with ovarian malignancies;
  - 20% with unknown primary tumours;
  - Remainder with gastric, pancreatic and colon cancers.

However, ascites may be seen with extra-abdominal primary sites e.g. breast, bronchus. This may be due to:

- Peritoneal metastases
  - Hypoalbuminaemia
  - Secondary sodium retention
  - Venous compression or thrombus
- Non-malignant ascites:
    - Cardiac, liver and renal failure – account for 90% of cases

#### **Diagnosis:**

- Clinical assessment: progressive distension, shifting dullness, fluid thrill
- Abdominal ultrasound (with marking for drainage if appropriate)
- Exclude tumour masses, organomegaly, distended bladder, intestinal obstruction

#### **Management:**

- Management options are similar for both malignant and non malignant ascites
- Treatment is aimed at symptom control. Consider:
  - Diuretics work over several days. Better response in ascites due to liver metastases
    - Spironolactone 100 - 500mg od
    - If inadequate response add in loop diuretic:
      - Furosemide 40 - 80mg od or Bumetanide 1 - 2mg od
  - Paracentesis
  - Peritoneovenous shunt :
    - for those relatively fit patients requiring repeat paracenteses
  - Anti-cancer therapy

## **MOUTH CARE**

Oral problems are a common feature of advanced disease. Complications frequently develop in the mouth either as a direct result of malignancy or as an effect of treatment.

### **Causes/ Risk Factors:**

- All advanced disease/debilitation
- Poor oral hygiene
- Chemotherapy
- Radiotherapy - local treatment to the head & neck
- Local tumours
- O<sub>2</sub> Therapy
- Mouth breathing
- Anorexia/reduced fluid intake/dehydration
- Nausea & vomiting
- Medication (anti-emetics/opioids/diuretics/steroids/antibiotics)

### **Management:**

Prevention:	<ul style="list-style-type: none"> <li>• Regular mouthcare can prevent oral problems and promote comfort</li> <li>• Preventative measures should include:             <ul style="list-style-type: none"> <li>▪ High quality oral status assessment and education in order to anticipate problems enhancing effective management of mouth problems.</li> <li>▪ Tooth brushing is the most effective hygiene care, however Chlorhexidine 0.2% mouthwash 10ml BD can help with plaque control and can be used to control infections when brushing teeth is not possible.</li> <li>▪ People with their own teeth:                 <ul style="list-style-type: none"> <li>– After food brush teeth twice a day with toothpaste, rinsing well with water</li> </ul> </li> <li>▪ People without their own teeth:                 <ul style="list-style-type: none"> <li>– Remove dentures prior to cleaning the mouth/using mouthwash</li> <li>– Use a very soft (babies) toothbrush or foam swab for cleaning the mouth.</li> <li>– If tooth brush cannot be tolerated prescribe antiseptic mouthwash twice a day, after food. This can be diluted with equal parts of warm water but all of the solution must be used.</li> <li>– Instruct the patient to clean their dentures by brushing before soaking in denture solution for 30 minutes, brush again with water. Remove dentures at night, and soak in water to prevent them from cracking or warping</li> </ul> </li> </ul> </li> </ul>
Saliva Promotion/replacement:	<ul style="list-style-type: none"> <li>• Use:             <ul style="list-style-type: none"> <li>▪ Salivary stimulants e.g. sugar free chewing gum</li> <li>▪ Saliva substitutes e.g. Oral balance gel four times day</li> <li>▪ Foods that encourage chewing</li> </ul> </li> </ul>
Infection:	<ul style="list-style-type: none"> <li>• Mouth infections are common in advanced disease.</li> <li>• Consider mouth swabbing to assist in diagnosis and prevent unnecessary medication.</li> <li>• Measures to promote saliva should be considered due to healing properties of saliva.             <ul style="list-style-type: none"> <li>▪ Corsodyl mouthwash (chlorhexidine 0.2%) 10ml BD or Oraldene (hexetidine 0.1%) 10ml twice a day, after food. This can be diluted with equal parts of warm water – all solution must be used.</li> <li>▪ Instruct patients to swish the mouthwash around their mouth and spit it out. If possible, avoid eating or drinking for 20 minutes after using the mouthwash</li> </ul> </li> </ul> <p>NB. Chlorhexidine solutions contain alcohol and should be avoided in patients receiving head and neck radiotherapy. Alcohol can cause rebound dryness. Sodium chloride 0.9% solution or water is suggested for patients who are undergoing head and neck radiotherapy.</p>

Infection	Candida:	<ul style="list-style-type: none"> <li>• Characterised by white adherent patches, angular cheilitis, redness, soreness of mouth and throat</li> <li>• Dentures must be removed each time, and cleaned/ sterilised e.g. chlorhexidine prior to replacing.</li> <li>• Treatment: <ul style="list-style-type: none"> <li>▪ Nystatin (100,000units/ml) 5 ml qds 7 days. <ul style="list-style-type: none"> <li>○ Low incidence of resistance, but is time and labour intensive in care situations and has compliance issues.</li> <li>○ There is no value using this prophylactically.</li> <li>○ If nystatin is used in conjunction with chlorhexidine, nystatin should be used at least 1 hour <b>after</b> the chlorhexidine used.</li> </ul> </li> <li>▪ Fluconazole po 50 mg – 100mg od for 7 – 14 days.</li> <li>▪ Itraconazole liquid 100mg od if resistance to fluconazole.</li> </ul> </li> </ul> <p><b>Please note - due to the increasing resistance of azole antifungal agents careful consideration prior to use is advocated.</b></p>
	Viral (Herpes Zoster or Simplex):	<ul style="list-style-type: none"> <li>• Localised to lips: <ul style="list-style-type: none"> <li>▪ topical aciclovir cream five times a day for five to ten days.</li> </ul> </li> <li>• Mouth ulcers: <ul style="list-style-type: none"> <li>▪ Aciclovir tablets 200mg five times a day for seven days, increased to 400mg five times a day in immunosuppressed patients</li> </ul> </li> </ul>
Aphthous ulcers:	<ul style="list-style-type: none"> <li>• Consider steroids topically – hydrocortisone lozenge (Corlan pellet) 2.5mg qds for 5 days. Lozenge allowed to dissolve at the site of the ulcer</li> <li>• Triamcinolone 0.1% in orabase is available from Mawdsely Unlicensed. Apply to ulcers QDS</li> </ul>	
Malignant Ulcers:	<ul style="list-style-type: none"> <li>• Characterised by 'foul odour' suggesting anaerobic infection.</li> <li>• The intention is to assist in odour management.</li> <li>• Treatment: <ul style="list-style-type: none"> <li>▪ Oral metronidazole 400mg TDS or 1g PR BD</li> <li>▪ Topical metronidazole gel 1% can be used if the patient is unable to tolerate systemic treatment.</li> <li>▪ Intention to assist in odour management.</li> </ul> </li> </ul>	
Dirty/Coated Mouth:	<ul style="list-style-type: none"> <li>• The value of mouth hygiene cannot be overstated.</li> <li>• The use of toothbrush/pink foam swabs to clean teeth, tongue and gingival mucosa is the most effective tool.</li> <li>• Mouth swabs containing glycerine should not be used as glycerine can cause a rebound drying effect.</li> <li>• Swabs and any product containing lemon or of a citrus nature will make oral pH more acidic and therefore should not be used.</li> <li>• Saliva is the most effective way of maintaining a clean and healthy mouth therefore prescribe: <ul style="list-style-type: none"> <li>▪ Oral balance gel four times a day</li> </ul> </li> </ul>	
Dry Mouth:	<ul style="list-style-type: none"> <li>• This can be as a result of treatment and medication, and directly related to the effects of the disease.</li> <li>• Identify the cause and treat where possible e.g. hypercalcaemia, review drug management exacerbating symptom</li> <li>• Treatment: <ul style="list-style-type: none"> <li>▪ Sip water/rinse mouth with water frequently – moisture will promote comfort</li> <li>▪ Use sprays of water/ ice chips to refresh the mouth.</li> <li>▪ Chew sugar free chewing gum – consider using prophylactically when prescribing drugs that will dry mouth e.g. opiates.</li> <li>▪ Oral balance gel four times a day - If patient wears dentures, apply the gel to them before wearing. This can be used regularly but is especially useful prior to sleeping.</li> <li>▪ Foods that encourage chewing</li> <li>▪ Avoid alcohol, as this will increase mouth dryness</li> <li>▪ Pilocarpine can be used for xerostomia related to radiotherapy/head and neck cancer induced dry mouth. <ul style="list-style-type: none"> <li>○ Pilocarpine 5mgs TDS. If there is no improvement after 2 days stop.</li> </ul> </li> </ul> </li> </ul>	

Pain:	<ul style="list-style-type: none"> <li>• Identify cause of pain and manage appropriately.</li> <li>• Where symptoms are related to <b>head and neck cancer</b>, contact CHUFT Clinical Nurse Specialist for Head and Neck Cancers for further advice</li> <li>• Treatment: <ul style="list-style-type: none"> <li>▪ Local analgesics are of use but have relatively short duration.</li> <li>▪ Benzydamine spray or mouthwash (Difflam): up to 2 hourly (caution as solution is alcohol based).</li> <li>▪ Choline Salicylate (Bonjela): apply 1-2 cm topically to affected areas 3 hourly to maximum six times a day</li> <li>▪ Morphine sulfate mouthwash 5mg/10ml can be made by CHUFT NSPS, 10-20ml qds as a mouthwash and then either spat out or swallowed. If unavailable Sevredol tablets can be dispersed in water and use as a mouthwash 5-10mg qds then either spat out or swallowed. These are preferable to Oramorph as they do not contain alcohol</li> <li>▪ Triamcinolone 0.1% in orabase is available from Mawdsely Unlicensed. Apply to ulcers QDS</li> <li>▪ Oral Balance gel four times a day. Mechanical protection is of value in adhering to ulcer surface, but difficult to apply.</li> <li>▪ Carmellose paste (Orabase) apply before food</li> <li>▪ Carbenoxolone gel – powder sprinkled onto ulcer</li> <li>▪ Sucralfate liquid 1g qds as mouthwash and then spat out or swallowed (used in inflammation/ mucositis).</li> <li>▪ Cocaine mouthwash 2% is available for specialist use</li> </ul> </li> <li>• If pain persists manage systemically.</li> <li>• The patient will require frequent reassessment depending on the status of the mouth. See the chapter on pain control for further information</li> </ul>
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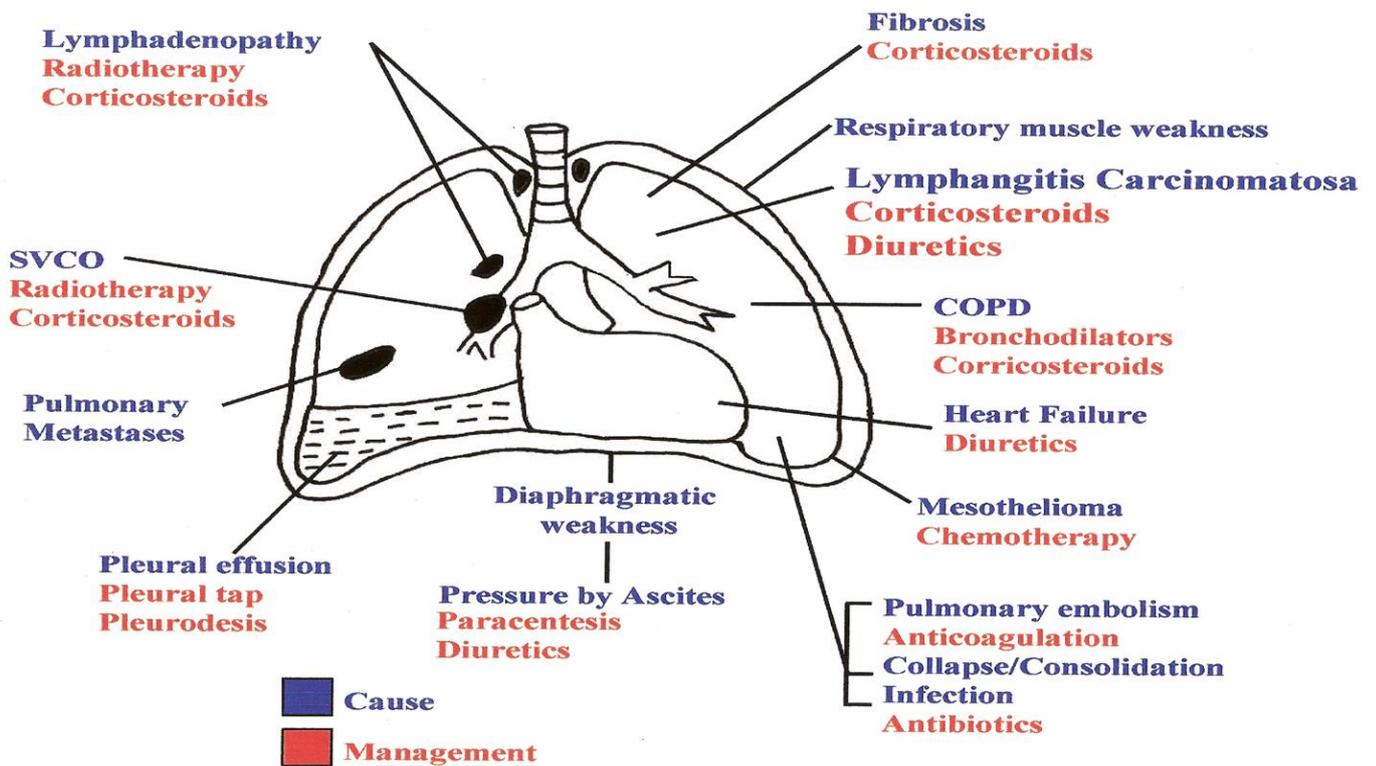
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## RESPIRATORY SYMPTOMS

### Breathlessness:

- The pathophysiology of breathlessness is a complex process and one which is not fully understood.
- Normal breathing is maintained by regular rhythmical activity in the respiratory centre in the brain stem. This is stimulated by mechanical stretch receptors in the airways, intercostal muscles and diaphragm, and by hypoxia and hypercapnia.
- In malignant lung disease breathlessness is usually due to distortion and stimulation of the mechanical receptors.
- Breathlessness occurs in 70% of lung cancer patients and in 50% of all patients with a cancer diagnosis. It occurs most commonly in cancers of the lung, breast, prostate, colon and rectum. It is often an alarming and distressing symptom and requires prompt and effective palliation.



### Management:

Non-Pharmacological Measures	<ul style="list-style-type: none"><li>• Help the patient to address their feelings and fears about the symptom.</li><li>• Offer reassurance and a calming presence</li><li>• Give a cool draft of air across the face e.g. using a fan</li><li>• Explain that becoming breathless in itself is not dangerous</li><li>• Relaxation techniques</li><li>• Breathing exercises/ re-training</li><li>• Complementary therapies e.g. massage, reflexology</li><li>• Advice on modifying activities of daily living</li><li>• Advice to informal carers on promoting the above measures</li><li>• Appropriate referral to members of the multi-professional team.</li></ul>
Pharmacological Measures	<ul style="list-style-type: none"><li>• Bronchodilators:<ul style="list-style-type: none"><li>▪ An element of reversible bronchoconstriction may be present. Try:<ul style="list-style-type: none"><li>○ Salbutamol 2.5mg-5mg 4 hourly via nebuliser</li><li>○ Ipratropium 250-500 micrograms 6 - 8 hourly via nebuliser</li></ul></li><li>▪ Saline may alleviate tenacious secretions via nebuliser</li></ul></li><li>• Corticosteroids:<ul style="list-style-type: none"><li>▪ reduce peri-tumour oedema and therefore may improve breathlessness due to multiple lung metastases and in lymphangitis. Try:<ul style="list-style-type: none"><li>○ Dexamethasone 4 - 8 mg po daily</li></ul></li></ul></li><li>• Opioids:<ul style="list-style-type: none"><li>▪ Morphine reduces inappropriate and excessive respiratory drive and reduces the ventilatory response to hypoxia and hypercapnia.</li><li>▪ By slowing the respiratory rate, breathing becomes more efficient and reduces the sensation of breathlessness. Try:<ul style="list-style-type: none"><li>○ Morphine sulfate liquid 2.5mg po prn and titrate as for pain</li><li>○ For patients already on regular opioids a dose of the 4 hourly equivalent should be used.</li><li>○ Buprenorphine patches can be used – contact specialist palliative care for advice and further information</li><li>○ Nebulised opioids - but controlled trials suggest they are no more effective than nebulised saline or systemically administered opioids.</li></ul></li></ul></li><li>• Benzodiazepines:<ul style="list-style-type: none"><li>▪ Useful where there is an element of anxiety or panic in a patient who is breathless. Can be used effectively with opioids. Try:<ul style="list-style-type: none"><li>○ Lorazepam 0.5mg- 2mg prn</li><li>○ Diazepam 2-5mg bd-tds +/- prn</li><li>○ Midazolam 2.5-10mg SC prn</li></ul></li></ul></li></ul>

### Oxygen Therapy:

- Oxygen may help dyspnoea in patients who are hypoxic either at rest or on exertion. If oxygen saturations are measured, a trial of oxygen can be given to patients with saturations below 90%. If saturations are above 90% a beneficial effect is less likely but might still lead to a subjective improvement in selected patients.
- Severe COPD patients who have chronic hypoxia should not be given more than 28% oxygen. Blood gas analysis will identify patients who retain CO<sub>2</sub>.
- Injudicious use of oxygen can lead to CO<sub>2</sub> retention in COPD patients, dry airways, pressure sores from nasal cannulae and masks, restricted mobility and psychological dependency.
- Oxygen dries the mucous membranes and humidification should be given if oxygen is required for more than 30 mins at a time. E45 cream can be applied to the nasal area to prevent dryness.

- Oxygen Concentrations:
  - Nasal Cannulae      1L/min                      24%
  - 2L/min                      28%
  - Venti Mask            2L/min                      24%
  - 4L/min                      28%
  - 6L/min                      35%

*Domiciliary Oxygen:*

- Intermittent or continuous oxygen at home can be prescribed for palliation of breathlessness.
- An oxygen concentrator may be required if oxygen is needed for more than 8 hours a day unless it is only for a short time.
- A backup cylinder should be dispensed at the same time as the concentrator.

**References**

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## Cough

- Cough occurs as a result of mechanical and chemical irritation of receptors in the respiratory tract. The cough reflex involves afferent nerve transmission to the medulla and efferents to the respiratory muscles.
- Persistent episodes of coughing can be exhausting and frightening for the patient.

### Causes & management:

- Treat underlying causes where appropriate.

<b>Cause of cough</b>	<b>Management</b>
Infection	Antibiotics
Lung tumour	Radiotherapy/chemotherapy/corticosteroids
Lymphangitis	Corticosteroids
LVF / Pulmonary oedema	Diuretics
Asthma / Bronchospasm	Bronchodilators, corticosteroids
Oesophageal reflux	Metoclopramide, proton pump inhibitor
Aspiration	Refer to speech therapy to assess swallow
Pleural effusion	Drainage
Pulmonary fibrosis/pneumonitis	Corticosteroids

### Symptomatic Management:

- Productive Cough:
  - For patients still able to cough effectively:
    - Nebulised saline 0.9% 2.5-5ml qds and prn to help liquefy tenacious secretions.
    - Physiotherapy input to promote effective expectoration.
    - Bronchodilator for bronchospasm.
  - For patients who are too weak to cough and who are dying:
    - Antimuscarinic drug to dry secretions e.g. glycopyrronium 200-400mcg SC prn
    - Antitussives (see below)
- Dry Cough
  - Nebulised saline 2.5-5ml qds to reduce irritation of dry airways.

### Antitussive Drugs:

- Simple linctus 5-10ml qds
- Pholcodine 5-10ml qds
- Codeine linctus 5-10ml qds
- Morphine sulfate liquid 2.5 - 5mg 4 hourly po or morphine 5-10mg SC over 24 hours via syringe pump.

### Nebulised local anaesthetics:

- Used with some success but have not been well evaluated.
- Bupivacaine 0.25% or lidocaine 2% 5ml tds can be used
- Administer under close supervision in view of the risk of aspiration. Patients should be pre-treated with nebulised salbutamol to reduce risk of bronchospasm.

**Hiccups:**

- Hiccups are characterised by diaphragmatic spasm.
- Persistent hiccups can be a source of significant distress for patients and has the potential to interfere with normal daily activities of talking, dietary intake and sleeping.

**Causes:**

- Vagus Nerve Involvement:
  - Gastric Distension
  - Gastritis/ Oesophageal reflux
  - Hepatomegaly
  - Ascites
  - Bowel obstruction
  - Pancreatitis
- Phrenic Nerve Irritation:
  - Diaphragmatic tumour involvement
  - Mediastinal tumour
- CNS causes:
  - Brain stem lesions
  - Intracranial tumours
  - Meningitis
- Systemic causes:
  - Renal failure
  - Addison's disease
  - Alcohol

**Management:**

Non-pharmacological measures to produce pharyngeal stimulations	<ul style="list-style-type: none"><li>• Swallowing dry bread or crushed ice</li><li>• Forceful tongue traction</li></ul>
Pharmacological measures:	<ul style="list-style-type: none"><li>• Metoclopramide po 10mg tds to reduce gastric distension</li><li>• Anti-flatulent e.g. asilone 10ml qds if caused by gastric distension</li><li>• Dexamethasone po 4 - 8mg od to suppress central irritation from intracranial tumours</li><li>• Haloperidol po 1.5 - 5mg od – tds</li><li>• Baclofen po 5mg - 10mg tds to relax smooth muscle</li><li>• Chlorpromazine po 10 - 25mg tds to suppress the central hiccup reflex</li><li>• Antacid and/or PPI for gastritis induced hiccup</li></ul>



## OTHER COMMON SYMPTOMS

### Fatigue/lethargy

- Fatigue and lethargy are common symptoms in patients with malignancies.
- They have a significant impact on both physical and psychological functioning in daily life.

### Causes:

- Multi-factorial,
- Related to both cancer and its treatment.

### Diagnosis:

- Reduced activities of daily living
- Reduced exercise tolerance
- Disturbed sleep patterns

### Management:

- Exclude/treat reversible causes
  - Anaemia
  - Biochemical abnormalities
  - Depression
  - Drug side-effects

Non-pharmacological management:	<ul style="list-style-type: none"> <li>• Explanation and reassurance to patient and family</li> <li>• Exercise: aerobic exercise is helpful both during and after treatment</li> <li>• There is no evidence currently to support energy conservation strategies or nutritional input.</li> </ul>
Pharmacological management:	<ul style="list-style-type: none"> <li>• Corticosteroids (see page 27)</li> <li>• Progestogens (see page 27)</li> <li>• Psychostimulants               <ul style="list-style-type: none"> <li>○ e.g. Methylphenidate : In limited situations under specialist guidance only</li> </ul> </li> </ul>

### Urinary symptoms:

Frequency and urgency	<ul style="list-style-type: none"> <li>• Treat reversible causes e.g. infection</li> <li>• Address exacerbating factors e.g. diuretics, hypercalcaemia, hyperglycaemia</li> <li>• Consider practical approaches e.g. proximity to toilet, availability of bottle/commode</li> <li>• Consider anticholinergics:               <ul style="list-style-type: none"> <li>○ oxybutynin 2.5 - 5mg bd-qds</li> <li>○ amitriptyline 10 - 50mg nocte</li> </ul> </li> </ul>
Hesitancy	<ul style="list-style-type: none"> <li>• Address reversible causes e.g. anticholinergics, constipation</li> <li>• Consider alpha-adrenoceptor antagonists               <ul style="list-style-type: none"> <li>○ indoramin 20mg nocte - bd</li> <li>○ tamsulosin MR 0.4mg od (may cause initial hypotension)</li> </ul> </li> </ul>

### Agitation:

- Aim is to reduce agitation sufficiently for comfort and to find a treatable cause if possible.
- 42% of terminal cancer patients develop terminal agitation.

### Causes:

- Drug induced
- Full bladder
- Full rectum
- Hypoxia
- Pain/ discomfort
- Fear/ anxiety
- Alcohol withdrawal

Sedation for terminal agitation or distress should be prompt. Consider moving the patient to a visible area or do not leave unattended for those at risk of harm to themselves or others. Do not use opioids to treat agitation.

### Management:

- Must be a multi-professional approach involving family or main carers
- Accurately assess the patient
- Exclude any treatable causes
- If the patient is clearly distressed, consider for:
  - Agitation and restlessness:
    - Midazolam 2.5 - 10mg SC stat then Midazolam 10 – 60mg (can be increased to up to 120mg on specialist palliative care advice) over 24 hours via continuous subcutaneous infusion
    - If fear is the only feature for minimal sedation use lorazepam 0.5 - 1mg sublingually or orally.
  - Agitation, psychosis and hallucinations:
    - Levomepromazine 12.5 - 25mg SC stat dose or 12.5-150mg over 24 hours via continuous subcutaneous infusion. Titrate dose according to response, usual max dose 300mgs over 24 hours.
    - Haloperidol 2.5 - 5mg SC stat dose or 5 - 10mg over 24 hours via continuous subcutaneous infusion
    - Phenobarbitone under specialist advice

## WOUND CARE

- Cancer and cancer treatments produce physiological changes, which can cause problems in wound healing.
- Each malignant ulcer requires individual assessment.
- Healing may be possible, but comfort is the primary aim.
- Fungating malignant wounds results from infiltration of the skin and its supporting blood and lymph vessels. The tumours may be locally advanced, metastatic or recurrent.
- There is the potential for massive damage to the skin through a combination of proliferate growth, loss of vascularity and ulceration.
- As the tumour enlarges it causes the capillaries to rupture or become occluded, resulting in necrosis of the skin and the formation of a cutaneous wound.
- Assessment, documentation and evaluation are key components of the clinical role in any aspect of patient care. A thorough assessment ensuring that there is a plan of care appropriate for each individual patient.
- There are many factors to consider when managing the patient with a complex wound. Much depends on the position of the wound, the size, whether it is malodorous or painful, bleeding or infected and the general condition of the patient.

### Assessment:

- Relevant history
- Cause and stage of the disease
- Present treatment
- Physical limitations
- Nutritional status
- Emotional considerations
- Self perception
- Patient/carer/families knowledge of diagnosis
- Family carer influences
- Environmental influences
- Support systems available
- Local wound surface and associated symptoms

### Management:

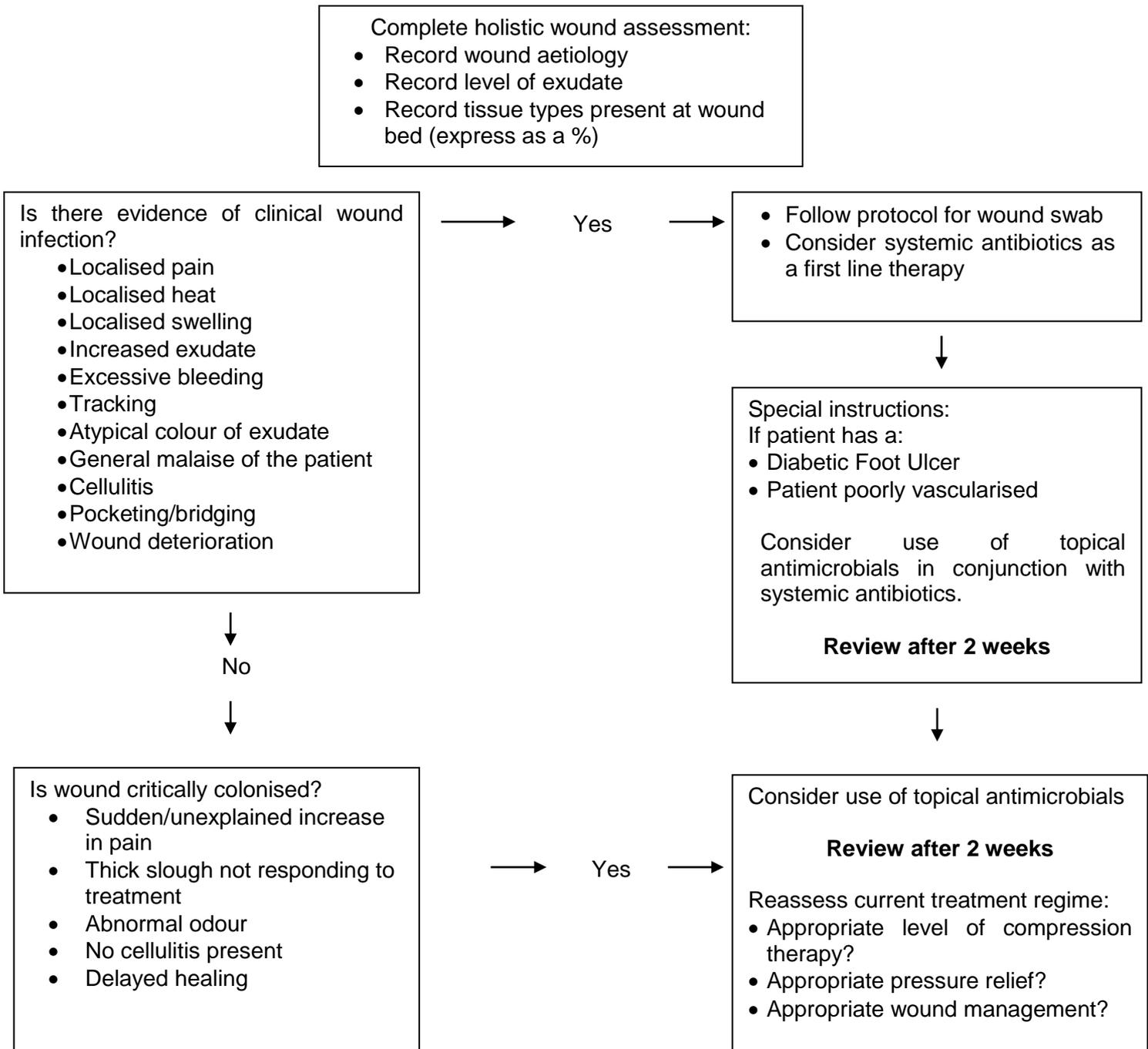
- Aims:
  - To promote comfort & improve the quality of life
  - Control the symptoms
  - As with any wound the underlying cause of the wound, the tumour in this instance, needs to be diagnosed and treated.
  - Symptom control measures, both local and systemic, together with wound dressings are the mainstays of management once curative treatment has been exhausted.
- Priorities for dressing choice:
  - Patient comfort and acceptability
  - Minimising slough, necrotic tissue & infection
  - Containing odour & exudate

<b>Dressing choice</b>	<b>Rationale</b>
Hydrocolloid, Semi-permeable film Foam, Silicone NA	Absorb low/medium exudate
Alginate, Hydrofibre, Foam	Absorb heavy exudate
Calcium alginate dressings	Haemostatic properties
Topical metronidazole, dressings containing activated charcoal	Deodorising properties
Topical metronidazole, Iodine based products	Antibacterial/antiseptic properties

Fungating wounds:

- usually present with multiple symptoms:
  - Sough/Necrosis
  - Infection
  - Exudate
  - Malodour
  - Bleeding
  - Pain (at wound site)
  - Itching/Irritation

Decision Tree for Appropriate Use of Antimicrobial Products



### *Slough/necrosis*

- Slough and necrotic tissue is essentially dead tissue that provides an environment in which anaerobic infection thrives with resulting malodour and exudates.
- The purpose of removing slough and/or necrotic tissue is to lessen the risk of infection occurring.
- Methods of debridement are limited in the management of fungating wounds.
  - **Surgical or sharp debridement** is not generally an option because of problems associated with bleeding.
  - **Enzymatic debridement** is not recommended as fungating wound are often associated with bleeding and there is a risk of absorption.
  - **Autolytic debridement** is more acceptable and less invasive. The principle is to provide a moist environment by using a product that can donate fluid and absorb excess fluid, promoting autolysis (destruction of tissue) of slough/necrotic tissue.
- Patients with extensive wounds covered in eschar may not benefit from debridement if life expectancy is short and the consequent exudate is profuse.

### *Infection:*

- Due to the chronic nature of fungating wounds, a sudden increase in the patient's wound symptoms may be the first indication of wound infection.
- A wound swab will confirm the presence of infection in the wound. Systemic antibiotics may be used in treating the infection, however, the blood supply to fungating wounds is often poor and the concentration of antibiotic at the wound site may not be sufficient to have any effect. Topical metronidazole may have a role if anaerobic infection is suspected or confirmed.

### *Exudate:*

- Exudate is probably the most common problem associated with fungating wounds. Without control of exudate interrelated problems such as leakage and soiling, peri-wound maceration and odour will not be managed.
- Dressings used to contain exudate should have minimal bulk, whilst preventing leakage and creating an acceptable cosmetic effect.
- Protection of the surrounding skin is also of vital importance to prevent breakdown and enlargement of the wound. Excessive amounts of exudate produced by these wounds will lead to maceration and excoriation. Therefore dressings that absorb and contain exudate will prevent skin damage.
- Stoma products can be used to protect surrounding skin such as a filler paste which can level out creases in the surrounding tissue and help to maintain a good seal around the wound. When the exudate is excessive a stoma bag may be more appropriate.
- An alcohol-free barrier product, such as Cavilon, has been shown to assist healing of macerated skin, with a reduction of unpleasant symptoms. Cavilon forms a sustained barrier against the effects of fluids on the skin.
- Silver dressings are impregnated with slow-release silver. They are for use on wounds where critical colonization is suspected and should not be used routinely on clinically infected wounds which will require systemic antibiotics. They are effective against most micro-organisms. These dressings are very expensive and prone to inappropriate usage. Prescribe dressings for 2 weeks only and review effectiveness. If no improvement is evident, discontinue.

### *Malodour:*

- There are three main approaches adopted for the management of odour.
  - Systemic antibiotic
    - Metronidazole kills anaerobic bacteria responsible for odour production. However, treatment may cause side effects such as nausea, alcohol intolerance and neuropathy.
  - Topical antibiotic
    - Alternative to systemic antibiotic
    - Metronidazole gel can be mixed with a hydrogel, in equal quantities, to combine the properties of odour and slough management. A wound swab to confirm infection is useful.
  - Charcoal dressings.
    - Activated charcoal dressings can be used in conjunction with Metronidazole gel. They are used as a secondary dressing as contact with moisture renders them ineffective.
    - Dressings that contain a layer of activated charcoal as well as an absorbent primary wound contact layer are also available (e.g. Carboflex, Lyofoam C)

### *Bleeding:*

- Bleeding in fungating wounds can be related to tumour activity or due to the application of inappropriate dressings.
- Attention to dressing application and removal techniques, maintenance of humidity at the wound/dressing interface, cleaning techniques and the use of non-fibrous material can reduce the incidence of bleeding at dressing changes.
- Alginate dressings, which are considered to be haemostatic, can be applied to bleeding areas. To prevent the dressing from drying onto the wound it may be moistened with 0.9% sodium chloride solution before application. The wound should be irrigated with warmed saline prior to removal of the dressing to reduce the risk of trauma.
- Adrenaline 1:1000 can be applied topically, as an emergency measure. This must not be used liberally as it can cause ischaemic necrosis.
- Patients are at increased risk see severe haemorrhage – for further details see section on haemorrhage in palliative care emergencies section on page 13.

### Pain:

- The assessment of pain from the wound site should be managed separately from any other pain that the patient is experiencing.
- Pain that occurs during dressing changes may be due to adherence of dressing. Thorough irrigation to soak the dressing may ease removal; a review of dressing choice may be necessary.
- It is important to distinguish between pain caused by the stimulation of nerve endings (nociceptive pain) and pain caused by nerve dysfunction (neuropathic pain) because different treatments may be indicated.
- Local anaesthetic for example lignocaine gel can be applied directly to the wound surface.
- Short acting strong opioids at dressing changes can be used to optimise comfort.
- Topical opiates can be used to palliate nociceptive pain and stinging from damaged and ulcerated skin.
- Morphine sulfate 10mg can be mixed with a 10ml of instillagel and applied directly to the wound surface.
- Non-steroidal anti-inflammatory drugs (NSAID's) can be useful if pain is associated with local inflammation.
- Pain due to maceration and excoriation may be reduced by the use of a non-alcoholic skin barrier such as Cavilon.

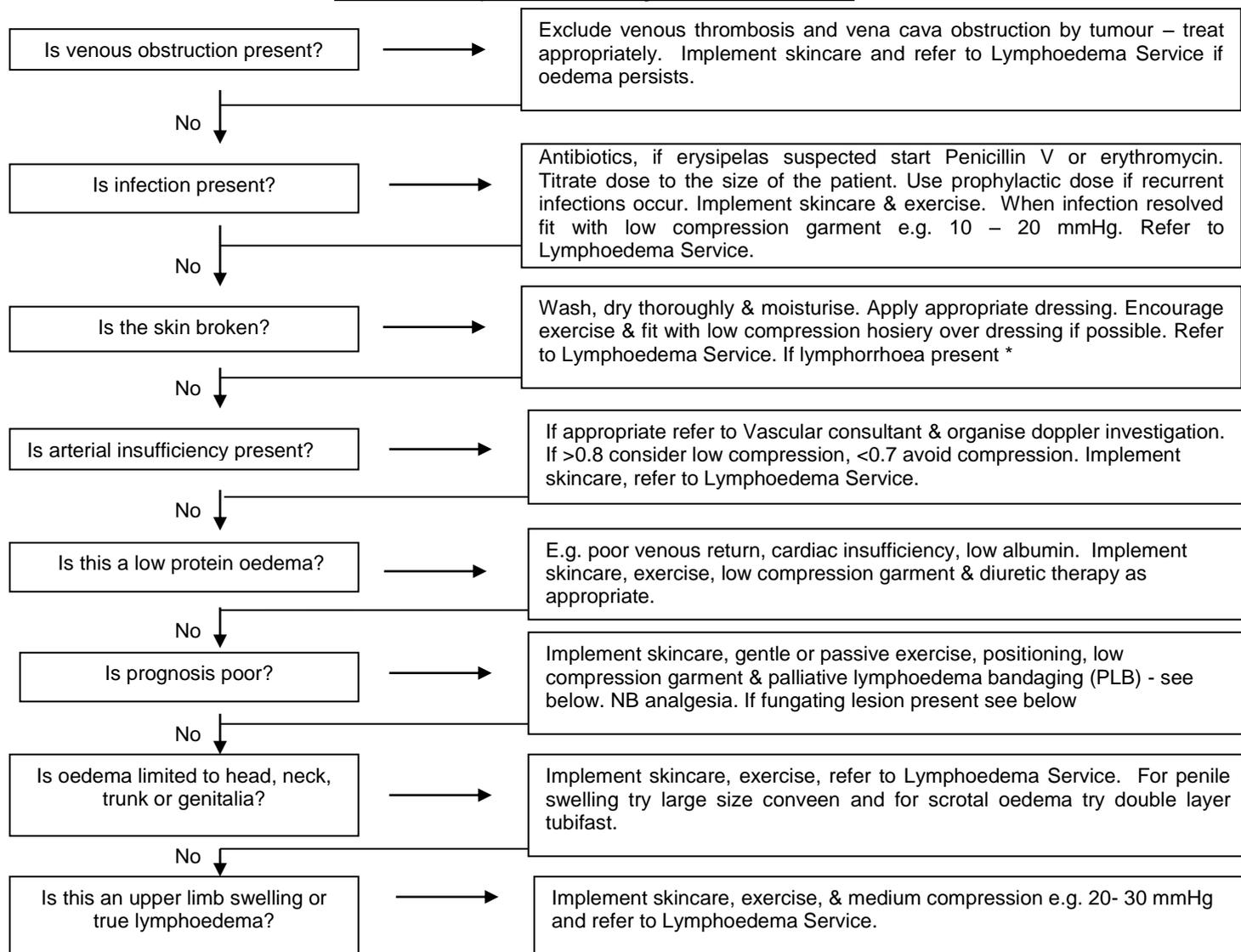
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## LYMPHOEDEMA

- Refer to North East Essex Lymphoedema Services (N.E.L.S.) - Note patients will be seen locally after initial consultation
- Advise patients to wash and moisturise the affected limb(s) daily and to carry out muscle pumping exercises.
- Diuretics can be effective.
- Steroids can be useful if the affected limb is tumour obstructed.
- Patients should follow preventative advice for infection. If signs of Acute Inflammatory Episode (AIE) occur, treat with antibiotics as appropriate. For recurrent AIE's prophylactic penicillin can be introduced.
- For Lymphorrhoea – wash limb(s)
  - Moisturise
  - Apply hydrocolloid dressing e.g. Aquacel or Cutinova Cavity then absorbent pads
  - Refer to N.E.L.S. on 01206 588097. Lymphoedema Service, 910 The Crescent, Colchester Business Park, Colchester, CO4 9YQ

### Care Pathway for the Management of Oedema



\* If lymphorrhoea present: Wash, dry thoroughly, moisturise with emollient e.g. Eucerin 3%. Apply hydrocolloid modified carmellose dressing e.g. Aquacel, absorbent pads and PLB i.e. Under cast wadding e.g. Velband, from toe to above knee then short stretch bandages e.g. Comprilan from toe to above knee. NB FOR SUPPORT **NOT** COMPRESSION. When leakage stopped fit with low compression hosiery

If fungation and lymphorrhoea present: Consider metronidazole gel and/ or charcoal dressings then if unable to apply PLB, sanitary towels can be used to the axilla or groin to lock lymph away therefore maintaining the healthy intact skin.

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