PAIN ASSESSMENT

Chronic malignant pain is a complex, multifactorial symptoms requiring adequate assessment and management. **'Total pain'** has physical, psychological, social and spiritual components and requires assessment and management of all components in order to gain control of the symptom. If simple measures do not appear to be effective, early referral to specialist palliative care services is advised for multiprofessional holistic assessment.

A single pain in advanced cancer or a chronic long term condition such as COPD or heart failure is rarely the case. An average of three- four different pains is common.

Pain may be due to: -

- disease process e.g. bone metastases
- treatment e.g. chemotherapy mucositis
- the symptom relief agents e.g. abdominal pain from opioid induced constipation
- unrelated causes e.g. rheumatoid arthritis

Assessment

- Pain **history** including onset, story of progression, site, radiation, character, severity, continuity, exacerbating factors, relieving factors, associated symptoms for each element of pain and each pain
- **Pattern recognition** of cancer pain syndromes e.g. hepatic pain, brachial plexopathy
- **Pictorial representation** of pain on body chart
- **Severity** of each pain using visual analogue scale or similar
- **Effect of pain** on activities of daily living e.g. sleep, eating, mobility, mood
- **Psychological** issues relating to pain e.g. significance of pain, depression
- Types, combinations and effect of any **analgesics** already tried along with route of administration, frequency, duration of use of each, unwanted effects, effectiveness and reason for discontinuation
- **Clinical examination** to elicit tenderness, muscle spasm, lesions, limitation of function, numbness, weakness, altered reflexes, allodynia (pain elicited by stimulus which would not normally result in pain e.g. light touch)
- **Investigations** if appropriate e.g. x-ray of acutely tender painful bone to exclude fracture
- **Differential diagnosis** of each pain to enable appropriate management pain – SEE 'TYPES OF PAIN' BELOW

PAIN MANAGEMENT

Management

- **Explanation** of cause to patient
- **Reassurance** that pain will be dealt with and taken seriously
- **Modification of the pathological process** e.g. radiotherapy to bone metastases
- **Raising pain threshold** e.g. ensure pain free sleep, reduction of anxiety
- **Regular non-opioids** as appropriate
- **Titration of opioids** for opioid sensitive pain e.g. visceral pain such as hepatic capsule pain (see guidelines)
- **Adjuvant therapy** e.g. non steroidals for bone pain, antiepileptics for nerve pain – SEE 'TYPES OF PAIN' BELOW
- **Immobilisation** to avoid movement of painful damaged area e.g. splint pathological fracture
- Attention to **psychological** aspects and interventions
- **Modification of lifestyle** to avoid painful activity
- Consideration of **physical interruption of pain pathways** e.g. nerve block

Follow up

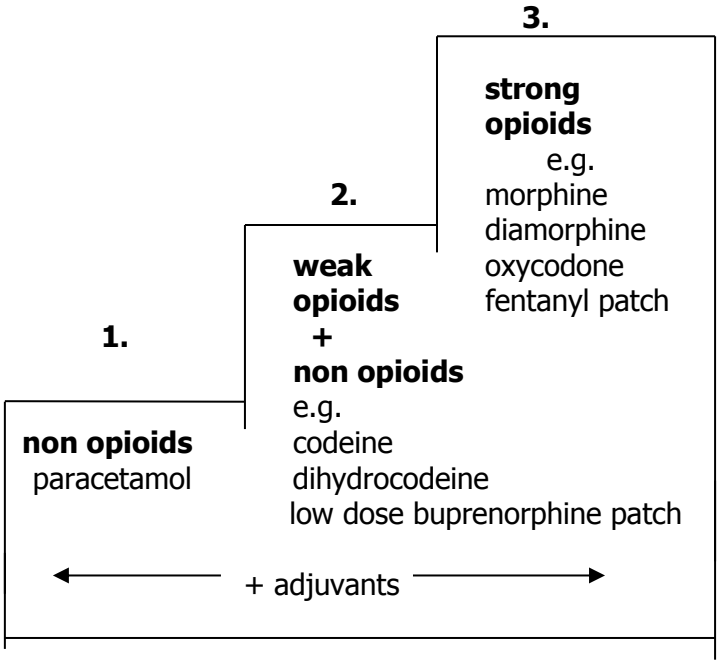
- Frequent **review**
- **Evaluation** of response
- Timely **readjustment of therapy**
- **Ask for help** if ineffective

MANAGEMENT OF SEVERE PAIN

- Establish whether pain is new or an exacerbation of previous pain
- If exacerbation – has pain control been lost by taking regular drugs incorrectly ?
- Diagnose cause of new pain – if unrelated to cancer e.g. angina – ask advice of appropriate team
- Give analgesia equal to usual breakthrough dose of opioid (ie $^{1}/_{12}^{th}$ to $^{1}/_{6}^{th}$ total daily dose of opioid) if already taking regular opioid
- If pain severe or vomiting associated give as breakthrough subcutaneous dose of opioid via route (to convert oral morphine dose to subcutaneous diamorphine dose divide by 3; to convert oral morphine dose to subcutaneous morphine divide by 2)
- Give up to hourly until pain begins to subside
- Manage cause e.g. stabilise/splint pathological fracture
- Ask advice of Specialist Palliative Care Team.

PRINCIPLES OF PAIN RELIEF IN PALLIATIVE CARE - OPIOIDS

1. Use of the **WHO analgesic ladder** as guidance in the administration of appropriate analgesia 'by mouth, by the clock and by the ladder' can result in the effective relief of 80% of cancer pain.



WHO analgesic ladder

2. Some pain may still be managed by regular **simple non-opioid analgesics,** (STEP 1) such as paracetamol 1 g six hourly.
3. **Weak opioids** (e.g. codeine/dihdrocodeine with non-opioid (STEP 2). Combinations may aid compliance but must contain an adequate dose of weak opioid e.g. co-codamol (30/500). Titrated up to maximum (codeine 240mg in 24 hours).
4. Pain which does not respond adequately to these measures is likely to require a **strong opioid** (STEP 3).
5. **Morphine** is still the opioid of choice for cancer pain. The dose is titrated up to the maximum tolerated against the pain until adequate analgesia is achieved.
6. Not all pain is completely opioid sensitive and other adjuvants and non-pharmacological approaches may be required e.g. **non steroidal anti-inflammatory drugs** particularly for bone pain, **antidepressants/anticonvulsants** for neuropathic pain, **non pharmacological** approaches for example transcutaneous nerve stimulation, acupuncture, nerve blocks.
7. **Alternative opioid** options are required for the few patients who cannot tolerate morphine due to severe side effects e.g. intolerable sedation, hallucinations, persistent pruritus, incapacitating nausea and vomiting. Advice on opioid substitution is available from the palliative care team if alternatives to morphine are considered necessary.

8. **Fentanyl patch** is only suitable for patients with chronic stable pain. Should not be used in patients who are opioid naive

STARTING OPIOIDS FOR PAIN IN PALLIATIVE CARE

- Holistic assessment, diagnosis and explanation precede the commencement of prescription
- Morphine is strong opioid of choice for cancer pain
- Morphine is prescribed by weight and not volume e.g. 10mg not 10 ml
- Morphine is administered orally where possible
- Patients are warned of possible side effects
- Prophylactic softening and stimulant laxatives are prescribed from first dose of opioid
- Review, evaluation and adjustment of treatment is frequent
- Dose reduction may be required in renal or hepatic impairment – seek advice

Starting dose

Immediate release liquid or tablet
Morphine sulphate
5-10 mg every 4 hours

PLUS

Same dose **up to hourly if required**
for breakthrough pain

PLUS

Stimulant and softening laxative
Prophylactically e.g. movicol +/- senna

NB Very frail, Elderly or opioid naïve patients may need to start at 2.5 mg dose (sometimes less)

Reassess within 24 hours and act upon findings:-

1. Pain uncontrolled (but responding to opioid)

Increase regular 4 hourly dose by 30-50%

PLUS

Same dose for breakthrough pain hourly
if required

2. Pain controlled

give total daily dose oral morphine required,
in two divided doses
as 12 hr slow release morphine (MST)
twice daily every 12 hours

PLUS

$^1/_{12} - {}^1/_6{}^{th}$ of total daily dose oral morphine as dose
for breakthrough pain hourly as required

Reassess pain and pain relief frequently

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Management of opioid side effects

1. Constipation – prevention

Start softening and stimulant laxative with first dose
Continue laxatives daily
Increase doses as required
Aim for daily, soft, formed stool

2. Nausea and vomiting

Reassure of temporary nature
Metoclopramide 10 mg tds for few days
Or
Haloperidol 1.5 mg on at 7 pm for few days
Or
Cyclizine 50 mg tds for a few days (watch for constipation)

3. Drowsiness

Exclude other cause
Reassure of temporary nature
Explain catnapping
Reduce dose if necessary

4. Dry mouth

Education
Regular mouthcare
Dietary advice

5. Intolerable effects

Persistent vomiting despite regular anti-emetics	change opioid
Mental clouding/confusion/delirium	change opioid
Hallucinations unresponsive to haloperidol	change opioid
Persistent unresponsive postural hypotension	change Opioid
Pruritis resistant to antihistamines	change opioid

- NOTE: **check renal function in case it is deteriorating and you are using an opioid that may be accumulating (*eg. Morphine, diamorphine – don't forget oxycodone has 10% renal elimination so can accumulate)***

7. Watch for myoclonus – consider change to different Opioid

AVOIDING PITFALLS IN MORPHINE PRESCRIBING

Prescribe by weight and not volume

- Write dose in mg not ml
- Many different strengths of morphine preparations are available
- Write micrograms in full not as mcg or µg
- Errors can be fatal

Prescribe by brand name, or qualify generic name with brand name

- Although generic prescribing is to be encouraged there are significant concerns regarding generic prescribing or morphine preparations
- Modified release preparations can be confused e.g. does morphine MR mean ?MXL = 24 hour slow release, ?MST = 12 hour slow release
- Morphine and oxycodone and fentanyl patches should be prescribed by brand name to avoid serious misunderstanding

Prescribe an adequate dose of morphine to be given for breakthrough pain

- Breakthrough dose is calculated as $^{1}/_{12}^{th}$ – $^{1}/_{6}^{th}$ of total 24 hour dose of morphine

Indicate minimum frequency of prn medication for breakthrough pain

- Prn alone can mean 'give every 5 minutes' or 'give every 5 hours'
- Immediate release morphine will begin to have effect within 20-30 minutes
- Therefore it is usually acceptable to repeat the dose after one hour if pain is still unchanged (EAPC 2001)
- Constant clinical review and evaluation of analgesia is essential to safely obtain pain relief

Prophylactic laxative are required with all opioid prescriptions

- Movicol +/- Senna is the softener/stimulant combination of choice in the absence of bowel obstruction.

ALTERNATIVE OPIOIDS

Alternative opioid options are required for the **few** patients who cannot tolerate morphine due to severe side effects, unrelieved by appropriate medication ie

- Intolerable sedation
- Hallucinations
- Persistent pruritis
- Incapacitating nausea and vomiting

Using two strong opioids together should generally be avoided.
Prophylactic laxatives still required.

Oxycodone

- Available as a slow release 12 hour tablet (oxycontin) and immediate release capsule/liquid (oxynorm)
- Can be used to titrate unstable pain
- Injectable form available (oxynorm)
- Oral preparation twice as potent as oral morphine
- Injectable oxycodone preparations twice as potent as oral oxycodone

Fentanyl

- 72 hour transdermal administration
- Useful for those unable to swallow
- Should **only** be used for **stable controlled** pain
- Conversion is not linear and a dosage conversion chart should be consulted
- Peak plasma concentration is not reached until 12-24 hours after the first patch is applied
- Fentanyl continues to act up to 24 hours after the last patch is removed
- Should not be removed or converted to diamorphine during dying phase (Fentanyl should be left in situ, changed every 72 hours as previously and supplemented by small dose of diamorphine subcutaneously (as stat injections or in CSCI) as required)

Alfentanil

- Opioid analgesic given by the subcutaneous route in palliative care.
- Short acting pain relief for patients in whom other subcutaneous opiates are not appropriate.
- Can be used in renal failure
- Can be given prn (up to hourly) or via CSCI
- Approximately ten times as potent as injectable diamorphine
- Specialist advice should be sought before prescribing

Buprenorphine

- For moderate pain unresponsive to non- opioids can commence *BuTrans* patch, initial dose 5 micrograms/hour patch for 7 days
- The analgesic action should not be evaluated for at least 72 hours after application in oreder to allow for gradual increase in plasma- buprenorphine concentrations
- For moderate to severe cancer pain or severe pain unresponsive to non- opioids prescribe *Transtec* patch. If opioid naïve the manufacturer recommends 35 micrograms per hour/ changed every 96 hours
- Well tolerated in renal and hepatic impairment

TYPES OF PAIN

BONE PAIN

nociceptive pain ie that which is due to tissue distortion or injury

Identifying pain due to bone metastases

- Typical bone pain is a deep ache; the patient may describe it as 'nagging'.
- Pain may be worse on movement (incident pain) eg walking with vertebral metastases or taking a breath in with rib metastases.
- Weight bearing may be painful when the hip or femur is affected.
- If metastases occur near a joint, pain may impair movement of that joint.
- There may be tenderness at the site of bone metastases.
- Muscle spasm around an affected area is common, particularly at the site of a joint.

Confirming bone metastases

- **X-ray** (required bone destruction to occur before visible on x-ray – may take several months)
- **Bone scan**
- **MRI scan**

Managing bone pain

> Drugs as per the analgesic ladder. If pain is mild, start with paracetamol regularly.

- Add a **non-steroidal anti-inflammatory** eg ibuprofen, if pain is not controlled with paracetamol and there are no contraindications. The addition of a proton pump inhibitor eg omeprazole may act as protection against oesophago-gastritis or ulceration. If one NSAID fails to work after about 5-7 days it is worth trying one from another class.
- **Regular weak opioids** in combination with paracetamol eg codeine or dihydrocodeine with paracetamol (co-codamol 30/500)
- **Morphine in combination with an NSAID and paracetamol** may be required for moderate to severe pain.
- **Bisphosphonates** – for widespread bone metastases particularly from breast cancer, myeloma and prostate cancer and multiple painful bone metastases. Bisphosphonates eg pamidronate or zoledronate may be helpful to reduce pain and the need for other analgesia. These work by restabilising affected bone. Both are given as a monthly IV infusion. Alternatives include oral ibandronic acid.

Managing bone pain CONT

> Other Therapies

- **Radiotherapy –** palliative radiotherapy can be very effective in reducing bone
  pain. 90% will notice a reduction in pain and half of these experience complete pain relief. After radiotherapy the patient may need less analgesia. If side effects occur the dose of an opiate should be reduced.

- **Physiotherapy** – walking aids, TENS, acupuncture, simple exercises.

- **Occupational Therapy** – advice on avoiding painful activities, equipment eg perching stools to avoid long periods of weight bearing.

FRACTURE - Sudden severe pain, even without trauma, should alert to possibility of fracture. Urgent clinical review required. Hospital referral may be appropriate depending upon clinical condition.

VISCERAL PAIN

Nociceptive pain ie associated with tissue distortion or damage

Visceral pain originates from an organ eg the gut, liver, pancreas.

Indentifying visceral pain

- Dull ache.
- Pain may be referred to a different site eg mid thoracic region from pancreatic cancer or shoulder tip from gallbladder.
- Pain may be poorly circumscribed eg liver pain may be felt more widely than in the right upper quadrant.
- The patient may be tender around the organ site.
- The organ may be enlarged and therefore palpable eg liver.
- There may be associated symptoms eg nausea.

Managing visceral pain

> Drugs

- Use the **analgesic ladder**. Start with regular simple analgesia and increase to opiates as necessary.

- **Steroids** eg dexamethasone and prednisolone can help reduce tumour oedema. This may help in situations eg cerebral oedema or liver capsule pain from an enlarged liver. If there are no contraindications prescribe dexamethasone 8 mg as a single morning dose with food. If ineffective after 5 days, stop. If effective reduce gradually (by 2 mg weekly) to minimum effective dose.

- **Non-steroidal anti-inflammatories** may help where there is evidence of infection or inflammation.

- Concomitant use of dexamethasone with NSAID increase risk of GI toxicity. Consider use of PPI

- Colic is visceral pain caused by muscle spasm in the gut – it responds best to **smooth muscle relaxants.** The drug of choice is hyoscine butylbromide (buscopan). This is poorly absorbed orally so may need to be given via a syringe driver.

> Physical therapies

- **Radiotherapy or chemotherapy** may relieve pain by reducing tumour bulk and tumour related oedema. Cerebral oedema can respond very well to radiotherapy.

- In some situations a **nerve block** may be appropriate if drug therapies fail. A celiac plexus block for pain from pancreatic cancer can sometimes be effective.

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NEUROPATHIC PAIN

Occurs as a result of actual damage to, or dysfunction of, nerves, peripherally or centrally

Characteristics of nerve injury pain (one or more may apply)

- Pain in the distribution of a particular nerve – a dermatomal distribution eg pain down one leg if a lumbar nerve is affected
- Pain in an area of reduced or absent sensation
- Allodynia – when a normal stimulus eg light touch is painful
- Patient describes the pain as shooting, burning, stinging or stabbing. There may also be an associated deep ache often described as toothache

Causes of neuropathic pain

- Tumour infiltration of nerves eg pelvic tumour invading the sciatic nerve
- Nerve compression eg spinal cord compression or nerve root compression
- Trauma
- Surgery eg phantom limb pain
- Radiotherapy or chemotherapy damage
- Non-cancer related eg stroke pain, diabetic peripheral neuropathy, trauma, post herpetic neuralgia

Managing neuropathic pain

> Drugs

- **Paracetamol** – regular paracetamol may be helpful.

- **Opioids** – neuropathic pain is often partially opioid responsive but opioids may not be sufficient to control pain alone.

- **Dexamethasone** – tumour pressure on a peripheral nerve can cause nerve compression pain and loss of function. Corticosteroids relieve pain within 48 hours, probably through reduction of oedema around tumour. If there are no contraindications prescribe dexamethasone 8 mg as a single morning dose with food. If ineffective after 5 days, stop. If effective reduce gradually (by 2 mg weekly) to minimum effective dose.
  In the emergency situation of spinal cord compression refer urgently for an oncology opinion and commence dexamethasone 16 mg PO daily.

- **Antidepressants** – Tricyclic antidepressants such as amitriptyline are mixed serotonin/noradrenaline re-uptake inhibitors. Start with 25 mg amitriptyline at 7 pm (10 mg in elderly/frail) and increase by 25 mg (10 mg in elderly) every 3 days to maximum 100 mg. A response is usually seen within one week but it may require 2-3 weeks. Warn the patient that this is an antidepressant but is being used for pain control. If no response, stop. If partial response add an anticonvulsant.

Managing neuropathic pain CONT

- **> Drugs**

- **Anticonvulsants** – Act by stabilising nerve and reduction of spontaneous electrical activity.

  Gabapentin – licensed for neuropathic pain. Palliative care patients may need a slower titration than BNF advises.
  Start with 300mg at night and increase by 300 mg every 3 days (ie 300 mg bd then 300 mg tds). Maximum 3.6 g daily in divided doses.
  If frail start at 100 mg bd and titrate by 100 mg increments.
  Dose reduction in renal impairment.

  Pregabalin – licensed for neuropathic pain and has more predicatble response clinically than gabapentin. Palliative care patients may need a slower titration than BNF advises.
  Start with 25 mg nocte on day 1, then 25 mg bd on day 2, then 50 mg bd day 2-7. Review and readjust dose. Maximum 600 mg daily in divided doses (BD)
  Dose reduction in renal impairment.

> Physical treatments

- **Epidural** - opiates and local anaesthetics can be given via epidural. Advantages may be that systemic side effects can be minimised and local anaesthetics can give good analgesia but patients may need to accept some loss of motor function and analgesia will only occur distal to the epidural site.

- **Nerve blocks** – the destruction of peripheral nerves with typically alcohol, phenol or cryotherapy. Common examples are intercostal nerves, brachial plexus or celiac plexus.

- **TENS** – Transcutaneous nerve stimulation

- **Acupuncture** – stimulation of acupuncture points (areas of high electrical conductivity (low resistance) compared with the surrounding skin) by the insertion of needles, pressure, laser or TENS. Whether the mechanism is neural, biochemical, electrical or biophysical, it appears that the effect is greater than placebo alone for some types of pain. Cancer pain itself is not usually modified well nor the effects sustained, but other pains caused by the effects of the disease may respond.

Further Reading

1. Twycross R. **Pain Relief in Advanced Cancer.** Churchill Livingstone. 1994
2. Twycross R. **Introducing Palliative Care.** Radcliffe Medical Press. 1995
   Note: Although 1 & 2 are old references these still contain good basic information on an approach to the subject although pain theory has progressed
3. Twycross R, Wilcock A. Howard P. **Palliative Care Formulary 5th Edition (PCF5)** Palliativedrugs.com Ltd 2014
4. Dickman Andrew. **Drugs in Palliative Care. 2nd Edition** Oxford Medical 2012
   Note: References 3 & 4 contain current guidance on the subject