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- [Reports Manager](#)
- [PLAB1-PLAB2 NOTES](#)
- [Administration](#)
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Resource view

Resource name	Oncology
Resource description	Oncology
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ONCOLOGY LECTURE NOTES 2013

TUMOUR MARKERS

1. Alpha feto protein hepatocellular carcinoma, neural tube defect, germ cell carcinoma
2. CA 125 = Ovarian cancer
3. CA 153 + Breast cancer
4. CA 19-9 pancreatic cancer
5. CEA or carcino-embryonic antigen = colorectal carcinoma
6. HCG (human chorionic gonadotrophin) = choriocarcinoma
7. Prostate specific antigen (PSA) Prostate cancer

COMPLICATIONS IN METASTATIC CARCINOMA

TUMOUR LYSIS SYNDROME

1. This is breakage of cancer cells in patients who are being treated with radiotherapy or chemotherapy. Breaking down of cancer cells releases urea, potassium and phosphates. Urea is so high that it leads to formation of renal stones or gout.

Investigation: 1. 24 hour urinary urate or serum uric acid if there is renal stones.

Otherwise you need to check urea and electrolytes

Treatment: rehydration with intravenous fluids

2. **Superior Vena Cava (SVC obstruction)** in metastasis:

This is compression of the SVC by the tumour leading to swelling of the face and arms. Patients have plethoric face. Also patient may present with shortness of breath as trachea may be compressed.

Investigation: Chest x-ray

Treatment: Dexamethasone orally in emergency

3. CEREBRAL METASTASIS:

Signs: signs of raised intracranial pressure

- a. Headache
- b. Vomiting
- c. Papilloedema
- d. With or without focal neurological deficits, fits or seizures

Investigation: CT scan head

Treatment: Dexamethasone or simply steroid.

4. SPINAL CORD COMPRESSION

This is usually due to metastasis to the spinal cord e.g from prostate or breast or lung cancer.

Symptoms: constipation, urinary symptoms and weakness or sensory loss in the lower limbs.

Investigation: MRI scan

Treatment: Dexamethasone in emergency, definitive treatment is decompression of spinal cord.

NB: Back pain does not mean spinal cord metastasis, it only suggests possible vertebral bone metastasis and the investigation of choice is nuclear medicine bone scan.

NB: BACK PAIN IS NOT A SIGN OF SPINAL CORD COMPRESSION, IT ONLY SUGGESTS POSSIBLE METASTASIS TO THE VERTEBRAL BUT AGAIN BACK PAIN IS COMMON IN PROSTATE CANCER AND MYELOMA

If there is back or bone pain, bone metastasis is more likely therefore investigate with bone scan.

5. HYPERCALCAEMIA

This is common in malignancy e.g breast cancer or prostate or lung cancer. Hypercalcaemia is common in squamous cell carcinoma.

Symptoms: thirst, polyuria, abdominal pain, constipation and confusion

Investigation: serum calcium.

Treatment: Rehydration or simply intravenous fluids, if not responding then biphosphanate e.g pamidronates.

SYMPTOMATIC TREATMENT IN TERMINALLY ILL PATIENT:

1. PAIN MANAGEMENT:

Use the pain ladder which contain 3 steps:

1 step: simple analgesia like paracetamol. Aspirin, NSAIDs
+/- adjuvant therapy

2 step: weak opiates: e.g codeine, tramadol, dihydrocodeine
+/- adjuvant therapy

3. Strong opiates: morphine, fentanyl patches, diamorphine, oxycodone.
+/- adjuvant therapy.

Long term analgesia is usually given orally e.g morphine orally — if not helping you keep increasing analgesia to high doses e.g 400-500mg of morphine —> if high oral doses not controlling the pain —> then use patient controlled analgesia (PCA) which is usually given subcutaneously. Or you can give as an infusion if patient has constant pain.

NB: sometimes patient controlled analgesia is called morphine pump or simply morphine subcutaneous.

Morphine intravenous bolus is used in acute situation and is not an appropriate route of administration of morphine in terminally ill patient.

YOU CAN START PAIN LADDER FROM ANYWHERE BUT ONCE YOU START MAKE SURE YOU FOLLOW IT.

ADJUVANT THERAPY: Is specific type of treatment for a specific type of pain.

For example:

- i. Nerve pain is better treated with steroid or anti-epileptic or anti-depressant like amitriptyline.
- ii. Bone pain secondary to metastasis can be treated with radiotherapy
- iii. Viscera pain is better treated with anti-spasmodics e.g mebeverine.

For example trigeminal neuralgia is treated with anti-epileptic like trigeminal neuralgia, post herpetic neuralgia is treated with anti-depressant like amitriptyline.

2. Intractable hiccough due to metastatic carcinoma use Haloperidol
3. Malodorous Fungating cancers use metronidazole
4. Severe bronchosecretions which is distressing to patient use hyoscine injection
5. Constipation secondary to opiate use stimulant laxatives e.g senna
6. Vomiting secondary to morphine use metoclopramide which is centrally acting anti-emetics
7. Severe anorexia may be treated with steroid.

8. Itching due to jaundice in metastasis is treated with cholestyramine

1. **GASTROSTOMY** may be used if there high risk of aspiration and there is need of permanent solution

1. **Stenting** can be used in certain situation like stricture of the oesophagus for symptomatic relief.

1. **Aspiration of pleural fluid or pleurodesis** may be used in recurrent pleural effusion if patient is terminally ill.

Starting patients on strong pain killers:

MORPHINE:

- Start with oral morphine 5-10mg every 4 hours orally, with equal amounts of break through dose as often as required (which means 5-10mg as required)
- If this is not effective, increase by 30-50% of the initial dose e.g. 5mg - 10mg - 20mg - 30mg - 40mg
- Once you have established the required dose of morphine, change to MST (morphine sulphate tablets) which is modified release morphine.

BASIC PRINCIPLES:

1. Morphine is usually prescribed twice a day i.e. 12 hourly every day once the dose is established.
2. Break through dose i.e. as required medication usually equals 1/6 of the total dose and is given every 4 hours.
3. Break through pain is the pain which come in between the doses of morphine, for example if you prescribe morphine twice a day at 08:00 and 22:00. If the patient experiences pain at 16:00. This is called break through pain.

To cater for break through pain, every time you prescribe morphine you have to prescribe as required dose for break through pain.

The break through dose is 1/6 of the total required dose in 24 hours.

When starting someone on morphine the regular dose of morphine equals the break through dose.

This is because the required amount of morphine in 24 hours is not yet known since you are just starting the patient on morphine.

The break through morphine is prescribed as an oral solution.

The common side effects of morphine are:

1. Drowsiness
2. Nausea and vomiting
3. Constipation
4. Dry mouth

If the oral route is not available try morphine/diamorphine IV/SC

If patient can not tolerate morphine/diamorphine due to side effects try oxycodone PO/IV/SC/PR.

Start oxycodone at an equivalent dose to the amount of morphine the patient was on.

e.g. If patient was on 100mg of morphine and is not tolerating it due to side effects, change it to oxycodone but find out what is the equivalent dose of oxycodone to the 100mg of morphine.

Oxycodone is as effective as morphine and is 2nd line opiate to morphine.

Oxynorm is an oral liquid form.

Morphine can be given as a liquid, tablets or IV form.

For break through pain, the liquid form of either morphine or oxycodone is prescribed.

Regular doses are prescribed either as tablets or IV or SC.

When just starting patient on morphine remember you start with oral solutions.

Fentanyl transdermal patches are used if it is not possible to take orally but can only be used if the required dose per 24 hours is known.

This is because the patches are changed every 72 hours and therefore it is not possible to change the dose in between.

Therefore it is important to use fentanyl patches in patients whose morphine requirement is established.

Treatment dose of morphine does not usually cause addiction.

Also, respiratory depression is also unlikely with the treatment dose of morphine.

There is no maximum doses of morphine or opiates, each individual is different.

Use pain ladder

If patient has severe pain, you can skip the first 2 steps and start with oral morphine straight away.

Once you start the patient on one step of the pain ladder and the pain is not controlled, move to the next step. Do not try another pain killer that is in the same step.

Do not skip steps i.e. if you started patient on paracetamol and pain is not controlled, start codeine and do not jump to morphine.

Do not use pain ladder for acute pain e.g. pain due to fractures.

Pain ladder is only for chronic pain management.

For acute pain choose analgesia according to severity of pain.

CANCER THERAPIES:

1. CHEMOTHERAPY:

These are cytotoxic drugs. They may be used as main treatment e.g. in haematological malignancies or may be used as an add on.

Side Effects:

- Vomiting (use metoclopramide)
- Alopecia
- Neutropenia
- Can cause damage to nerves

1. RADIOTHERAPY:

Can be used to cure the cancer or only to relieve the symptoms.

3. SYRINGE DRIVER:

This allows continuous subcutaneous infusion of drugs when oral medication is no longer feasible, and avoid repeated cannulation attempts.

Many drugs can be mixed together in the syringe.

e.g. midazolam for agitation
cyclizine for vomiting
hyoscine hydrobromide for respiratory secretions etc.

RISK FACTORS OF CANCER:

1. Familial adenomatosis polyposis is due to mutations in the APC genes. It is a risk factor for colorectal cancer.
2. Family history of colorectal cancer
3. Family history of prostate cancer
4. Hereditary non-polyposis colorectal cancer (HNPCC) predisposes to a colorectal cancer plus uterus, ovary, stomach, renal pelvis, small gut or pancreatic cancer.

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[View](#)

Resource start date 2013-06-30 06:11

Resource end date 2023-07-01 06:11

[Back](#)



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