Palliative Care

Pocketbook 5

Contents

Introduction

- This is a guide to the management of adult palliative care patients; it supersedes previous versions of the Palliative Care Pocketbook. The choice of medicine and dosage remains the responsibility of the prescribing clinician. The most up to date version of this Pocketbook can be found at https://www.nottsapc.nhs.uk/media/q3qmyzsf/palliative-care-pocketbook.pdf

- The dosage required by a patient will depend on a number of factors (e.g. age, weight, frailty, renal function) and these will need to be taken into account for each clinical situation

- For patients in the last days of life refer to Symptom Control and Anticipatory Prescribing (Last days of life) www.nottsapc.nhs.uk/media/b0mpsg1v/end_of_life_care_guidance.pdf

- For further information including specific advice on doses please refer to the latest edition of the Palliative Care Formulary (PCF), on-line PCF subscription through www.medicinescomplete.com or PANG http:/book.pallcare.info/

- When prescribing antibiotics towards the end of life consider the good practice principles found at www.sapg.scot/media/5446/gprs-for-use-of-antibiotic-towards-eol.pdf and local antibiotic guidelines at www.nottsapc.nhs.uk/guidelinesformularies/antimicrobial-guidelines/

For further advice please contact your local specialist palliative care centre:
Nottingham - Hayward House reception 0115 9627619 or professionals (only) 24h advice line 07595 285014

Mid/North Nottingham and Bassetlaw: Professionals advice line Call for Care 01623 781899 option 2.

Guidelines for the relief of cancer pain in adults

Give analgesia regularly, orally if possible and using the WHO pain ladder.

By the clock. By the mouth. By the ladder.

Important keys to success include:

- accurate evaluation of the pain, think total pain: physical, psychological, social and spiritual dimensions, through history, examination and appropriate investigation diagnose the cause of the pain and where possible correct the correctable.
- explanation to the patient and carers and discussing the treatment options with them
- personalise medicine and non-medicine approaches and the setting of realistic goals
- where there is moderate to severe cancer pain it may be more appropriate to move from step 1 non opioid to step 3 strong opioid missing the step 2 weak opioid stage
- regular reassessment of the pain
- referral to the specialist palliative care team if the pain is not being progressively relieved

Opioid prescribing

Morphine prescribing

- If patient has been on maximum dose weak opioid e.g. codeine 240mg/24hour this is equivalent to 24mg of morphine over 24h. Start with immediate release morphine 2.5mg-5mg 4 hourly and prn or 10-15mg m/r 12 hourly. Lower doses e.g.1.25-2.5mg may be required in the opioid-sensitive, elderly or frail patients and in those with renal impairment.
- Advice should be sought in those with moderate to severe renal impairment.
- Carefully titrate until effective analgesia achieved. When adjusting doses of morphine, prn use should be taken into account, increments should not exceed 33-50% every 24h. Immediate release 4 hourly regimens could be increased every 1-2 days; modified preparations titrated every 2-3 days.
- The dose for breakthrough pain is 1/10-1/6 of the total 24h dose. A prn dose is generally acceptable every 2 or 4 hours as required (up to 1 hourly in severe pain or in the last days of life) stating a maximum number of doses in 24h that should prompt review. However frequent use of prn doses i.e., ≥2 a day should also prompt review.
- 50% of patients experience nausea it is usually transient and improves in 5-7 days. Prescribe an anti-emetic, e.g. metoclopramide 10mg tds for prn use during the first week or prescribed regularly if the patient has had nausea with a weak opioid see page 11 for alternative anti-emetics.
- regular laxatives are necessary, e.g., senna

Alternative strong opioids

Morphine is the strong opioid of choice. Alternative opioids, e.g. oxycodone, transdermal fentanyl & transdermal buprenorphine are generally used when there are unacceptable adverse effects with morphine. Each has its own advantages and disadvantages. Seek guidance.

Opioid conversions

Dose conversions vary between patients and monitoring during conversion is required to avoid insufficient or excessive dosing. A dose reduction of 25-50% should be considered when switching. ≥50% reduction is advised at high doses (e.g. morphine ≥1g/24h or an equivalent dose of another opioid), in the elderly or frail, because of intolerable side effects e.g. delirium or after a recent rapid dose escalation of the first opioid. Prn doses can be used to make up the deficit until the new opioid is titrated to a satisfactory dose. See tables on pages 7-10.

Patches

- should not be started where there is acute pain, uncontrolled pain or in the last days of life due to time required to reach steady state
- when removed a significant amount of active medication remains ≥24hours due to reservoir in skin.
- increased temperature/heat sources will increase absorption.
- old patches must be removed before new ones applied
- it is not recommended to start a fentanyl patch in opioid-naïve
- dose should be titrated cautiously, see pages 9 and 10 for equivalent opioid strengths

Fentanyl or buprenorphine patches in the last days of life

- continue with patch and replace with new one when due
- give doses of SC morphine prn for breakthrough pain; see tables on pages 9-10.
- if ≥2 prns required/24h give morphine by CSCI starting with sum of breakthrough doses in preceding 24hours (up to a maximum of 50% of the existing regular opioid dose)
- recalculate the prn dose as necessary

Adjuvant analgesics

Consider if it is appropriate to add an NSAID, unless contraindicated, to your opioid before adding in adjuvants, cancer pain typically has inflammatory components.

- *neuropathic pain,* e.g. gabapentin, pregabalin, amitriptyline, duloxetine, corticosteroids,
- *skeletal muscle cramp,* e.g. benzodiazepines,
- *smooth muscle spasm/colic,* e.g. antimuscarinics, glyceryl trinitrate, calcium channel blockers
- *raised intracranial pressure,* e.g. corticosteroids
- *cancer related bone pain,* e.g. bisphosphonates

Additional measures

- radiotherapy, particularly for bone pain
- nerve blockade, particularly for localised pain or neuropathic pain
- non-medicine approaches, e.g. modification of lifestyle, aids for daily living, relaxation, distraction, addressing the psychological, social and spiritual dimensions of the 'total pain' experience.

Approximate dose conversions ratios: PO to PO

Conversion and Ratio	*Calculation*	*Example*
Codeine PO → Morphine PO 10:1	Divide 24h Codeine dose by 10	Codeine 240mg/24h PO → Morphine 24mg/24h PO
Dihydrocodeine PO → Morphine PO 10:1	Divide 24h Dihydrocodeine dose by 10	Dihydrocodeine 240mg/24h PO → Morphine 24mg/24h PO
Tramadol PO → Morphine PO 10:1	Divide 24h Tramadol dose by 10	Tramadol 400mg/24h PO → Morphine 40mg/24h PO
Morphine PO → Oxycodone PO 1.5:1	Divide 24h Morphine dose by 1.5 (decrease dose by 1/3)	Morphine 30mg/24h PO → Oxycodone 20mg/24h PO
or 2:1[a]	Divide 24h Morphine dose by 2	Morphine 30mg/24h PO → Oxycodone 15mg/24h PO

a. manufacturer's recommendations

Approximate dose conversions ratios: PO to SC

Conversion and Ratio	***Calculation***	***Example***
Morphine PO→ Alfentanil SC 30:1	Divide 24h Morphine by 30	Morphine 30mg/24h PO→ Alfentanil 1mg/24h SC
Morphine PO →Diamorphine SC 3:1	Divide 24h Morphine dose by 3	Morphine 30mg/24h PO → Diamorphine 10mg/24h SC
Morphine PO→Fentanyl SC 100:1[a]	Divide 24h Morphine in mg by 100	Morphine 30mg/24h PO→ Fentanyl 300microgram/24h SC
Morphine PO →Morphine SC 2:1	Divide 24h Morphine dose by 2	Morphine 30mg/24h PO → Morphine 15mg/24h SC
Oxycodone PO→Oxycodone SC 1.5:1	Divide 24h Oxycodone dose by 1.5 (decrease dose by 1/3)	Oxycodone 30mg/24h PO → Oxycodone 20mg/24h SC
or		
2:1[b]	Divide 24h Oxycodone dose by 2	Oxycodone 30mg/24h PO → Oxycodone 15mg/24h SC

a. initial manufacturer's recommendation 150:1 b manufacturer's recommendation

Fentanyl and Buprenorphine Transdermal (TD) patches

Patches are contraindicated in patients with acute pain which requires rapid titration; an analgesic effect may take >12h. Patients on patches will still require prn medication. See table below.

Comparative doses of morphine/diamorphine and TD fentanyl (based on PO morphine: TD fentanyl dose ratio 100:1)

Morphine PO		***Morphine SC***		***Diamorphine SC***		***Fentanyl patch (3 day patch)***
mg/24h	prn mg	mg/24h	prn mg	mg/24h	prn mg	microgram/h
30	5	15	2.5	10	1.5	12
60	10	30	5	20	2.5	25
90	15	45	7.5	30	5	37.5
120	20	60	10	40	5	50
180	30	90	15	60	10	75
240	40	120	20	80	15	100[a]

a. For combination of fentanyl patches, add the prn doses together, e.g., 100+75 microgram/h patches = 20 + 15mg morphine SC = 35mg Morphine SC, but can round up to 40mg or down to 30mg for convenience.

Comparative doses of morphine/diamorphine and TD buprenorphine (based on PO morphine: TD buprenorphine dose ratio 100:1)

Morphine PO		***Morphine SC***		***Diamorphine SC***		***Buprenorphine Patch***
mg/24h	prn mg	mg/24h	prn mg	mg/24h	prn mg	microgram/h
						7 day patch
12	2[a]	6	1	4	1	5
24	5[a]	12	2.5	8	1.5	10
36	6[a]	18	3	12	2	15
48	10	24	5	16	3	20
						3 day patch/4 day patch
84	15	42	7.5	28	5	35
126	20	63	10	42	7	52.5
168	30	84	15	56	10	70[b]

a. At these doses, prn codeine/dihydrocodeine (30-60mg) or tramadol (50mg) may suffice.
b. For combinations of patches, add the prn doses together, e.g., 70 + 52.5microgram/h patches = 15 + 10mg morphine SC = 25mg morphine SC but can round up to 30mg or down to 20mg for convenience.

Nausea and Vomiting

The choice of anti-emetics varies with the underlying cause so try to identify the cause. Consider a blood test if underlying biochemical derangement suspected.

Correct the correctable causes/exacerbating factors, new medicines, severe pain, cough, infection, hypercalcaemia, renal failure. Treatment of hypercalcaemia and infection may not be appropriate in a dying patient.

Prescribe the most appropriate anti-emetic regularly and prn. If already on effective oral anti-emetic this can be prescribed subcutaneously instead when required.

Step 1 Target Cause

Gastric stasis, gastritis, enlarged liver, functional bowel obstruction (peristaltic failure). Use prokinetics.

- metoclopramide PO 10mg tds - qds or CSCI 30-40mg/24h and 10mg PO/SC q2h usual maximum dose PO/CSCI 100mg/24h
- domperidone PO 10mg bd-tds.

Chemical causes e.g. morphine, hypercalcaemia, renal failure

- metoclopramide as above
- haloperidol PO/SC 0.5-1.5mg nocte and q2h prn
  CSCI 0.5-1.5mg/24h and 1mg SC q2h prn
  usual maximum dose 10mg/24h.

Raised intracranial pressure (with dexamethasone)/**Motion sickness**

- cyclizine (avoid with domperidone / metoclopramide) PO 50mg bd-tds and 50mg prn or CSCI 75-150mg/24hr and 25-50mg SC prn. Usual maximum daily dose 200mg PO/CSCI.

Step 2 Broad spectrum

- levomepromazine PO/SC starting dose 6.25mg bedtime and up to 2 hourly prn. Usual maximum dose 25mg/24h.

If the above is not effective contact your local specialist palliative care unit for advice. Dual anti-emetics may be advised e.g. levomepromazine and ondansetron

Inoperable Bowel Obstruction

Initial management
Resting GI tract may allow an obstruction to settle. Allow sips of fluid for mouth comfort and oral hydration. If not sufficient, consider discussing with specialist palliative care unit for IV/SC fluids/NG tube.

Ensure background pain is treated with opioids.

Consider dexamethasone 6.6mg SC once daily for 5-7 days with PPI e.g. lansoprazole 30mg orodispersible . If dexamethasone not beneficial after 5-7 days stop. If dexamethasone is beneficial titrate to the lowest effective dose.

In partial obstruction there may be some passage of flatus and faeces. When a laxative required use sodium docusate 100-200mg bd.

Ongoing symptom management
Several days of dose titration may be needed before optimum symptom relief.

Step 1 *if no colic probable functional bowel obstruction*

- metoclopramide 30-40mg/24h CSCI and 10mg SC q2h prn if beneficial titrate if necessary up to 100mg/24h

Step 2 *if colic probable mechanical bowel obstruction*
Stop prokinetic medicines

- hyoscine butylbromide (Buscopan) 60-120mg/24h CSCI and 20mg SC q1h prn. Reported maximum dose 300mg/24h
- if necessary add levomepromazine 6.25-12.5mg/24h CSCI and 6.25mg SC prn. Usual maximum dose 25mg/24h

Step 3
If above not effective contact your local palliative care unit for advice octreotide or alternative anti-emetics e.g. ondansetron may be advised.

Constipation

Prevention is better than cure!

Almost all patients prescribed an opioid will require a regular laxative

Consider a PR if bowels not opened ≥3 days or if patient reports rectal discomfort or has diarrhoea suggestive of faecal impaction with overflow.

Dose schedule for senna: if not constipated generally start 15mg at bedtime, if already constipated 15mg morning and bedtime. If no response titrate every 24-48h gradually to a maximum 30mg tds

Dose schedule for bisacodyl: if not constipated generally start 5mg at bedtime, if already constipated 10mg at bedtime. If no response titrate every 24-48h gradually to a maximum 20mg tds.

If maximum tolerated dose of senna/bisacodyl is ineffective, add a faecal softener, then titrate as necessary, e.g. macrogol 1 sachet each morning or lactulose 15ml od-bd

If stimulant laxative causes bowel colic, divide daily dose into smaller more frequent doses or change to a faecal softener.

During titration and subsequently: If ≥3 days since last bowel action/impaction and laxatives ineffective give suppositories e.g. bisacodyl 10mg and glycerol 4g together or micro-enema.

If these are ineffective, administer a phosphate enema and possibly repeat the next day.

If paraplegic, frail, debilitated:

May need to continue rectal measures on regular basis in addition to oral laxatives

Aim for regular evacuation of normally formed faeces every 1-3 days.

Breathlessness

Consider treatable causes such as infection, COPD, obstruction of bronchus or vena cava, pleural effusion, ascites, anaemia, cardiac failure, pulmonary embolism.

Drug treatment

- Opioids can be useful to reduce the sensation of breathlessness in those breathless at rest
- Benzodiazepines will be of benefit to patients with increased anxiety
- B2 agonists are helpful for co-existing asthma/COPD
- Oxygen is of benefit to hypoxic patients

Morphine

- Start with small doses 1.25-2.5mg PO prn up to bd then if necessary titrate up slowly up to 4hrly prn over the course of 1-2 weeks.
- The dose could be increased at weekly intervals if necessary by 30-50%. Generally small doses suffice 10-20mg/24h, rarely more. Usual maximum dose 30mg/24h. In COPD maximum dose <30mg/24h.
- If dose unchanged for 2 weeks consider switching to m/r.
- In patients taking morphine for pain a dose of 25-100% of the 4hrly analgesic dose (the breakthrough dose) may be needed depending on the severity of the breathlessness.

Benzodiazepines

- For anxiety. Reduce the dose if the patient becomes drowsy due to medicine accumulation.

  Diazepam

  1-2mg prn up to tds, increased if necessary to 15-20mg/24h in divided doses

  Lorazepam

  Starting dose 0.5-1mg SL/PO bd and prn. If necessary, increase to 2-4mg/24h

Terminal breathlessness

- No patient should die with distressing breathlessness
- Patients often fear struggling for breath in the terminal stages of illness. A positive approach with explanation and reassurance is important
- CSCI of an opioid with a sedative anxiolytic, e.g., morphine/diamorphine and midazolam can be helpful for terminal breathlessness e.g. morphine 5-10mg/24h and midazolam 10mg/24h with morphine 2.5mg SC prn and midazolam 2.5mg SC prn up to 1 hourly.

Agitation or confusion can be eased with addition of levomepromazine or haloperidol.

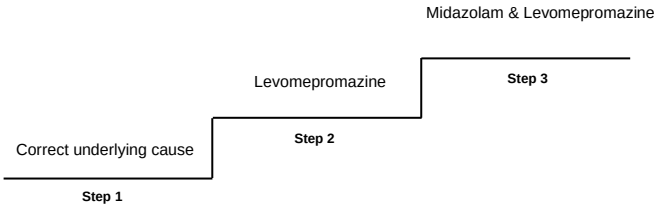
Pulmonary oedema

Consider furosemide 20-40mg SC up to 2 hourly prn, maximum dose in any one prn is 20mg (2ml) or start with the same CSCI dose as the current PO total daily dose. Beware of precipitating urinary retention. Should not be used in a CSCI with other medication due to risk of incompatibility.

Agitation and Delirium

Consider treatable causes such as pain, urinary retention or faecal impaction

Delirium in the final days of life will often need medication by a syringe pump .



Levomepromazine

Doses ≥25mg/24h cause drowsiness and postural hypotension

Stat dose 6.25-12.5mg SC in last days of life up to 1 hourly prn

Usual regular starting dose 12.5-25mg/24h in divided doses SC or CSCI and 6.25mg SC prn

If necessary guided by prn doses background dose may be titrated typically up to 50-100mg/24h however please seek advice at this stage.

Midazolam

Stat and prn usual starting dose 2.5-5mg SC up to 1 hourly prn

If necessary increase to 10mg SC up to 1 hourly prn seek advice if this is required.

Maintain with 10-60mg/24h CSCI

Consider adding an antipsychotic before increasing >30mg/24h

Haloperidol

An alternative to levomepromazine as less sedating

In imminently dying 1.5-5mg SC stat and q1h prn (in elderly 0.5-2.5mg). Maintenance 2.5-10mg/24h CSCI

Consider adding in midazolam if ≥5mg/24h haloperidol, if symptoms not controlled on 10mg/24h with midazolam consider changing haloperidol to levomepromazine

Respiratory Tract Secretions

Rattling noise due to secretions in hypopharynx

Non-medicine treatment

Not thought to distress the dying person and explanation of this to carers may help. Reposition semi-prone to encourage postural drainage; if the cause is pulmonary oedema (page 15) or gastric reflux position upright or semi-recumbent.

Medicine treatment

Salivary Cause

Give at first signs of rattle. It does not affect existing secretions but aims to prevent further secretions developing. Effective in half to two thirds of patients.

Hyoscine butylbromide (Buscopan)

20mg stat SC then 20-60mg/24h CSCI and 20mg SC up to every hour prn. If persisting symptoms after 24h double the dose in the CSCI up to120mg/24h, doses >180mg/24h have been used by specialists, seek advice.

Anticipatory Prescribing

Where it is recognised that patients may be in the last weeks to days of life it is recommended to make parenteral medication available that could manage common symptoms that may occur at the end of life at a point where the patient may not be able to swallow oral medication.

Below is an example of anticipatory medication if patient not taking regular opioid. However, doses need to be individualised to patient characteristics. The use of anticipatory medication should be monitored and where ≥2 doses are required in 24 hours the need for commencing a CSCI should be considered.

For the purposes of the examples the maximum dose has been written at six times the smaller dose. This would serve as an indicator to the administrator that if the maximum has been reached to seek medical advice so the dose and maximum dose in 24 hours can be adjusted as appropriate.

Ensure a prescription includes water for injection.

Full Last days of life guidance can be found at
www.nottsapc.nhs.uk/media/b0mpsg1v/end_of_life_care_guidance.pdf

Medicine	Indication	Dose	Minimal Interval	Maximum Dose in 24 Hours	Route
Morphine Sulphate	Pain	2.5mg-5mg	1 hr PRN	15mg (fifteen)	SC
Levomepromazine	Agitation/ Vomit	6.25mg-12.5mg	1 hr PRN	37.5mg	SC
Midazolam	Agitation	2.5mg-5mg	1 hr PRN	15mg (fifteen)	SC
Hyoscine Butylbromide	Secretions	20mg	1 hr PRN	120mg	SC
* IF TWO CONSECUTIVE DOSES ONE HOUR APART FAIL TO CONTROL SYMPTOMS SEEK MEDICAL ADVICE*					

Patients who are on regular opioids

Patients who usually take oral modified release morphine or oxycodone but are no longer able to swallow medication:

Calculate the subcutaneous equivalent daily dose using the conversion table on page 7 (e.g. total oral daily dose of morphine divided by 2 and add this to a CSCI).

- The SC PRN dose should be approximately 1/6 of 24hr CSCI dose
- Ideally start CSCI 2-4 hours before the next dose of modified release opioid would have been due
- PRN could be written up as one exact dose or a small one step range
- Ensure all people caring for patient know not to give any further modified release oral opioid.

Review the CSCI dose daily and consider increasing to include any additional PRN doses given. If the dose in the CSCI changes recalculate the PRN dose as necessary.

Dosing example:

Total daily dose MORPHINE orally (PO) is 60mg. The equivalent 24hr CSCI dose is 30mg. The PRN dose is 1/6 of this i.e. 5mg SC

N.B. The dose calculation is different for other opioids.

e.g. oral Morphine 60mg = oral oxycodone 30mg = subcutaneous oxycodone 15mg.

For opioid dose conversion see pages 6-9

Anticipatory Prescribing in Renal Impairment

Stage 4-5 Chronic Kidney Disease (eGFR <30ml/min)

For pain fentanyl is the opioid of choice(less renal excretion of parent drug and inactive metabolites) and may be recommended by specialist for patients with severe renal impairment. Alfentanil may be used where there is volume of medication issues. Subsequently they may be prescribed by Primary Care Prescribers.

Morphine and Oxycodone can be used with caution if the patient is not opioid toxic. Start with small doses e.g. 1-2mg oxycodone prn up to 1 hourly but titrate cautiously, monitoring for toxicity e.g. drowsiness, nausea and vomiting, hallucinations, confusion, respiratory depression, coma; these symptoms could have a slow onset. Adjust interval if required to 2 hourly or more.

Below is an example of starting doses for anticipatory medication if patient not taking regular opioid. However, doses need to be individualised to patient characteristics. Remember to prescribe water for injection. Full guidance on www.nottsapc.nhs.uk/media/1078/end_of_life_care_guidance.pdf

Medicine	Indication	Dose	Min. Interval	Maximum in 24 h	Route
Fentanyl	Pain Dyspnoea	12.5-25 microgram	1 hr PRN	75 microgram (seventy five)	SC
Levomepromazine	Vomit Agitation	6.25mg	1 hr PRN	37.5mg	SC
Midazolam	Agitation Dyspnoea	2.5mg	1 hr PRN	15mg (fifteen)	SC
Hyoscine Butylbromide	Secretions	20mg	1 hr PRN	120mg	SC
IF TWO CONSECUTIVE DOSES ONE HOUR APART FAIL TO CONTROL SYMPTOMS SEEK MEDICAL ADVICE					

Anticipatory Prescribing in Severe Hepatic Impairment

For pain fentanyl may be recommended by specialists, particularly where there is concurrent renal impairment (less renal excretion of parent drug and inactive metabolites). Subsequently it may be prescribed by Primary Care Prescribers.

Morphine can be used with caution if the patient is not opioid toxic e.g. 2.5mg SC q 1hr prn. but titrate cautiously, monitoring for toxicity see page 20 for symptoms and signs . Adjust interval if required to 2 hourly or more.

Medicine	Indication	Dose	Min. Interval	Maximum Dose in 24h	Route
Fentanyl	Pain Dyspnoea	12.5-25 microgram	1 hr PRN	75microgram (seventy-five)	SC
Haloperidol	Vomit Agitation	0.5-1mg	1 hr PRN	3mg	SC
Midazolam	Agitation Dyspnoea	1-2.5mg	1 hr PRN	6mg (six)	SC
Hyoscine Butylbromide	Secretions	20mg	1 hr PRN	120mg	SC
IF TWO CONSECUTIVE DOSES ONE HOUR APART FAIL TO CONTROL SYMPTOMS SEEK MEDICAL ADVICE					

Full guidance on
www.nottsapc.nhs.uk/media/1078/end_of_life_care_guidance.pdf

Other anticipatory considerations

In the last days of life where a patient is unable to swallow medication dexamethasone could be stopped and symptoms treated as they arise or converted to subcutaneous with an approximate conversion of 4mg dexamethasone PO = 3.3mg/ml or 3.8 mg/ml SC dexamethasone.

For diabetes management, refer to the national guidelines: End of Life Care (November 2021) | Diabetes UK.
/www.diabetes.org.uk/professionals/position-statements-reports/diagnosis-ongoing-management-monitoring/end-of-life-care

Palliative Care Emergencies

For all consider in context of prognosis

Spinal Cord Compression

10% of patients with spinal metastases will have spinal cord compression. Prognosis is poor with only 20% survival beyond a year.

Think back pain (at rest or on movement), radicular pain, limb weakness, numbness, bowel and bladder dysfunction.

Note symptoms and signs do not always neatly tie up neurologically.

For those known to have cancer speak immediately to on call oncology, for MRI.

Give patient 16mg od PO dexamethasone +/- PPI whilst awaiting admission.

For those not known to have cancer speak to on-call spinal surgical team.

Catastrophic Haemorrhage

20% of patients with advanced cancer will bleed.

Think head and neck tumours, fungating tumours, gynaecological, gastrointestinal and lung cancers,

Treatment: if at risk stop anticoagulants, anti-platelets.

Prepare the family for the possibility and what to do.

Stay with patient and stem or disguise bleeding with dark towels.

It may be a rapidly terminal event so medication may not be achievable, however midazolam e.g. midazolam buccal 10mg for distress, morphine for pain may be helpful.

Superior Vena Cava Obstruction

Can occur acutely or gradually due to primary or metastatic tumours.

Think breathlessness, headaches, distended neck or chest wall veins, facial neck, trunk or arm oedema, facial plethora, syncope or pre-syncope, stridor/dysphagia.

Discuss with on-call oncology about admission if appropriate.

Give 8mg dexamethasone bd (e.g. 8 am and midday) PO +/-PPI.

Tumour induced Hypercalcaemia

10% of cancer patients will develop hypercalcaemia.

20% survival beyond a year.

Think nausea, vomiting, anorexia, constipation, thirst, polyuria, pruritus, dehydration, drowsiness, confusion, seizures, psychosis.

Treatment: if ≥ 3 mmol/l or if above normal range >2.6 mmol/l and symptomatic discuss admission if appropriate for rehydration, bisphosphonate infusion.

Seizures

If patient unable to swallow usual anti-epileptics for seizure prevention start 20-30mg/24h midazolam CSCI. If on Levetiracetam this can be converted to CSCI seek advice.

Prepare carers in first aid actions and instructions on how to use:

- buccal midazolam 10mg if seizure does not stop within 5 min. Available as buccal midazolam 10mg/2ml oromucosal solution pre-filled oral syringe.
- Repeat once if needed after 10 minutes

Abbreviations

bd	twice per day
COPD	chronic obstructive pulmonary disease
CSCI	continuous subcutaneous infusion
IV	intravenous
min.	minimum
mg	milligram
mcg	microgram
od	every day
NG	naso-gastric
PANG	Palliative Care Adult Network Guidelines
PCF	Palliative Care Formulary
PO	by mouth
PPI	proton pump inhibitor
PR	per rectum
prn	as needed/required
qds	four times per day
SC	subcutaneous
SL	sublingual
TD	transdermal
tds	three times per day

References

Palliative Adult Network Guidelines (PANG) http://book.pallcare.info

Twycross, R., Wilcock, A. eds., (2016) Introducing Palliative Care 5th edn. London: Pharmaceutical Press.

Wilcock, A., Howard P, S Charlesworth eds., (2022) Palliative Care Formulary 8th edn. London: Pharmaceutical Press.

Integrated Care System

Nottingham & Nottinghamshire

Printing of this pocketbook was supported by:

John Eastwood Hospice