ESSEX PALLIATIVE, SUPPORTIVE AND END OF LIFE CARE GROUP

FORMULARY AND GUIDELINES FOR MANAGEMENT

Updated December 2017

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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 (2017)

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 been written not as a comprehensive text but as a guide 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.

For further specialist advice please contact:

Hospital Specialist Palliative Care Teams

Monday – Sunday 9am –5pm

Basildon Hospital:	extension 4740 (hospital switchboard 01268 524900)
Broomfield Hospital:	extension 4503 (hospital switchboard 01245 362000)
Colchester General Hospital:	01206 746272
Southend Hospital:	01702 385190

Community Specialist Palliative Care Teams

Mid-Essex: 01245 455478
7 days a week 8am – 8pm

North Essex: 01206 890360 (SinglePoint)
7 days a week, 24 hours a day

South West Essex: 01268 526259 (OneResponse)
7 days a week, 24 hours a day

South East Essex: 01702 608250
Monday – Sunday 8am-7pm, Monday-Friday, 9am-5pm

Saint Francis Hospice (for Brentwood): 01708 758610
7 days a week, 24 hours a day

Out of Hours Specialist Palliative Care Telephone Advice Services

Mid-Essex
Farleigh Hospice: 01245 455478
Broomfield Hospital: 01245 362000 and ask for consultant on call for palliative medicine

North Essex
SinglePoint: 01206 890360

South West Essex
OneResponse: 01268 526259

South East and South West Essex
Southend Hospital: 01702 435555 and ask for consultant on call for palliative medicine

Brentwood
Saint Francis Hospice: 01708 753319

Hospice contacts

Fair Havens Hospice, Southend	01702 220350
Fair Havens Hospice-at Home	07850 613445
Farleigh Hospice, Chelmsford	01245 457300
Saint 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	01268 526259

PRINCIPLES OF PRESCRIBING IN PALLIATIVE CARE

1. Assess the symptom(s) adequately
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 PUMPS

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 driver use the Syringe Pump Care Pathway and refer to local policies.

THE USE OF SYRINGE PUMPS IN PALLIATIVE CARE

ENTRY CRITERIA FOR ACTIVATION OF PATHWAY

Patient has symptom control needs and
1. is not tolerating or absorbing medication
or 2. the drug is unavailable as an oral medication

Assess current symptom control needs
Give PRN dose of appropriate drug if required

↓

Explain to patient/family rationale for using syringe driver

↓

Convert oral medication to 24 hour subcutaneous route (see palliative care section in local drug formulary for guidance)

↓

Prescribe syringe pump
- The volume of drugs and diluent combined in a CME Medical T34 pump will be dictated by local policy
- Check compatibility of drugs in syringe driver (maximum of 4 drugs mixed at any one time)
- Check diluent – most drugs for subcutaneous administration should be mixed with water for injection or normal saline
- Ensure PRN medications available for subcutaneous use for break-through symptoms

↓

CME Medical T34
The rate is delivered as mls
per hour over 24 hrs

↓

Gather equipment required
(See local Policy)

↓

Mix drugs and diluent in luer lock syringe and attach to giving set.

↓

Ensure syringe driver is in good working order e.g. battery is working, syringe driver has been serviced in the last year.

↓

Fit the syringe securely to the pump

↓

In discussion with the patient, choose an appropriate subcutaneous site to insert the butterfly and secure in place, avoiding oedematous areas, bony prominences, skin folds and irradiated or broken skin

↓

Ensure the syringe driver is running correctly
- Monitor the syringe driver regularly as per local policy
- If not working correctly, refer to instruction manual and local syringe driver policies for "trouble shooting"
- Complete clinical incident form if there is a problem with the timing of drug delivery

↓

Monitor the infusion site for signs of inflammation or leakage at cannula site (the cannula only needs to be re-sited if there is the presence of the above).
Observe for precipitation of drugs in syringe, particularly if using a combination of drugs

↓

Are patients symptoms adequately controlled?

NO

Use PRN medications to control symptoms
- Adjust 24 hour dose/drug requirements in syringe driver
- Consider referral to the Palliative Care Team
- or Pain Team (depending on patient's underlying condition)

YES

Continue
- Review regularly
- If stable for long periods

can oral medications be reinstated and syringe driver discontinued?

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

Hypercalcaemia

Hypercalcaemia is the commonest life threatening metabolic disorder occurring in patients with advanced cancer.

Definition – corrected calcium >2.6mmol/1.
Often only symptomatic >3.0mmol/1.
Levels of >4.0mmol/1 will cause death in a few days if untreated.
Incidence is 10% overall, but varies depending on the primary malignancy
Can be 20-40% in breast cancer, lung cancer (not small cell) haematological malignancies and some squamous cell carcinomas.

Pathophysiology

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

Assessment

Clinical features:
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

SYMPTOMS AND SIGNS OF HYPERCALCAEMIA

There may be some overlap as presentation varies between individuals

Mild (calcium <3.0)	**Moderate(calcium 3.0-4.0)**	**Severe (calcium .4.0)**
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

Should consider treatment if:

- Plasma calcium is >2.8
- Symptomatic
- First episode of hypercalcaemia or significant interval since previous episode

Acute treatment

Mild hypercalcaemia (corrected calcium<3.0mmol/1)

Rehydration
Encourage oral intake.
Only treat further if symptomatic, then manage as below

Moderate or severe hypercalcaemia (corrected calcium >3.0mmol/1)

Rehydration
Consider IV fluids 3-4l/24h if oral intake inadequate.
Can lower calcium by 0.3mmol/1.
Adjust rate if renal or cardiac failure present.
Replace potassium as necessary.
Repeat U&E daily and adjust fluids as necessary.
Stop drugs causing hypercalcaemia
Vitamin D compounds
Thiazide diuretics

Drug therapy
Drugs affecting bone mineralisation and metabolism - Intravenous bisphosphonates (first line therapy)
Calcitonin - give in addition to bisphosphonates for severe life threatening hypercalcaemia when rapid response is needed.
Corticosteroids (for potentially steroid sensitive tumours)

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

Pharmacological management

1. Bisphosphonates

These act by inhibiting osteoclast activity and bone resorption

Zolendronic acid

4mg IV in 100ml N. Saline over 15 min
Dose modify in renal failure
If U&Es abnormal need to prehydrate
Takes 24-36 h for serum calcium to respond
Maximum effect after 5-10 days
Duration of action 3-4 weeks

Disodium Pamidronate

90mg IV in 250ml N. Saline over 2-4 h
Adjust rate in renal failure
If U&Es abnormal need to rehydrate
Takes 36-48 hours for serum calcium to start to respond
Maximum effect after 5-7 days
Duration of action approx. 3 weeks

2. Calcitonin

Inhibits osteoclast activity and renal tubular reabsorption of calcium
200-400 units SC qds for 24-48 h.
Acts within 12h.
Duration of action 2-3 days
Relapse may be delayed by concurrent use of steroids if the tumour is steroid sensitive

3. Corticosteroids

Can be used in conjunction with calcitonin for potentially steroid sensitive tumours
Take 3-4 days to work

<u>Spinal Cord Compression</u>

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 cancers. It is a poor prognostic factor with 70% of patients dying within 1 year.

Cause: 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

Assessment

Have a high index of suspicion in view of need for rapid treatment to avoid permanent neurological deficit
Usually in a patient with known metastatic disease
Clinical features
Above L1 – upper motor neurone signs
Below L1 – lower motor neurone signs.

SYMPTOMS & SIGNS OF SPINAL CORD COMPRESSION

Symptoms	**Signs**
Back pain (early) >80 Local bone pain Root compression pain Radicular pain, worse on Coughing	Bony tenderness
Altered sensation >50% • Numbness • Pins and needles	Brisk reflexes
Weakness 75%	Upgoing plantars
Sphincter disturbance (late) 40 • Urinary retention • Constipation	Urinary retention
	Sensory level
	Loss of saddle sensation (late)

SYMPTOMS & SIGNS OF CAUDA EQUINA COMPRESSION

Symptoms	**Signs**
Sciatic pain (often bilateral	Flaccidity
Weakness	Absent reflexes
Peri-anal numbness	Loss of Saddle sensation (late)

Investigations

Urgent MRI of the whole spine

Management

Start treatment as soon as the diagnosis is suspected, do not delay until there is radiological confirmation

Steroids

Dexamethasone 16mg PO/IV stat.
Continue 16 mg/day orally (or IV if patient unable to take orally)
Urgent referral to appropriate team for consideration of

Radiotherapy or

Surgical decompression
Severity of symptoms and time to commencement of treatment determine outcome
If ambulatory, 70% remain so.

If paraplegic, 5% become ambulatory.

CHOOSING APPROPRIATE COURSE OF MANAGEMENT

Radiotherapy	**Surgery**
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 Caval 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

Assessment

Clinical features
Chest x-ray
CT scan

CLINICAL FEATURES OF SVCO

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 and peri-orbital • Neck • Arms and hands

Management

Dexamethasone 16mg IV / PO stat.
Continue 16mg / day orally (or IV if patient unable to take orally)

Urgent referral to appropriate team for consideration of

SVC stent insertion
Radiotherapy
Chemotherapy in chemo-sensitive tumours e.g. small cell lung cancer

Symptomatic management

Oxygen
Opioids +/- benzodiazepines for dyspnoea (see section on respiratory symptoms).

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

Major Forms

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

Guidelines for the 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
Professional presence
Patients should be nursed in a side ward to avoid shock and distress to other patients and relatives where possible

Guidelines for the event at home

It is important that the following equipment is available in the event of a severe haemorrhage at home. They should be stored discreetly but be readily available and accessible

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

Treatment

Anxiolytic (e.g. midazolam 5 – 10mg IV/IM/SC), diazepam 10mg PR/IM)

If there is an element of pain give:

Analgesic (e.g. diamorphine 5 – 10mg IV/IM/SC) or patient's usual breakthrough dose

What to do

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. Apply towels/pillows to bleeding site to absorb the bleeding if possible.

3. Administer medication

4. Call for assistance.

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

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* 1994 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.

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

INDICATIONS FOR USE OF STEROIDS IN ADVANCED MALIGNANCY	
Specific	**Non-specific**
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 carcinomatosis	Sweats
Oesophageal obstruction	Pain
Bowel obstruction	
Biliary obstruction	
Liver capsule pain	
Nerve compression pain	
Obstructive lymphadenopathy	

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.

Drug	Relative dose	Biological half-life
Hydrocortisone	20mg	8-12h
Prednisolone	5mg	18-36h
Methyl-prednisolone	4mg	18-36h
Dexamethasone	750micrograms	36-54h

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 for glucose in all patients and closely monitor BMs if known diabetic.

Dose

There is little evidence-based data on dosage. These guidelines follow current conventional best practice.

DEXAMETHASONE DOSE FOR SPECIFIC INDICATIONS		
2-4mg	**6-8mg**	**Up to 16mg**
Anorexia	Lymphangitis	SCC
Lethargy	Pain	SVCO
Nausea and vomiting	Nerve compression pain	Cerebral tumours
Sweats	Biliary obstruction	Raised ICP
Malignant pyrexia	Dyspnoea	Bowel obstruction
Liver capsule pain	Obstructive lymphadenopathy	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 a continuous 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. 08.00 for once daily or 08.00 and 12.00 for twice daily dosing).

Side effects

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

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. insomnia and euphoria.
Gastric irritation when 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 equivalent can stop abruptly.

If on treatment for more than 2 weeks or dose >6mg dexamethasone equivalent need to titrate down to avoid adrenal crisis.

CARE OF THE DYING

Recognition of the terminal phase

Increasing weakness and immobility
Loss of interest in food and fluid
Difficulty in swallowing
Often develops over days to weeks
Potentially reversible causes have been excluded or deemed untreatable

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 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

Review of hydration and nutrition

Patient should be offered oral fluid as tolerated
Consider any need for clinically assisted hydration
Patient should be offered 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 patient and family

Principles of symptom control in the terminal phase

Rationalise regular medication – can/should anything be stopped?
Anticipate the route of drug administration - does parenteral medication need to be used/available?
Ensure the availability of drugs for new symptoms that may arise
Review regularly

Noisy respiratory secretions

Often occur because patient is too weak to clear secretions. Usually more distressing for carers than for patient. May respond to appropriate positioning (semi-recumbent)

Can use anticholinergics:	Glycopyrronium 200micrograms stat and 600micrograms-1.2mg/24hrs (SC) Hyoscine hydrobromide 400micrograms stat and 1.2-2.4mg/24hrs (SC) Hyoscine butylbromide 20mg stat and 60-120mg/24hrs (SC)

If possibility of heart failure consider furosemide 40mg stat

Pain

Where possible continue previously effective analgesia. May need to consider change in route- injections, continuous subcutaneous infusions, suppositories.

Opioids

Morphine sulphate or diamorphine 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. Divide total daily dose of morphine by 2 to give equivalent daily dose of parenteral morphine Divide total daily dose of oral morphine by 3 to give equivalent daily dose of parenteral diamorphine. Remember to prescribe parenteral breakthrough analgesia at 1/6th of the equivalent daily dose of regular opioid.

NSAIDs

Some can be given as suppositories e.g. diclofenac. Injectable forms (diclofenac, ketorolac) can be given as single injections or as a continuous subcutaneous infusion.

Neuropathic pain

Continue oral agents where possible

Restlessness and agitation

Exclude reversible causes e.g. urinary retention, drug therapy, hypercalcaemia
Treat contributory symptoms e.g. pain. Ensure calming environment. If symptoms persist consider drug therapy:

midazolam 2.5-5mg stat and 10-120mg/24hrs (SC)
levomepromazine 12.5-25mg stat and 12.5-150mg/24hrs (SC)
haloperidol 1.5-3mg stat and 5-10mg/24hrs (SC)

phenobarbitone 100-200mg stat (IM) and 600mg-1200mg/24hrs (under specialist palliative care supervision only)

Nausea and vomiting

Think about the likely cause. Reverse the reversible if appropriate. Choose an anti-emetic based on the probable cause – see nausea and vomiting.

Dry mouth

See Mouth Care. There is no evidence that parenteral fluids improve a dry mouth

Anticipatory prescribing

Ensure medication is prescribed and available on an as required basis for symptoms that commonly arise during the terminal phase. This would usually include:

For pain: morphine (or diamorphine or oxycodone) sc at 1/6 total 24 hour dose up to 1 hourly

For nausea/ vomiting: cyclizine 50mg sc up to tds, haloperidol 1.5-3mg sc up to tds, levomepromazine 6.25-25mg sc up to tds

For restlessness/ agitation: midazolam 2.5-5mg sc up to 1 hourly, haloperidol 1.5-3mg sc up to tds, levomepromazine 12.5 -25mg sc up to tds

For noisy respiratory secretions: glycopyrronium 200micrograms sc up to 1.2mg/24 hours, hyoscine hydrobromide 400micrograms sc up to 2.4mg/24 hours, hyoscine butylbromide 20mg sc up to 120mg/24 hours

For breathlessness: morphine (or diamorphine or oxycodone) 2.5-5mg sc 1 hourly or midazolam 2.5 – 5 mg sc up to 1 hourly (for breathlessness associated with anxiety), if not already prescribed for other indications

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.

PAIN CONTROL

"Pain is what the patient says hurts" (Twycross, 1997)

Cancer pain may be due to:

1. The disease itself
2. Treatment (e.g. radiotherapy, chemotherapy)
3. Unrelated to either the cancer or its treatment

An understanding of the underlying pathophysiology of the pain will aid its treatment

Pain assessment

Site
Severity
Timing
Quality/description
Radiation
Provoking factors
Relieving factors

Analgesic history

Analgesics tried
Dosages
Timing
Duration of treatment
Efficacy
Side effects

Classification of pain

Nociceptive - Somatic
Visceral

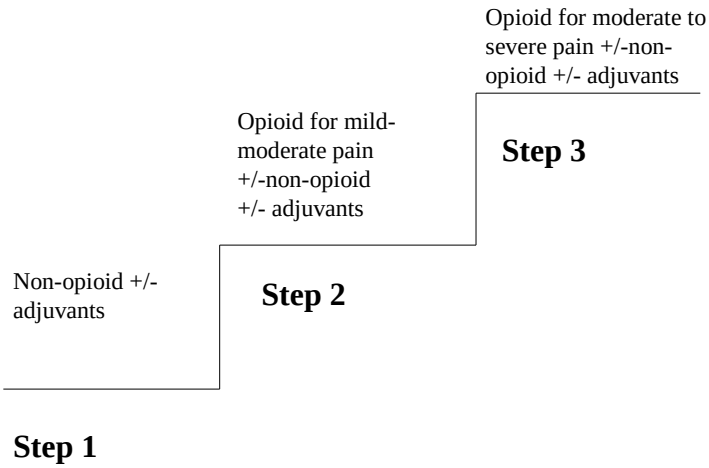
Neuropathic - Nerve compression
Nerve injury

Principles of analgesic use:

By mouth where possible: avoid intramuscular/intravenous routes where possible in palliative care patients – subcutaneous absorption is generally as good
By the clock (i.e. regularly)
By the WHO ladder

Remember to prescribe appropriate analgesia for breakthrough pain at 1/6th total 24 hour dose. Monitor response to treatment and modify accordingly.

WHO Analgesic Ladder



Step 1. Non-opioid: Paracetamol/ NSAID Adjuvants: Tricyclic antidepressants, anticonvulsants, antiarrhythmics, corticosteroids.

Step 2. Opioids for mild-moderate pain: codeine (co-codamol 8/500, co-codamol 30/500), dihydrocodeine (codydramol 10/500), tramadol

Step 3. Opioids for moderate-severe pain: morphine, oxycodone, fentanyl, diamorphine, methadone, buprenorphine, alfentanil

Paracetamol

Preparations

Tablets: 500mg
Dispersible tablets: 500mg
Oral suspension: 250mg/5ml
Suppositories: 500mg, 1g

Dose

1g qds not more often than 4hrly, maximum dose 4g/24hrs. Remember to dose modify to maximum 3g /24hrs in patients <40kg, or <50kg with other risk factors for paracetamol toxicity

Indications

Mild-moderate pain
Pyrexia

Non-steroidal anti-inflammatory drugs (NSAIDs)

Of particular benefit in pain associated with inflammation
Choice of NSAID often dictated by benefit: adverse effect profile

Suggested drugs

Ibuprofen 400-600mg tds-qds (tablets or liquid)
Naproxen 250-500mg bd (tablets)
Diclofenac 150mg/24hrs (tablets, dispersible tablets, suppository, continuous subcutaneous infusion)
Ketorolac 30-60mg/24hrs via continuous subcutaneous infusion (for severe inflammatory pain)

Consider concurrent use of a gastroprotective agent for at risk patients

Opioid analgesics

Morphine sulphate

The opioid of first choice for moderate to severe cancer pain

Oral Preparations

Immediate release: liquid 10mg/5ml and 100mg/5ml or tablets 10mg, 20mg, 50mg

Sustained release over 12 hours: tablets 5mg, 10mg, 15mg, 30mg, 60mg, 100mg, 200mg; capsules 10mg, 30mg, 60mg, 100mg, 200mg; or granules 20mg, 30mg, 60mg, 100mg, 200mg

Sustained release over 24 hours (capsules): 30mg, 60mg, 90mg, 150mg, 200mg

Injectable preparations

Morphine sulphate 10mg/ml, 15mg/ml, 20mg/ml and 30mg/ml available in 1ml and 2ml ampoules

Approximately 2 x as potent as oral morphine sulphate

Guidelines for use

Initiating morphine analgesia

Talk to the patient: allay any fears or concerns
Start a low dose of regular morphine either a 4 hourly immediate release or a 12 hourly slow release preparation
Remember to prescribe breakthrough analgesia (1/6th of total 24 hour dose available up to hourly if needed)
Co-prescribe a laxative
Ensure an anti-emetic is available eg haloperidol 1.5-3mg, cyclizine 50mg tds, metoclopramide 10mg tds
Assess for pain relief and side effects
If pain still present and opioid sensitive, increase dose by 30-50%

Diamorphine

Injectable Preparation

Injection (powder for reconstitution): 5mg, 10mg, 30mg, 100mg, 500mg ampoules
Diluent: water for injection

Indications

Guidelines for use

Can be given as single injections or as continuous subcutaneous infusion via syringe driver
Approximately 3 times more potent than oral morphine, therefore to convert oral morphine to subcutaneous diamorphine give 1/3 of the oral dose

Oxycodone

Oral Preparations

Immediate release: liquid 10mg/10ml and 100mg/10ml; or capsules 5mg, 10mg, 20mg
Sustained release over 12 hours (tablets): 10mg, 20mg, 30mg,40mg, 60mg, 80mg

Indications

Patients with opioid sensitive pain experiencing side effects (particularly psychogenic) with morphine
Patients with moderate renal failure or for breakthrough dosing in patients with severe renal failure

Guidelines for use

See morphine

For dose conversion from morphine refer to table

Injectable Preparations

10mg/ml solution: 1ml and 2ml ampoules, 50mg/ml solution
Can be given as single injections or as continuous subcutaneous infusion via syringe driver
Approximately twice as potent as oral oxycodone therefore to convert oral oxycodone to subcutaneous oxycodone give ½ of the oral dose
Has approximately the same potency as subcutaneous diamorphine therefore when converting from subcutaneous diamorphine use the same dose (NB be aware of potential differences in dose with different dose conversion methods)

Fentanyl, transdermal

Preparations

Self-adhesive patch. Different patch sizes deliver 12, 25, 50, 75 and 100micrograms/hr

Indications

Patients with opioid sensitive pain experiencing side effects with morphine
Patients unable to take oral opioids
Patients with intractable morphine-induced constipation despite regular use of appropriate laxatives
Patients in renal failure

Guidelines for use

Patch changed every 72 hours
Takes 36-48 hours to reach steady state plasma concentrations
Elimination plasma half-life is 15-17 hours
Inappropriate for patients who need rapid titration of severe uncontrolled pain
Published morphine: fentanyl dose conversion ratios differ from 150:1 (manufacturer's) to 100:1 (BNF)
For suggested dose conversion from morphine refer to table which uses 150:1

Fentanyl, transmucosal

Available in oral, buccal, sublingual and nasal preparations

Indications

Rapidly escalating, unpredictable breakthrough pain in patients already on regular strong opioids e.g. incident pain
Not intended as first choice breakthrough analgesia for patients on transdermal fentanyl

Guidelines for use

Pain relief occurs rapidly (5-15 minutes)
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.

Methadone

Preparations

Tablets: 5mg
Solution: 1mg/ml, 10mg/ml, 20mg/ml
Injection: 10mg/ml in 1ml, 2ml, 3.5ml and 5ml ampules

Indications

Patients with opioid sensitive pain experiencing side effects with morphine
May be more effective than morphine for neuropathic pain

Guidelines for use

Long and unpredictable plasma half-life (8-75 hours)
Highly lipophilic, accumulates in tissues creating potentially extensive reservoir
Dose requirements should be titrated under specialist palliative care supervision, usually as an in-patient
When dose requirements stable, taken 8 hourly or 12 hourly
Injectable form can be given by continuous subcutaneous infusion, give ½ of the daily oral dose over 24 hours

Alfentanil

Synthetic derivative of fentanyl with a short plasma half-life (100mins) metabolised in liver to inactive compounds
10 times more potent than diamorphine
Used mainly via CSCI for patients in renal failure who require regular step 3 opioids where there is evidence of morphine toxicity
For use under specialist palliative care supervision

Buprenorphine

A partial opioid agonist
Self-adhesive patch delivers drug transdermally and changed every 3 or 4 days (depends on brand) or 7 days (eg Bu Trans, Reletrans)

Special pain situations

Neuropathic pain

Variable opioid sensitivity. Use WHO analgesic ladder.
Consider co-analgesia:

Antidepressants:

Amitriptyline 10-75 mg nocte
Duloxetine 60mg od – 60mg bd
Start at low dose and increase as tolerated. May take up to one week before analgesic effect apparent

Anticonvulsants:

Gabapentin 100mg-900mg tds
Pregabalin 25 – 300mg bd
Clonazepam 500micrograms-4mg nocte
Sodium Valproate 200mg-1g nocte

Start at low dose and increase as tolerated. May take up to one week before analgesic effect apparent.

Consider: Transcutaneous electrical nerve stimulation (TENS), nerve blocks

Bone pain

Use WHO analgesic ladder and consider:
NSAIDs: as above
Steroids: Dexamethasone 8mg daily
Bisphosphonate: Zolendronic acid 4mg or disodium pamidronate 90mg by IV infusion repeated every 3-4 weeks if effective
Bisphosphonates should be given in conjunction with calcium supplements and vitamin D.
Assess dental state prior to commencing bisphosphonates and suspect osteonecrosis of the jaw if the patient develops jaw pain.

Other measures to consider: radiotherapy, surgery for actual or potential long bone fractures

Liver capsule pain

Use WHO analgesic ladder and consider:
Steroids: dexamethasone 8mg daily
NSAIDs: as above

Bowel colic

Relatively opioid insensitive
Consider hyoscine butylbromide (Buscopan): 10-20mg qds PO, 60-120mg/24hrs by continuous subcutaneous infusion
See section on bowel obstruction for management of colic in this situation

Muscle spasm

Relatively opioid insensitive

Consider:

Diazepam 2-10mg tds PO
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

KETAMINE

May be useful as a co-analgesic in neuropathic, inflammatory or ischaemic pain (limited evidence base).
Available to order as liquid preparation from 'Specials' manufacturer
Should be initiated and titrated under specialist palliative care supervision
Dose range 10-200mg tds-qds PO or 100-2400mg/24hrs via continuous subcutaneous infusion

References:

Grond S et al. Assessment and treatment of neuropathic cancer pain following WHO Guidelines*. Pain* 1999; **79**: 15-20.

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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* 199*6;* **68**: 217-227.

NICE Clinical Guideline CG140 (2012). Opioids in palliative care: safe and effective prescribing of strong opioids in palliative care of adults

NICE Clinical Guideline CG173 (2013). Neuropathic pain: pharmacological management

Guide to Equivalent doses of Morphine and related Opioids

Oral					Injectable				Patch
Morphine			Oxycodone		Morphine		Oxycodone		Fentanyl
4 Hour immediate release tabs/liq e.g. Sevredol, Oramorph	12 Hour controlled release tabs e.g. MST, Zomorph	24 Hour controlled release caps e.g. MXL, Morcap SR	4 to 6 Hour immediate release caps/liq e.g. Oxynorm 5mg, 10mg, 20mg, 5mg/5ml	12 Hour modified release tabs e.g. OxyContin 5mg, 10mg, 20mg, 40mg, 80mg	4 Hour injection S/C, IM	Continuous infusion S/C	4 Hour injection S/C, IM	Continuous infusion S/C	72 Hour controlled release patch e.g. Durogesic, Matrifen
Every 4 hours	**Every 12 hours**	**Every 24 hours**	**Every 4 to 6 hours**	**Every 12 hours**	**Every 4 hours**	**Over 24 hours**	**Every 4 hours**	**Over 24 hours**	**Every 72 hours**
5 mg	15 mg	30 mg	2.5 mg	5 mg - 10 mg	2.5 mg	15 mg	1.25mg	5 mg - 10 mg	12 micrograms/h
10 mg	30 mg	60 mg	5 mg	10 mg – 15 mg	5 mg	30 mg	2.5mg	10 mg - 15 mg	12- 25 micrograms/h
15 mg	45 mg	90 mg	7.5 mg	20 mg	7.5 mg	45 mg	3.5mg	20 mg	25 micrograms/h
20 mg	60 mg	120 mg	10 mg	30 mg	10 mg	60 mg	5mg	30 mg	37 micrograms/h
30 mg	90 mg	180 mg	15 mg	40 mg	15 mg	90 mg	7.5 mg	40 mg	50 micrograms/h
40 mg	120 mg	240 mg	20 mg	60 mg	20 mg	120 mg	10 mg	60 mg	62 micrograms/h
50 mg	150 mg	300 mg	25 mg	70 mg	25 mg	150 mg	12.5 mg	70 mg	75 micrograms/h
60 mg	180 mg	360 mg	30 mg	90 mg	30 mg	180 mg	15 mg	90 mg	100 micrograms/h
80 mg	240 mg	480 mg	40 mg	120 mg	40 mg	240 mg	20 mg	120 mg	125 micrograms/h
100 mg	300 mg	600 mg	50 mg	150 mg	50 mg	300 mg	25 mg	150 mg	175 micrograms/h

1: When opioids are prescribed **prophylactic laxatives** should be prescribed concurrently to treat constipation, eg: Senna, Docusate.
2: When long acting preparations are used, always prescribe a short acting immediate release preparation equivalent to the four hourly dose for **breakthrough pain**.
3: When starting opioid-based analgesia, nausea can occur for the first 7 – 10 days and an **antiemetic** may be required.
4: Oxycodone and Diamorphine may be considered equivalent, on a mg for mg basis, when given as a **continuous subcutaneous infusion via syringe pump**.
5: Caution: When converting oral to s/c Oxycodone use half the oral dose
6: There may be difficulties in escalating doses and converting to other agents with buprenorphine patches
6: * Note * 'however extensive clinical experience has led many physicians to regard the potency ratio for PO tramadol and PO morphine to be 1:10' (Ref. PCF4, p 341)

Patch	Oral		
Buprenorphine (note different types)	**Morphine**	**Codeine / Dihydrocodeine**	**Tramadol (*see note 6)**
See below	**Over 24hours**	**Every 6 hours**	**Every 6 hours**
Butrans '5' 7day patch	~12mg/day	~30mg QDS	
Butrans '10' 7day patch	~24mg/day	~ 60mg QDS	
Butrans '20' 7day patch	~48mg/day		~50mg QDS *
Transtec '35' 4day patch	~84mg/day		~100mg QDS *

Associated Documents: CG048: Palliative Care Formulary and Guideline

References:

BNF Online [Accessed via Medicines Complete link via staffnet 10/06/2015]
Palliative Care Formulary (PCF4) (2011).

ANOREXIA-CACHEXIA SYNDROME AND FATIGUE

Anorexia-cachexia syndrome

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

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

Exclude/treat reversible causes
Oral problems e.g. candida
Nausea and vomiting
Dysphagia
Oesophagitis

Non-pharmacological management
Explanation and reassurance to patient and family.
Nutritional counselling and supplements.
May prevent further weight loss.
No evidence for weight gain or improved quality of life.

Pharmacological management

1. Corticosteroids
e.g. dexamethasone 4mg od (give as single dose no later than lunchtime).
Improve appetite.
Weight gain uncommon, may occur due to fluid retention.
Decrease fatigue.
Rapid onset of action.
May have limited duration of action (approx. 4-6 weeks), but helpful in patients with short prognosis.
Stop after 1 week if no benefit.
If develop side effects or prognosis is longer than weeks, consider decreasing to 2mg.

2. Progestogens
e.g. megestrol acetate 160 – 800 mg od or split doses.
e.g. medroxyprogesterone 400mg –1600mg od.
Improves appetite.
Weight gain (both fat and lean muscle).
Decreases fatigue

Delayed onset of action (approx. 2-4 weeks), so limited use in patients with short prognosis.
Duration of action months.

If have longer prognosis but need rapid symptomatic benefit, can consider starting corticosteroid and progestogen simultaneously and tailing off steroids after 3-4 weeks as progestogen starts to have effect.

3. Prokinetic agents
e.g. metoclopramide 10mg tds
Pre-meals.
Helpful in early satiety and chronic nausea related to gastroparesis.

Fatigue

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 are multi-factorial, related to both cancer and its treatment.

Assessment

Activities of daily living
Exercise tolerance
Sleep patterns

Exclude/treat reversible causes

Anaemia
Biochemical abnormalities
Depression
Drug side-effects

Non-pharmacological management

Explanation and reassurance to patient and family
Exercise

- Aerobic exercise helpful both during and after treatment

There is no evidence currently to support energy conservation strategies or nutritional input.

Pharmacological management
Corticosteroids (see previous)
Progestogens (see previous)
Psychostimulants

- In limited situations under specialist guidance only

DRUGS USED IN THE TREATMENT OF NAUSEA AND VOMITING

SITE OF ACTION	MECHANISM /RECEPTORS	DRUG	INDICATION/USE	DOSE/ROUTE
VOMITING CENTRE	Antihistamine & Anticholinergic	**CYCLIZINE**	Raised intracranial pressure Bowel obstruction FIRST LINE	PO 50mg tds SC 50mg tds CSCI 100-150mg over 24h
	Anticholinergic	**HYOSCINE HYDROBROMIDE**	Bowel obstruction SECOND LINE	SC 400micrograms tds CSCI 1.2-2.4mg over 24h
	5-HT2, Dopamine, Acetylcholine & Histamine antagonist	**LEVOMEPROMAZINE**	Broad spectrum, unknown cause or treatment failure SECOND LINE	PO 6.25-25mg od SC 3.125-25mg tds CSCI 12.5-75mg over 24h
CEREBRAL CORTEX	Anxiolytic	BENZODIAZEPINE e.g. **LORAZEPAM**	Fear and psychological stimuli e.g. anticipatory nausea FIRST LINE	PO 1-2mg stat
CEREBRAL CORTEX & GASTROINTESTINAL TRACT	Anti-inflammatory	CORTICOSTEROID e.g. **DEXAMETHASONE**	Raised ICP Bowel obstruction SECOND LINE	PO 4-16mg om SC 4-16mg om CSCI 4-16mg over 24h
CHEMORECEPTOR TRIGGER ZONE	Dopamine antagonist	**HALOPERIDOL**	Opioid-induced vomiting Biochemical causes e.g. hypercalcaemia, uraemia FIRST LINE	PO 1.5-5mg on SC 1.5-5mg on CSCI 3-5mg over 24h
CHEMORECEPTOR TRIGGER ZONE & GASTROINTESTINAL TRACT	Dopamine, 5-HT3 antagonist, 5-HT4 agonist Prokinetic	**METOCLOPRAMIDE**	Gastric stasis, squashed stomach and oesophageal reflux FIRST LINE	PO 10-20mg tds/qds SC 10-20mg tds/qds CSCI 30-100mg over 24h
			Opioid-induced vomiting Biochemical causes SECOND LINE	
	Dopamine antagonist Prokinetic	**DOMPERIDONE**	Gastric stasis, squashed stomach and oesophageal reflux FIRST LINE	PO 10mg tds
			Opioid-induced vomiting Biochemical causes SECOND LINE	
	5-HT3 antagonist	**ONDANSETRON/ GRANISETRON**	Chemotherapy and radiotherapy FIRST LINE But otherwise often unhelpful in palliative care patients	PO 8mg bd-tds/1mg bd IV 8mg bd/1mg bd SC 8mg bd-tds CSCI 8-24mg over 24h
GASTROINTESTINAL TRACT	Antisecretory Anticholinergic	**HYOSCINE BUTYLBROMIDE**	Bowel obstruction SECOND LINE	PO 20mg tds SC 20mg tds CSCI 60-120mg over 24h
	Antisecretory Somatostatin analogue	**OCTREOTIDE**	Bowel obstruction Intractable vomiting SECOND LINE	SC 100-300micrograms tds CSCI 300micrograms- 1mg over 24h

PO = oral SC = subcutaneous CSCI = continuous subcutaneous infusion

IDENTIFYING SPECIFIC CAUSES OF NAUSEA AND VOMITING		
Causes	**Examples**	**Presentation**
Drugs and metabolic	Drugs • Opioids • Antibiotics • Chemotherapy Metabolic • Hypercalcaemia • Renal failure • Liver failure	• Nausea & retching prominent • Continuous symptoms • No relief from vomiting • History of recent change in medications • Specific symptoms / signs of underlying cause
Gastric • Motility • Irritation	Motility • Upper abdominal tumour • Hepatomegaly • Ascites Irritation • NSAIDS • Steroids • Blood in stomach	Motility • Bloating after food • Vomiting after food • Fullness & discomfort • Dyspepsia Irritation • Epigastric discomfort • Dyspepsia • Resistant to antiemetics • Drug history
Stimulation of vomiting centre	Raised intracranial pressure • Cerebral primary • Cerebral metastases Cranial radiotherapy	• Headache • Sedation • Confusion • Neurological signs
Intestinal obstruction	• Tumour • Adhesions • Constipation	• Bowels not open and not passing flatus • Abdominal distension • Colic • Vomiting often relieves nausea • Faeculent vomiting • Large volume vomits
Psychological and emotional	• Fear • Anxiety • Depression • Pain	• Distress exacerbates existing symptoms • Rarely sole cause of nausea and vomiting
Pharyngeal stimulation	• Cough • Candida	• Coughing results in muscle spasm and vomiting • Sputum or infection in pharynx can trigger vomiting reflex

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.

Assessment

It is essential to determine likely cause, 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
AXR

Causes

CAUSES OF NAUSEA AND VOMITING		
Related to cancer	**Related to treatment**	**Related to concurrent illnesses or debility**
Ascites	Chemotherapy	Anxiety
Bowel obstruction	Drugs	Candida
Dysphagia	Radiotherapy	Constipation
Gastric outflow obstruction		Cough
Hepatomegaly		Gastritis
Metabolic disturbance		Infection

IDENTIFYING SPECIFIC CAUSES OF NAUSEA AND VOMITING		
Causes	**Examples**	**Presentation**
Drugs and metabolic disturbances	Drugs • Opioids • NSAIDS • Antibiotics • Chemotherapy Metabolic • Hypercalcaemia • Renal failure • Liver failure Toxins • Tumour toxins • Infections	• Nausea & retching prominent • Continuous symptoms • No relief from vomiting • History of recent change in medications • Specific symptoms / signs of underlying cause
Gastric • Motility • Irritation	Motility • Upper abdominal tumour • Hepatomegaly • Ascites Irritation • NSAIDS • Steroids	Motility • Bloating after food • Vomiting after food • Fullness & discomfort • Dyspepsia Irritation • Epigastric discomfort • Dyspepsia • Resistant to antiemetics • Drug history
Stimulation of vomiting centre	Raised intracranial pressure • Cerebral primary • Cerebral metastases Cranial radiotherapy	• Headache • Sedation • Confusion • Neurological signs
Intestinal obstruction	• Tumour • Adhesions • Constipation • Blood in stomach	• Bowels not open and not passing flatus • Abdominal distension • Colic • Vomiting often relieves nausea • Faeculent vomiting • Large volume vomits
Psychological and emotional	• Fear • Anxiety • Depression • Pain	• Distress exacerbates existing symptoms • Rarely sole cause of nausea and vomiting
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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

Choose on basis of most likely cause of nausea and vomiting **(see table)**.
Reassess at regular intervals.
If first choice drug only partially successful or unsuccessful after 24-48h either increase dose or try second line specific antiemetic.
Combination of antiemetics with different actions may be needed in up to 25% of cases especially where have multi-factorial causes.
Do not use more than one drug from the same class.
Be aware of potential for prolongation of QT interval with some anti-emetics (domperidone, metoclopramide, haloperidol)
Dexamethasone may be added in to enhance antiemetic effects of other drugs.
If still have treatment failure consider using a broad-spectrum second line agent such as levomepromazine as a substitute.

Frequency

Give regularly rather than only “as required”.

Route

Prophylaxis

- Use oral route.

Treatment

- Use parenteral route if there is established vomiting.
- Subcutaneously either as stat doses or by continuous subcutaneous infusion via a syringe driver.
- Can switch back to oral when symptoms controlled, but ensure oral antiemetics are restarted before syringe driver is stopped.
- Rectal route can also be used.

CONSTIPATION

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

Assessment

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).

Management

Prevention is better than cure

Non-pharmacological

If possible, increase fluid and fibre
Encourage mobility
Assess ability to get to and use the toilet (may need raised toilet seat or commode)

Pharmacological

Commence prophylactic laxatives when starting weak or strong opioids
Use oral laxatives in preference to rectal interventions.

Use a combination of stimulant laxative with a softener/osmotic laxative.
Titrate components to achieve optimum stool frequency and consistency.
If patient is in bowel obstruction – see section on intestinal obstruction.

Type of constipation	Oral management Tablet/capsule	Oral management Syrup/ Liquid	Rectal management	Comments
Rectum full, faeces soft	Senna 15mg od-bd Bisacodyl 5-20mg nocte Co-Danthramer 1-2 nocte Co-Danthramer Forte 1-2 nocte	Senna 15mg od-bd Co-danthramer 5-10ml nocte Co-danthramer Forte 5ml nocte	Bisacodyl 10mg suppository	Danthron stains urine red and can cause perianal irritation. Do not use in patients with faecal or urinary incontinence
Rectum full, faeces hard	Docusate Sodium up to 600 mg daily in divided doses (licensed up to 500mg daily)	Docusate Sodium 50mg/5ml Movicol/ Laxido 1-6 sachets/ day	Glycerine suppositories Phosphate enema Arachis oil	Arachis oil contains peanut oil - Do not use in patients with peanut allergy
Colon full, with colic	Docusate sodium	Docusate Sodium 50mg/5ml Movicol/ Laxido 1-6 sachets/day	High Arachis oil enema	Administer arachis oil enema overnight, cosider antispasmodic
Colon full, with no colic	Co-Danthramer 1-3 nocte Co-Danthramer Forte 1-3 nocte	Co-Danthramer Co-Danthramer Forte Movicol/ Laxido 1-6 sachets/day	Bisacodyl 10mg Suppository	Consider phospate enema alone or Arachis oil enema overnight then phosphate enema the next morning
Opioid-induced	Naloxegol 12.5-25mg od PO	Methyl-naltrexone 8-12mg **by SC injection** (on alternate days or less often titrated to need. Patients may receive two consecutive doses 24 hours apart, only when there has been no response to the dose on the preceding day)		For patients who have had an inadequate response to other laxatives. Contra-indicated in patients with bowel obstruction or who are at risk of perforation

- Titrate laxatives individually according to stool consistency (ease of defecation) rather than frequency
- Avoid lactulose. It can cause bloating and wind.
- If diarrhoea occurs as a result of laxative therapy, stop for 24 hours then recommence on dose level down
- If co-danthramer rash develops in peri anal area, stop and replace with a faecal softener and a stimulant laxative
- Bulk forming agents eg Fybogel are not effective in preventing opioid-induced constipation

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.

Assessment

Patient hydration status – is it appropriate to hydrate orally/parenterally

Exclude reversible causes:
Constipation with overflow
Drug induced diarrhoea (antibiotics, NSAIDs)
Infective diarrhoea

Examination

Palpate abdomen
Stool colour
PR examination to exclude overflow secondary to rectal loading with faeces

Investigations

Stool culture

Management

1. Treat reversible causes.
2. Encourage fluids
3. Loperamide 2 mg after each stool. Can increase from 2 mg qds. to 4mg qds.
4. Consider codeine 30 – 60 mg qds. if ineffective.
5. Use combination of Loperamide and Codeine.
6. Consider octreotide to reduce high output diarrhoea 300micrograms -1mg/24 hrs by continuous subcutaneous infusion or 100-300micrograms tds by SC injection. For patients requiring medium to long term octreotide consider using a depot preparation of octreotide or lanreotide
7. Steatorrhea/fat malabsorption – requires pancreatic enzymes plus PPI.
8. Encourage fluids.
9. For patients on opioids - consider converting to SR tablets to IR preparation to improve absorption

INTESTINAL OBSTRUCTION

Assessment

Ascertain the likely site of obstruction based on clinical history and examination i.e. gastroduodenal junction, small bowel or large bowel.

Are there likely to be multiple sites of obstruction? e.g. in history of previous abdominal irradiation or surgery.

Is the patient fit for surgery? Remember that bowel obstruction may not be related to the patients known cancer and that a surgical opinion should be considered.

General principles

1 Drugs should be given parenterally if possible. A syringe-driver is an acceptable way of delivering a combination of drugs for most patients with bowel obstruction.

2 Avoid NG tubes where possible– these are disliked by patients. Patients often prefer to vomit several times a day rather than have an NG tube inserted.

3 Allow the patient to eat and drink freely as tolerated.

4 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.

5 Avoid 'routine' blood tests – they are not necessary in the last few days of life or if the result does not alter clinical management.

6 Simple mouth care is important.

7 Stop all stimulant laxatives (codanthramer, senna) and GI motility stimulants such as metoclopramide and domperidone.

Management

Nausea

Use centrally acting anti-emetics such as:

Haloperidol 3-5mg/24 hrs via continuous subcutaneous infusion
Cyclizine 100 – 150 mg/24 hours via continuous subcutaneous infusion
Levomepromazine 5 – 25mg/24hrs via continuous subcutaneous infusion
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 up to 100mg over 24hrs in syringe driver)

Vomiting

Drugs that are useful in reducing the volume of gastrointestinal secretions and therefore the frequency and volume of vomits are:

Octreotide – start at 300micrograms/24 hrs via continuous subcutaneous infusion, this can be increased to 1000micrograms over 24 hours if necessary. Once symptoms are stable reduce to lower effective dose. For patients requiring medium to long term octreotide consider using a depot preparation of octreotide or lanreotide

Hyoscine butylbromide (Buscopan) - 60-120mg/24 hrs via continuous subcutaneous infusion
In gastric outflow and small bowel obstruction, both drugs may be needed to reduce vomiting to an acceptable level.

Pain

Hyoscine butylbromide (Buscopan) -
Used in colicky pain. Give stat does of 20mg SC then give 60/120mg/24hrs

Opioids – if the patient is already taking opioids then remember to convert to the appropriate dose of diamorphine (see morphine conversion chart).

If patient is using fentanyl patches these may be continued rather than switching to diamorphine.

If patient is opioid naïve it may be necessary to add diamorphine to the syringe driver to aid pain control –

Start at a low dose (5 – 10mg/24 hrs) and increase further if appropriate via syringe driver.

Diclofenac – used for inflammatory pain e.g. if peritonitis has developed.
Dose 75-150mg/24hrs via continuous subcutaneous infusion.

NB Diclofenac does not mix with other drugs and needs a separate syringe driver.

Laxatives

Use ‘softener’ laxative such as Docusate sodium 200 mg tds.
It may be necessary to use suppositories and/or enemas if these are tolerated by the patient.
Stop stimulant laxatives

Steroids

Consider 5 day trial Dexamethasone 8mg SC or by continuous subcutaneous infusion

FISTULAE

High output fistulae - May respond to octreotide 100 micrograms tds. by SC injection or 300 - 600 micrograms/24 hrs by continuous subcutaneous infusion. For patients requiring medium to long term octreotide consider using a depot preparation of octreotide or lanreotide

Large bowel fistulae – Consider using anti-diarrhoeal drugs to constipate the patient.

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

MALIGNANT ASCITES

Treatment is aimed at symptom control consider:

Diuretics

Spironolactone100-500mg od
If inadequate response add in loop diuretic furosemide 40-80mg od
bumetanide 1-2mg od

Paracentesis

Periteovenous shunt (for those relatively fit patients requiring repeat paracenteses)

Anticancer 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.

Risk Factors

- All advanced disease/debilitation
- Poor oral hygiene
- Chemotherapy (immuno suppressants)
- Radiotherapy (increased in local treatment of head & neck)
- Local tumours
- 0_2 Therapy
- Mouth breathing
- Anorexia /reduced fluid /dehydration
- Nausea & vomiting
- Drugs (anti emetics/opioids/diuretics/steroids/antibiotics)

Prevention

Regular preventative mouth care can prevent oral problems, and therefore promote comfort. Preventative measures should include high quality oral status assessment and education in order to anticipate problems enhancing effective management of mouth problems. Tooth brushing is the most effective hygiene care, however chlorhexidine helps with plaque control and can be used in control of infections and where brushing teeth is not possible.

People with their own teeth

After food brush teeth twice a day with toothpaste, rinsing well with water

If infection is present

- Twice daily Corsodyl (chlorhexidine 0.2%) or Oraldene (hexetidine 0.1%) up to four times a day after food. This can be diluted with equal parts of water – all solution must be used.
- Instruct to swish this around their mouth and spit it out.
- If possible, don't eat or drink for 20 minutes.

NB: Chlorhexidine solutions contain alcohol and should be avoided in patients receiving head and neck radiotherapy. Alcohol can cause rebound dryness.

- Sodium chloride solution or water is suggested for patients who are undergoing head and neck radiotherapy.

People without their own teeth (artificial teeth and other oral appliances)

- Remove dentures prior to cleaning your mouth /using mouthwash
- Use a very soft (babies) toothbrush or foam swab for cleaning the mouth.
- If tooth brush cannot be tolerated prescribe antiseptic mouthwash (Chlorhexidine/ Oraldene) up to four times a day, after food. This can be diluted with equal parts of water – all solution must be used.
- Instruct the patient to follow these steps.
- Instruct 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

Infection

Mouth infections are common in advanced disease. Consider mouth swabbing to assist in diagnosis and prevent unnecessary medication. Measures to promote saliva should be considered due to healing properties of salvia.

Saliva Promotion / replacement

- Sugar free chewing gum
- Artificial salvia gel or spray as often as required.
- Foods that encourage chewing

Viral (Zoster or Herpes Simplex)

- Localised to lips topical Aciclovir cream five times a day for five to ten days.
- Mouth ulcers may require systemic Aciclovir - 200 mg 5x/day for seven days – 400 mg if immuno-suppressed.

Aphthous ulcers

- Consider a topical agent - local anaesthetic or non-steroidal anti-inflammatory gels.
- Tetracycline 250 mg TDS as 3min mouthwash)
- Spit out after, but this can be swallowed.
- Consider steroids topically – Hydrocortisone Lozenge (pellet) 2.5mg qds for 5 days. Lozenge allowed to dissolve at the site of the ulcer

Malignant Ulcer

- Characterised by 'foul odour' suggesting anaerobic infection. Systemic Metronidazole 400mg tds PO or 1g PR
- Topical gel Metronidazole 0.75% if unable to tolerate systemically. Intention to assist in odour management.

Candida

Characterised by white adherent patches, angular chelitis, redness, soreness of mouth and throat, treat with anti-fungals.

- Nystatin (100,000 units/ml) 2-5 ml qds 7 days – not of value prophylactically. Dentures must be removed each time, and cleaned/sterilised prior to replacing (see before).
- Where Nystatin is used in conjunction with Chlorhexidine it should be used at least 1 hour **after** Chlorhexidine used.
- Nystatin has low incidence of resistance, but is time and labour intensive in care situations and has compliance issues.

Please note - due to the increasing resistance of azole antifungal agents careful consideration prior to use is advocated.

- Fluconazole 50 mg – 100 mg od – 7 – 14 days. This can also be administered in suspension form .
- If resistant consider switch to Itraconazole 100mg od.

Painful mouth

Identify cause of pain and manage appropriately. Local analgesics are of use but have relatively short duration.

- Benzydamine spray or mouthwash (Difflam) up to 2 hourly (caution as solution is alcohol based).
- Choline Salicylate (Bonjela) 8.7% apply1-2 cm topically 3 hourly
- Morphine solutions- Sevredol is preferable to oramorph as it does not contain alcohol. 5-10 mg qds use as a mouthwash, can be swallowed- give specific direction.
- Artificial saliva gel or spray as often as required.
- Mechanical protection is of value in adhering to ulcer surface, but difficult to apply. Cytoprotective agents adhere to the ulcer base to create a barrier.

- Prescribed morphine in artificial saliva gel – refer to **specialist pharmacist** for advice and preparation

- Carmellose paste (Orabase).

- Sucralfate, paste/solution (used in inflammation/mucositis).

If pain persists manage systemically. Will require frequent reassessment dependant on mouth status, refer to chapter on pain control.

Dirty / Coated Mouth

The value of mouth hygiene cannot be understated. The use of toothbrush / swabs to clean teeth, tongue and gingival mucosa is the most effective tool.

Mouth swabs containing glycerine should not be used as glycerine can cause a rebound drying effect. Swabs and any product containing lemon or of a citrus nature will make oral ph more acidic and should NOT be used.

Promoting saliva is the most effective way of maintaining a clean and healthy mouth.

- Artificial saliva gel as often as required.

- Chewing gum.

Dry Mouth

This can be as a result of treatment and medication, and directly related to the effects of illness.

- Identify cause and treat where possible e.g. hypercalcaemia, review drug management exacerbating symptom

- Sip water/ rinse frequently – moisture will promote comfort

- Use sprays of water/ ice chips to refresh their mouth.

- Sugar free chewing gum – consider prophylactically when prescribing drugs that will dry mouth – opiates etc.

- Artificial saliva gel as often as required - If they wear dentures, apply to them before wearing. This can be used regularly, which can be especially useful prior to sleeping.

- Foods that encourage chewing

- Avoid alcohol, as this will increase mouth dryness

- Pilocarpine can be used for xerostomia related to radiotherapy/head and neck cancers and induced dry mouth. Starting at 5 mgs TDS for drug induced dry mouth. If there is no improvement after 2 days stop

  Note can cause side effects –see manufacturer's details.

Dying Person

Meticulous care should be offered as the person is able to tolerate. Where possible family/carer can be educated and included.

Technique Frequency/ Cleaning Ent

- **Combine below with 2 hourly cleaning with water (or patient's choice of liquid) as appropriate.**
- Application of artificial saliva gel to lips prior to mouth care
- Use of small soft toothbrush is the most effective tool
- If toothbrush not possible, tongue gingiva and mucosa should be cleaned using swab or gloved gauze /swabbed finger.
- Four hourly cleaning of teeth and mouth, or as frequently as the patient is able to tolerate, either with toothbrush and toothpaste or chlorhexidine /hexitidine solution
- RINSE MOUTH WELL with tap water if appropriate (use suction only if necessary).

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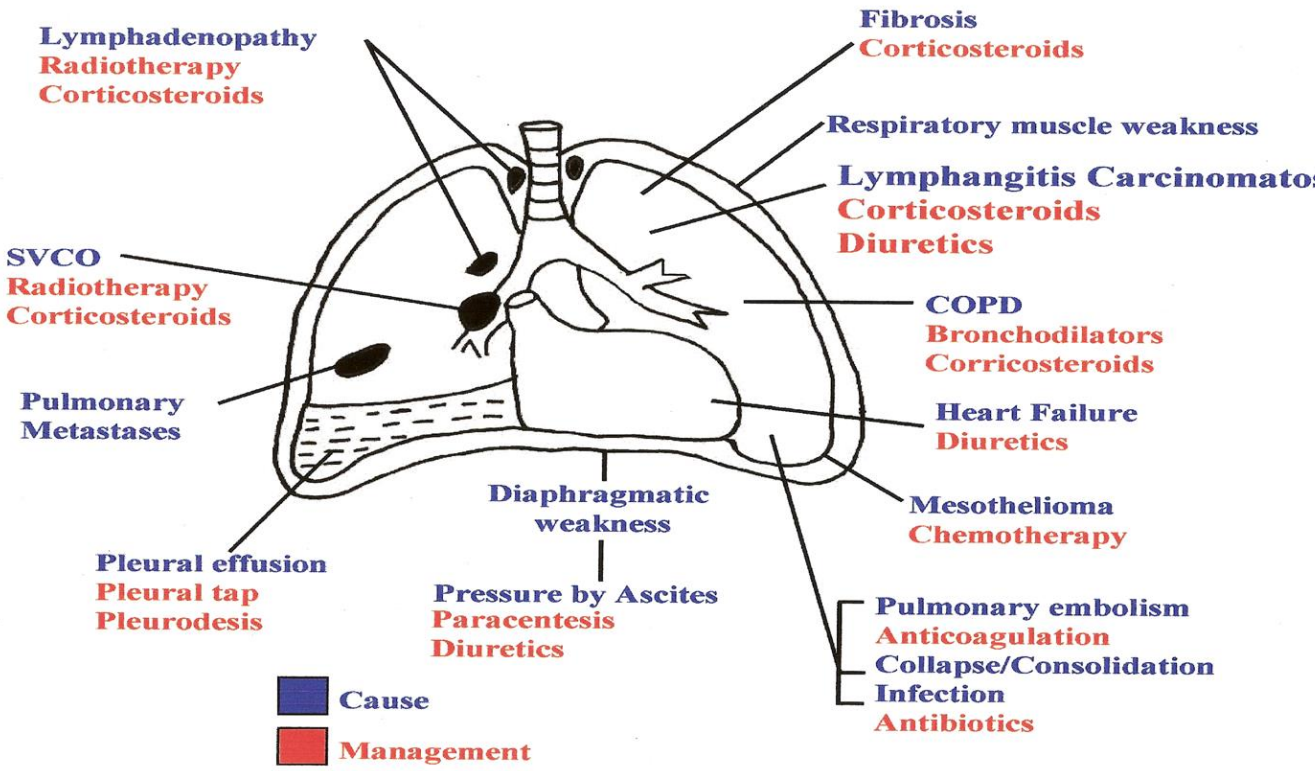
RESPIRATORY SYMPTOMS

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. Breathlessness 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.



Symptomatic Management

Non-Pharmacological Measures

Help patient to address their feelings and fears about the symptom.
Offer reassurance and a calming presence
Cool draft of air across the face e.g. use of a fan
Explain that becoming breathless in itself is not dangerous
Relaxation techniques
Breathing exercises/ re-training
Complementary therapies e.g. massage, reflexology
Advice on modifying activities of daily living
Advice to informal carers on promoting the above measures
Appropriate referral to members of the multi-professional team.

Bronchodilators

An element of reversible bronchoconstriction may be present.
Try:
Salbutamol 2.5mg-5mg 4 hourly via nebuliser
Ipratropium 250-500 micrograms 6-8 hourly via nebuliser

Saline may alleviate tenacious secretions via nebuliser

Corticosteroids

Reduction of peri-tumour oedema may improve breathlessness due to multiple lung metastases and in lymphangitis.
Try:
Dexamethasone 4-8 mg PO daily

Opioids

Morphine reduces inappropriate and excessive respiratory drive and reduces the ventilatory response to hypoxia and hypercapnia.
By slowing the respiratory rate, breathing becomes more efficient and reduces the sensation of breathlessness.

Try:
Morphine 2.5mg PO prn and titrate as for pain
For patients already on regular opioids a dose of the 4 hourly equivalent should be used.

Nebulised opioids
Controlled trials of nebulised opioids suggest they are no more effective than nebulised saline or systemically administered opioids.

Benzodiazepines
Useful where there is an element of anxiety or panic in a patient who is breathless.
Can be used effectively with opioids.

Try:

Lorazepam 500micrograms- 2mg sublingual prn
Diazepam 2-5mg PO bd-tds +/- prn
Midazolam 2.5-10mg SC prn

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 CO2.

Injudicious use of oxygen can lead to CO2 retention in COPD patients, dry airways, pressure sores from nasal cannulae and masks, restricted mobility and psychological dependency.

Oxygen is a drug and should be prescribed.

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.

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.

Oxygen Concentration

Nasal Cannulae	1L/min	24%
	2L/min	28%
Venti Mask	2L/min	24%
	4L/min	28%
	6L/min	35%

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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 of Cough

Treat underlying causes where appropriate.

Cause of cough	**Management**
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
Radiotherapy induced 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. hyoscine hydrobromide 400micrograms SC prn
- Antitussives (see below)

Dry Cough

Nebulised saline 2.5-5ml qds helps to reduce irritation of dry airways.

Antitussive Drugs

1 Simple linctus 5-10ml tds
2 Pholcodine 10ml tds
3 Codeine 30mg-60mg qds
4 Morphine 2.5-5mg 4 hourly PO or morphine SR 10mg 12 hourly PO or diamorphine 5-10mg SC over 24 hours via syringe driver.

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

HICCUPS

Hiccup is characterized 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 of Hiccup

Vagus Nerve Involvement

Gastic Distention
Gastritis/ Oesophageal reflux
Hepatomegaly
Ascites
Bowel obstruction
Pancreatitis

Phrenic Nerve Irritation

Mediastinal tumour
Diaphragmatic tumour involvement

CNS

Brain stem lesions
Intracranial tumours
Meningitis

Systemic

Renal failure
Addisons disease
Alcohol

Symptomatic Management

Non-pharmacological measures to produce pharyngeal stimulation
For example:

Swallowing dry bread or crushed ice
Forceful tongue traction

Drugs

Metoclopramide 10mg tds
Antiflatulent (e.g. simeticone or peppermint water) if caused by gastric distension
Chlorpromazine 10-50mg tds
Dexamethasone 4-8mg od
Haloperidol 1.5-3mg od- tds
Baclofen 5mg-10mg tds
Antacid and / or proton pump inhibitor for gastritis-induced hiccup.

OTHER COMMON SYMPTOMS

URINARY SYMPTOMS

Frequency and urgency

Treat reversible causes e.g. infection
Address exacerbating factors e.g. diuretics, hypercalcaemia, hyperglycaemia
Consider practical approaches e.g. proximity to toilet, availability of bottle, commode
Consider anticholinergics oxybutynin 2.5-5mg bd-qds
amitriptyline 10-50mg nocte

Hesitancy

Address reversible causes e.g. anticholinergics, constipation

Consider alpha-adrenoceptor antagonists

indoramin 20mg nocte-bd
tamsulosin 400micrograms od (may cause initial hypotension)

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.

Consider reversible 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.

Agitation and restlessness

Midazolam 2.5 - 10 mg SC stat
Midazolam 10 – 120 mg 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 12.5-25 mg stat dose SC and 12.5-150 mg over 24 hours via continuous subcutaneous infusion. Titrate dose according to response, usual max dose 300 mgs over 24 hours.

Haloperidol 2.5-5mg stat dose by SC injection or 5-10 mg over 24 hours via continuous subcutaneous infusion

Phenobarbitone 100-200mg stat (IM) then 600-1200mg over 24 hours via continuous subcutaneous infusion (under specialist palliative care supervision only)

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.

Aetiology

Fungating malignant wounds results from infiltration of the skin and it's 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 and Evaluation

Assessment, documentation and evaluation are key components of the clinical role in any aspect of patient care. A thorough assessment ensuring that the plan of care is 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.

The priorities for dressing choice should be:

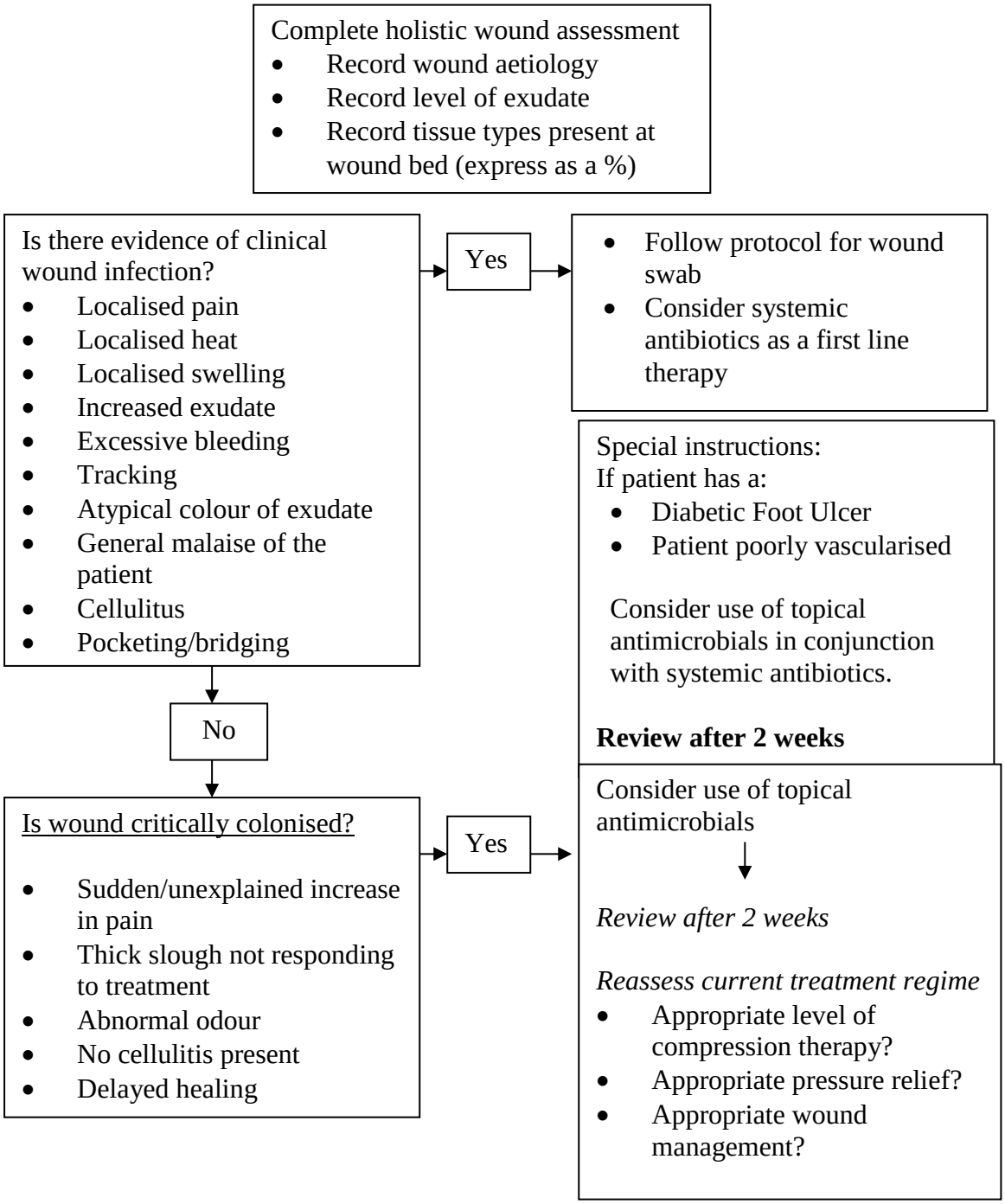
- Patient comfort and acceptability
- Minimising slough and necrotic tissue
- Minimising infection
- Containing odour
- Containing exudate

Dressing choice	**Rationale**
Hydrocolloid Semi-permeable film Foam Silicone dressing (i.e. Adaptive touch)	Absorb low/medium exudate Pain on dressing changes
Alginate Hydrofibre Foam	Absorb heavy exudate
Calcium alginate dressings	Haemostatic properties
Topical metronidozole	Deodorising properties
Dressings containing activated Charcoal	
Topical metronidozole Iodine based products	Antibacterial/antiseptic properties

Fungating wounds usually present with multiple symptoms:

Slough/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 of 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
Topical antibiotic
Charcoal dressings.

Systemic antibiotic
Metronidozole kills anaerobic bacteria responsible for odour production. However, treatment may cause side effects such as nausea, alcohol intolerance and neuropathy.

Topical antibiotic
Is recommended as an alternative to systemic antibiotic. Metronidozole 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 Metronidozole 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.

Topical Tranexamic Acid (solution or paste) can be used and applied to manage bleeding. This can be either using:

- IV solution of gauze swab soaked in 500mg/5ml ampoule of Tranexamic acid which is the held over the bleeding area (if aim is to stop bleeding or applied as a dressing if to manage bleeding).

  OR
- A paste of Tranexamic acid made by using the following according to the directions given:

3 x Tranexamic Acid tablets 500 mg tablets
2 mL sterile water for injection

Directions

Crush tablets with mortar and pestle/or pill crusher and triturate into a fine powder. The paste can then be prepared in a plastic pill cup. Add sterile water in small amounts (0.5 mL at a time) and mix until a thick paste is formed. Apply paste to desired site for 20-30 minutes and remove. Continue with normal dressing change.

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. A silicone dressing can be used as a 'primary dressing' where changes and removal are painful. If an adhesive dressing is required and the skin is fragile dressings such as kerrafoam gentle border, or mepilex border use silicone adhesive so there is less risk of trauma to the surrounding skin when removed.

- 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. Diamorphine 10mg or morphine sulphate 10mg can be mixed with a hydrogel 10ml 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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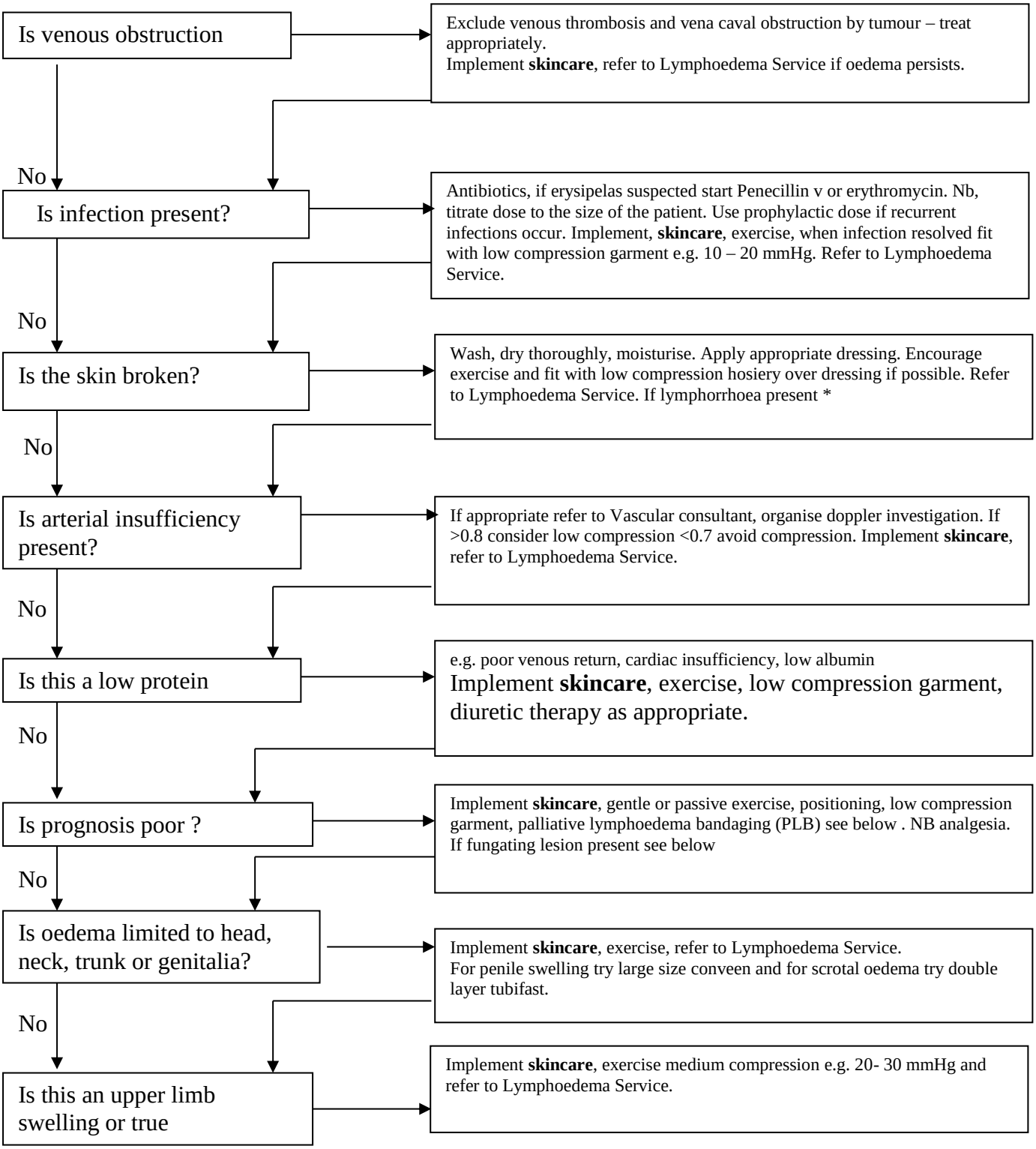
Care Pathway for the Management of Oedema



* If lymphorrhoea present: Wash, dry thoroughly, moisturise with emollient eg Eucerin 3%. Apply hydrocolloid modified carmellose dressing eg 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.

LYMPHOEDEMA

1 Refer to local specialist lymphoedema services

2 Advise patients to wash and moisturise the affected limb(s) daily and to carry out muscle pumping exercises.

3 Diuretics can be effective.

4 Steroids can be useful if the affected limb is tumour obstructed.

5 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.

6 For Lymphorrhoea – wash limb(s)
Moisturise
Apply hydrocolloid dressing e.g. Aquacel or Cutinova Cavity then absorbent pads
Refer to local lymphoedema service

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