

Side Effect Management

22nd October 2025

What are we covering?

- Preparing for treatment
- Common side effects
- Side effect management

Preparing for treatment



Gentle exercise



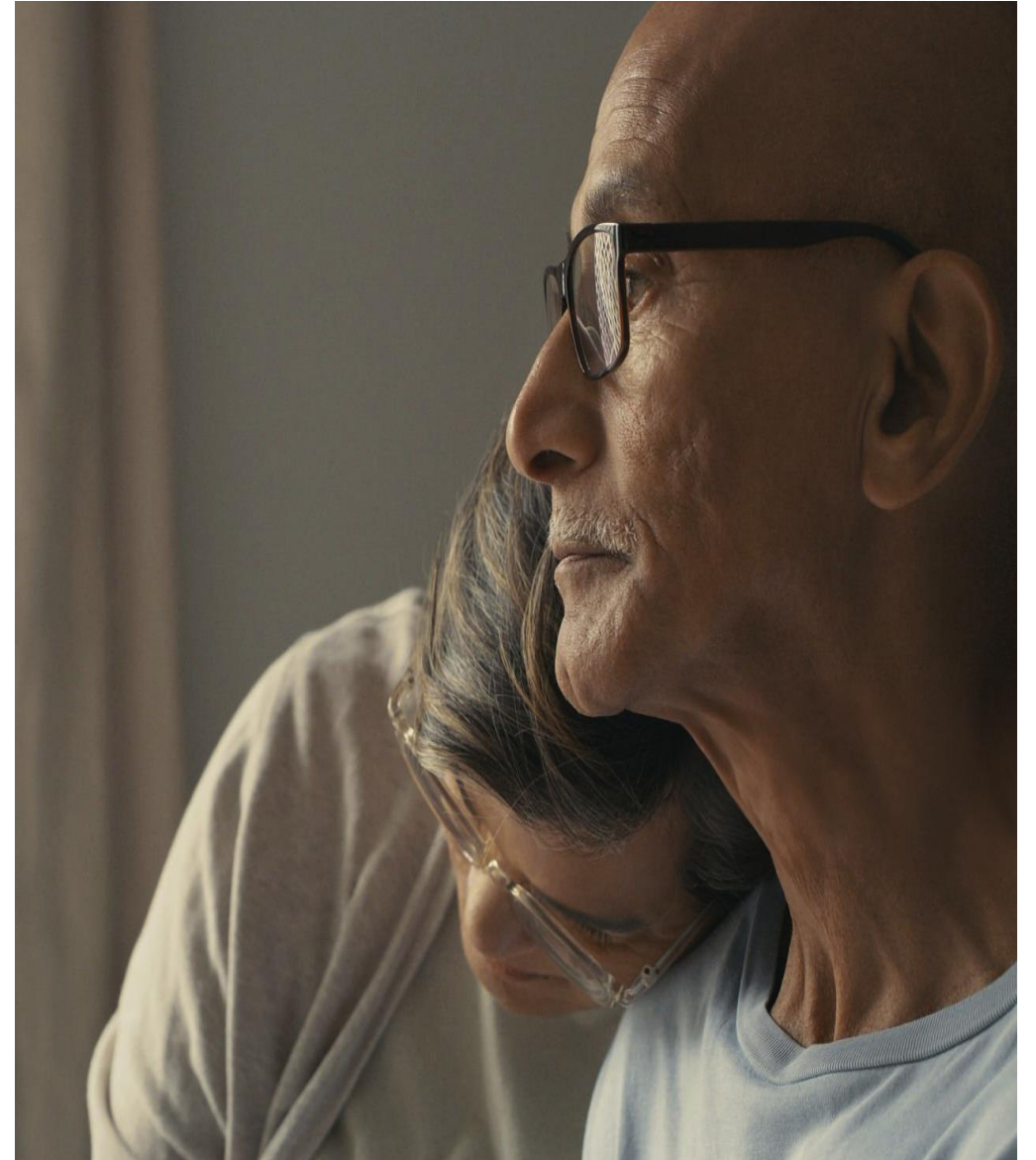
Emotional well-being



Diet and digestion



Treat any symptoms



Fitness and performance status

Performance status is assessed pretreatment

Grade 0 - normal activity levels , can carry out strenuous work /activity with no restriction

Grade 1 – some restrictions on strenuous activity but is able to carry out light work/ housework

Grade 2- unable to work but can manage own care and is ambulatory

Grade 3 – limited self care , sitting or in bed more than 50% waking hours

Grade 4 – bed or chair bound , needing assistance with self care

Treatment decisions are influenced by baseline performance status

PS 0-1 Fit enough for Triplet chemotherapy (FOLFIRINOX)

Ps 1 -fit enough for Gemcitabine / Abraxane

PS 1-2 fit enough for single agent Gemcitabine

Information

**P Pancreatic
CANCER UK**

Chemotherapy for pancreatic cancer

This fact sheet is for anyone who wants to know about treating pancreatic cancer with chemotherapy. It explains how chemotherapy is given, the different drugs used, the main side effects of chemotherapy and how these are managed.

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**P Pancreatic
CANCER UK**

Radiotherapy for pancreatic cancer

This fact sheet is for people with pancreatic cancer who are having radiotherapy to treat their cancer, or to manage pain. It explains what radiotherapy is, how it is used depending on your diagnosis, how it is given, and the possible side effects and ways to manage these.

Each hospital may do things slightly differently, so use this fact sheet as a general guide. If you have any questions, speak to your doctor, nurse or another member of your radiotherapy team.

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**P Pancreatic
CANCER UK**

FOLFIRINOX for pancreatic cancer

This fact sheet is for people with pancreatic cancer who are having FOLFIRINOX chemotherapy.

FOLFIRINOX is one of the main chemotherapy treatments for pancreatic cancer. It is made up of several different chemotherapy drugs.

Each hospital may do things slightly differently, and treatment will vary depending on your cancer. Speak to your doctor or nurse about your treatment.

You can speak to our specialist nurses on our confidential Support Line about any questions you have about chemotherapy. Call free on 0800 801 0707 or email nurse@pancreaticcancer.org.uk

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**P Pancreatic
CANCER UK**

Nab-paclitaxel (Abraxane®) for pancreatic cancer

This fact sheet is for people with pancreatic cancer who want to know more about the chemotherapy drug nab-paclitaxel.

Nab-paclitaxel is used with another chemotherapy drug called gemcitabine (Gemzar®). This may be an option for people with advanced pancreatic cancer.

Each hospital may do things slightly differently, and treatment will vary depending on your cancer. Speak to your doctor or nurse about your treatment.

You can speak to our specialist nurses on our confidential Support Line about any questions you have about chemotherapy. Call free on 0800 801 0707 or email nurse@pancreaticcancer.org.uk

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**P Pancreatic
CANCER UK**

Gemcitabine (Gemzar®) for pancreatic cancer

This fact sheet is for people with pancreatic cancer who want to know more about the chemotherapy drug gemcitabine.

Each hospital may do things slightly differently, and treatment will vary depending on your cancer. Speak to your doctor or nurse about your treatment.

You can speak to our specialist nurses on our confidential Support Line about any questions you have about chemotherapy. Call free on 0800 801 0707 or email nurse@pancreaticcancer.org.uk

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Side effects

- Side effects are unavoidable but often manageable
- Different drugs/treatments cause different side effects
- Important to recognize that **1 in 10** patients may be admitted to hospital with side effects from chemotherapy
- **<1 in 100** patients may die from life threatening toxicity from chemotherapy
- **Common side effects are 10-100 (>10%)**
- **Occasional side effects are 1-10 (<10%)**

https://ascopubs.org/doi/10.1200/JCO.2019.37.15_suppl.e14508

Consent forms for SACT (Systemic Anti-Cancer Therapy) | Cancer Research UK 2024

Common side effects

- **Nausea and vomiting**
- **Diarrhoea**
- **Fatigue**
- **Mucositis**
- Alopecia
- **Neutropenia**
- **Anaemia**
- **Risk of bleeding**
- Plantar Palmar Erythema
- Rash
- **Cold sensitive paresthesia /neuropathy**

How we assess & grade toxicities

The UK Oncology Nurses Society (UKONS) 24 Hour Triage Tool is a risk assessment tool that healthcare professionals use to prioritize the problems of patients calling 24-hour advice lines for oncology and haematology

How we assess & grade toxicities

The Common Terminology of Adverse Events (CTCAE) displays Grades 1 through 5 with unique clinical descriptions of severity for each AE based on this general guideline

- **Grade 1 Mild;** asymptomatic or mild symptoms; clinical or diagnostic observations only; intervention not indicated.
- **Grade 2 Moderate;** minimal, local or non-invasive intervention id; limiting age-appropriate instrumental ADL*.
- **Grade 3 Severe or medically significant but not immediately life-threatening;** hospitalization or prolongation of hospitalization indicated; disabling; limiting self care ADL**.
- **Grade 4 Life-threatening consequences;** urgent intervention indicated.
- **Grade 5 Death related to AE.**

**What is the impact of poorly controlled side effects?
Tick all that are relevant**

Emotional impact

Impacts ability to complete treatment plan

Impact on quality of life

Family impact

Social impact

Case Study: Jimmy

Jimmy – 56yo

BR PDAC – mass abutting vessels

Plan from MDT – neo-adj treatment, referred to oncology

Plan from oncology – 12c of FFX, mid treat scan to assess for response

What might be your thoughts here for Jimmy – what might you focus on in your clinic?

Case Study: Jimmy

Jimmy – 56yo

BR PDAC – mass abutting vessels

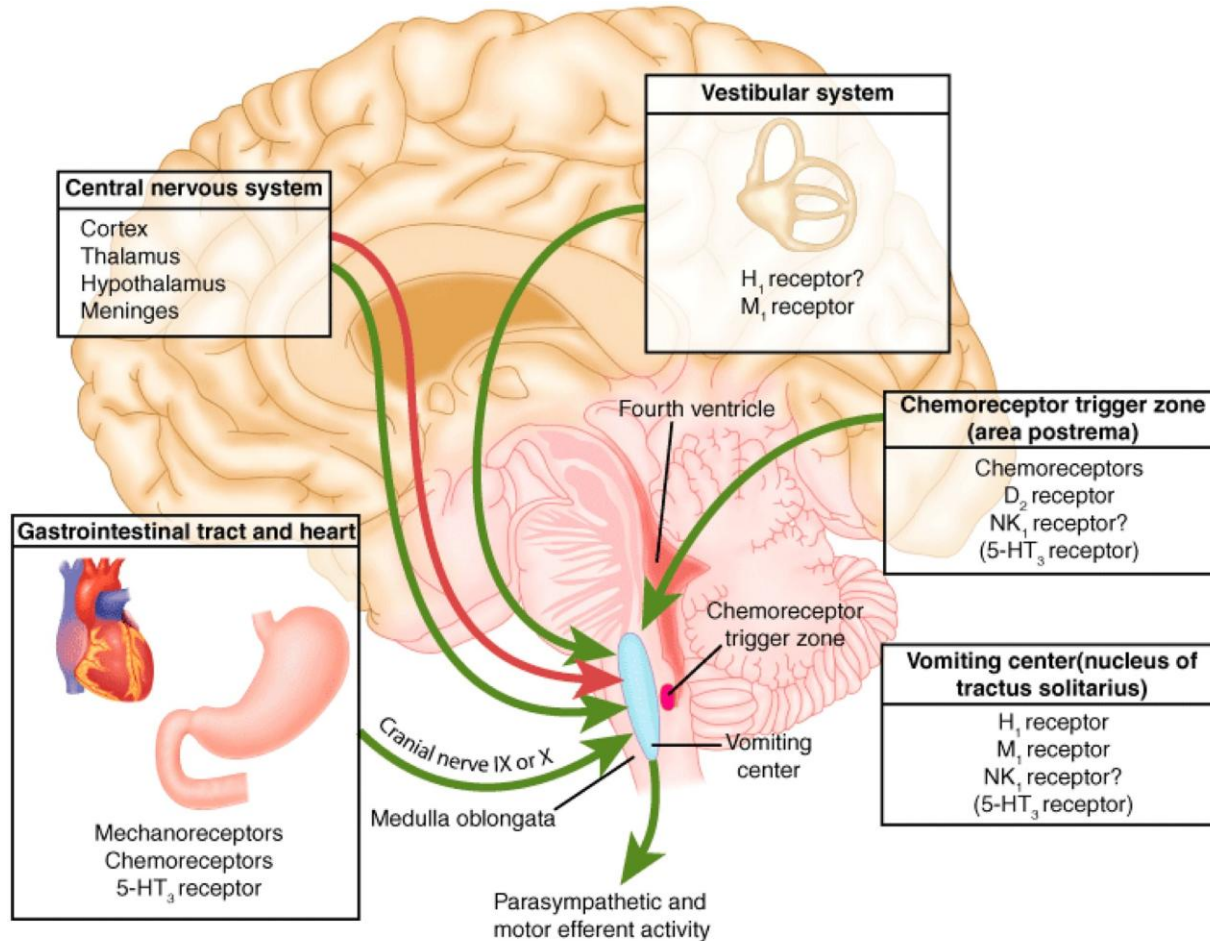
Plan 12 cycles of FFX, mid treat scan to assess for response

Day 4 call self report of feeling OK a small amount

background nausea

Post C1 review – **persistent nausea**, occasional **vomiting**,
diarrhoea not during infusion but from day 3-9 or 10.

Nausea and Vomiting



Source: Katzung BG, Masters SB, Trevor AJ: *Basic & Clinical Pharmacology*, 11th Edition: <http://www.accessmedicine.com>

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- Nausea and vomiting (N&V) is a protective reflex to toxins
- Aims to get rid of toxins and/or prevents further ingestion
- **Chemotherapy Trigger Zone** in the brain stimulated by the chemotherapy drugs and produces a response effect

Management - pharmacological approach

Medication Type	How does it work?	Generic Examples
Serotonin (5-HT₃) receptor antagonist	Blocks the brain and gut receptors for serotonin. Inhibits serotonin, substance that primarily triggers N, V during first day of therapy (Day 1)	ondansetron (oral, IV disintegrating tablet) granisetron (oral, IV, patch) palonosetron (<i>oral</i> , IV longer-acting lasting for 3-5 days) Additional 5-HT ₃ receptor antagonists: tropisetron
Neurokinin 1 (NK₁) receptor antagonist	Blocks NK ₁ receptor, and substance P, a substance in brain's vomiting center	aprepitant (oral), fosaprepitant (IV), netupitant or fosnetupitant (oral or IV used with palonosetron, respectively), rolapitant (oral)
Steroids (Corticosteroids)	Augments the effects of other antiemetics	dexamethasone (DEX) (oral, IV) methylprednisolone (oral, IV)
Centrally acting receptor antagonists like Dopamine receptor antagonist (DOP) and other mechanisms	Blocks a series of receptors that trigger or relay the nausea signal in the brain	prochlorperazine (oral, IV, S), promethazine (oral IV, S), metoclopramide (oral, IV, disintegrating tablet), olanzapine (OLZ), (oral, disintegrating tablet, IM)
Anti-anxiety agents	Benzodiazepines can reduce anxiety that can help ↓ anticipatory N, V vomiting	lorazepam (oral or IV) alprazolam (oral, liquid, disintegrating tablet)
* <u>oral</u> : by mouth; IV: by vein IM; by injection into the muscle; S: suppository; patch: skin patch 1.		

Management - holistic approach



Advise patient to stick to smaller more frequent meals



Eat blander foods



Consider nutritional intervention



Stay hydrated



Try natural remedies , ginger or peppermint



Relaxation therapy



Psychological support /Hypnosis



Acupuncture

Treatment related diarrhoea

Chemotherapy drugs can damage the rapidly dividing cells of the GI mucosa causing inflammation and a disruption in the fluid balance .

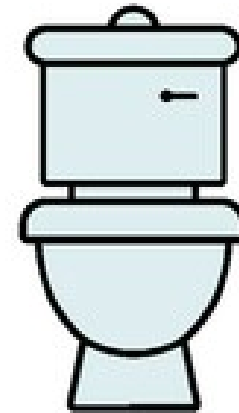
The absorption of fluids is decreased , followed by increased secretion of fluids and electrolytes in the stools.

Chemotherapy drugs that can cause diarrhoea include Capecitabine, **5-flourauoracil, Irinotecan, Oxaliplatin ,** gemcitabine.

Patient information and counselling is paramount
Encouraged to report issues

Radiotherapy can also cause diarrhoea

[Presentation of Agreed Documentation to the Network Governance Committee](#)



Management of treatment induced diarrhoea

- **Loperamide** – an OTC medication used to slow down the bowel movements
- **Codeine** can be used for its constipating effects
- **Atropine** for early diarrhoea if on Irinotecan
- **Infection must be ruled out** prior to administration of these drugs

Other considerations in PDAC?

- **Think other causes – SIBO, BAM; do people need a referral to gastro?**
- **PEI**
- **Infection**

Case Study: Jimmy

Phone call with Jimmy – between C3 and C4

- N&V improved
- Diarrhoea controlled
- Self reported weight as stable
- PS 1 – is working but is more tired
- Mouth is feeling a bit ‘gross’ tastes funny and dry

Question slide

**What are our considerations here?
Tick all that you think are relevant**

- Is the mouth sore?
- Are there any ulcers?
- Is there signs of oral thrush?
- Is this due to SE treatment or poorly controlled diabetes
- Impact on eating and drinking?
- All of the above

Oral side effects

Oral toxicities are common

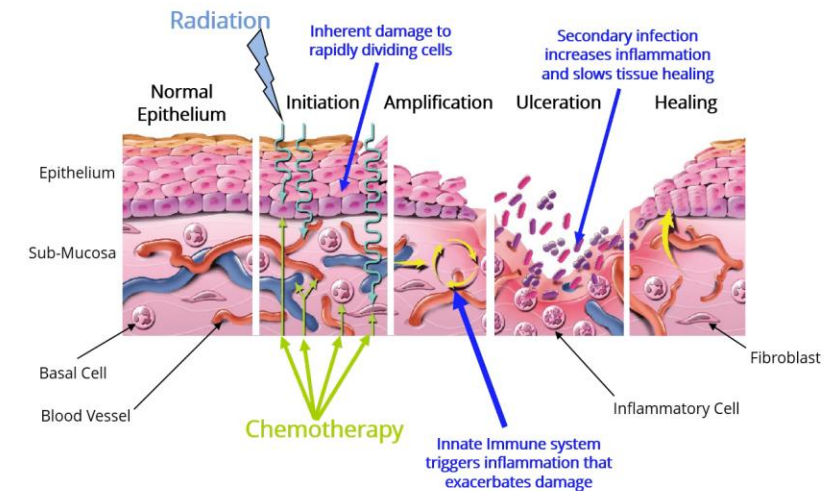
Chemo effects rapidly dividing cells such as the oral mucosa

Mucositis is characterised by erythema and ulceration of the mucosal lining of the GI tract.

Fungal infections (Oral thrush) is a common side effect of cancer treatments.

Chemo weakens the immune system this makes it more difficult for the body to fight off the Candida infection.

Pathobiology of Mucositis



Management

Patient and loved one's education

Using soft toothbrushes and alcohol-free mouthwashes

Gelclair is an effective barrier as well as treatment helping to alleviate pain

Increased analgesia – in severe cases opioids may be used

Lignocaine lollies

Sucralfate to coat the mouth

Eating bland soft foods

Maintaining adequate hydration

Treatment breaks

Other influencing factors – diabetes, antibiotics



Case Study: Jimmy

Clinic review cycle 4 - **oral thrush** is improving, to finish course of antifungals and continue with MW.

He is complaining of **Chemotherapy Induced Peripheral Neuropathy (CIPN)**

Treatment bloods indicate **low white cell count & neutrophils**

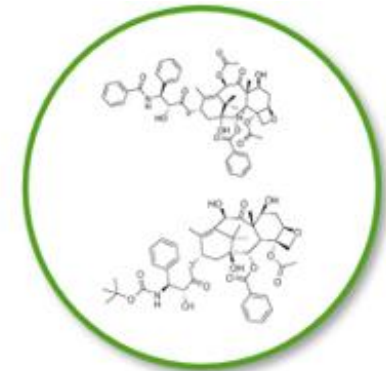
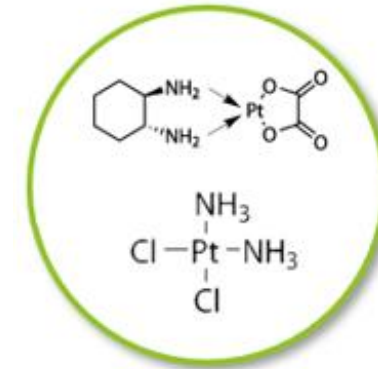
Chemotherapy induced peripheral neuropathy

Chemotherapy-induced neuropathy is a serious clinical problem

Two of the most prominent neurotoxic chemotherapy agents are **paclitaxel and oxaliplatin**
These are both used commonly in PDAC

Higher risk if people are having more than one type of drug or treatment that can cause nerve damage
Have had anti-cancer drugs in the past that can cause peripheral neuropathy
Have **diabetes**

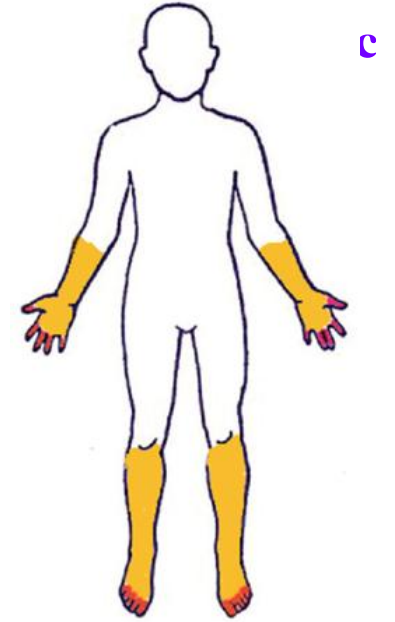
Platinum-based drugs
(cisplatin and oxaliplatin)



Taxanes
(paclitaxel and docetaxel)

Symptoms

- Tingling, pins and needles or numbness in the affected area
- Pain, which can be mild or more severe
- Muscle weakness that makes it hard to walk, climb stairs or do other tasks
- Feeling light-headed or dizzy when you sit up or stand up
- Difficulty doing up buttons on clothing or picking up small objects
- Problems with balance, walking and coordination.



Treatment

- Duloxetine is the only drug with sufficient evidence to support its use. 30mg OD for 7 days and titrate in 30mg increments max 120mg daily
- **Chemotherapy dose adjustment**
- Complementary therapy
- Physio and OT referral
- Capsaicin cream

Bone Marrow Depression

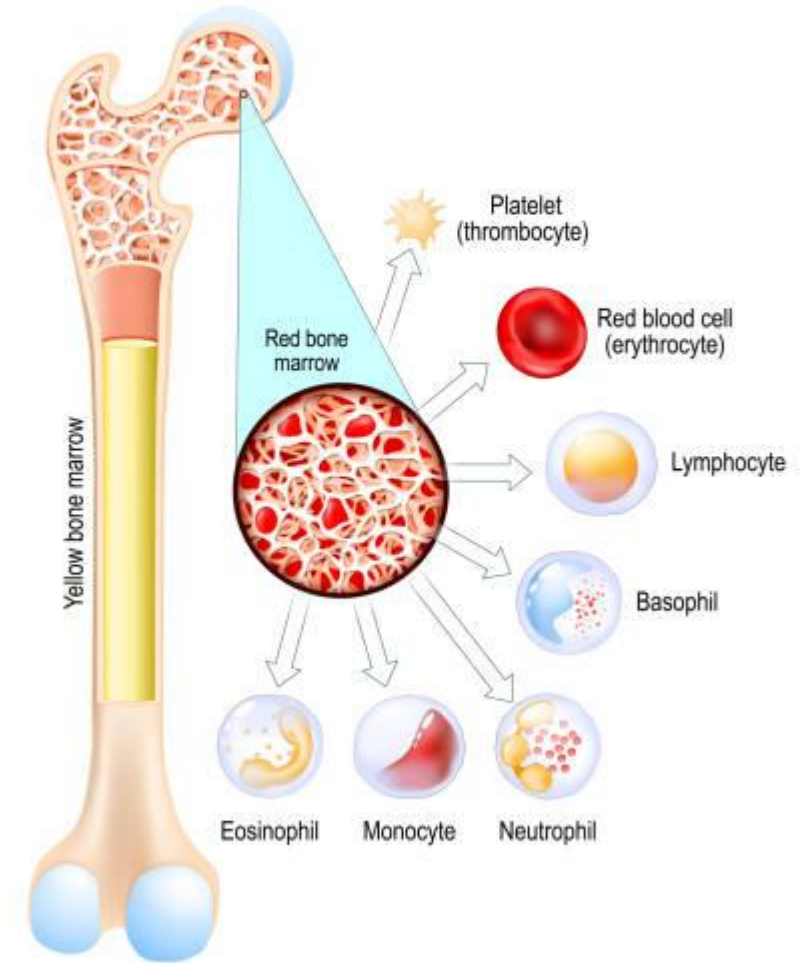
Chemotherapy-induced BMD is the most common dose-limiting and fatal complication of cancer treatment.

It is caused by destruction of proliferating cells that produce mature red and white blood cells and platelets in peripheral circulation.

As immature cells in the marrow are destroyed, pre-existing mature cells are eliminated, and **the nadir** of the individual's blood cell count is attained (7-14days)

At that time, cells are maturing and are ready to release into peripheral blood so within a short period the blood count has returned to near normal state, and the next dose of chemotherapy is administered

Bone marrow



<https://www.thieme-connect.com/products/ejournals/pdf/10.1055/s-0043-1770905.pdf>

https://media.istockphoto.com/id/2151690171/vector/yellow-bone-marrow-and-red-bone-marrow-blood-cells-develop.jpg?s=612x612&w=0&k=20&c=jHy9UVj5ZcttERoG6FfDUFFw6C_ZBuiXsTJ6Gkc79zl=

Symptoms of a low red blood cell count

- Fatigue
- Paleness of skin, lips and nail beds
- Increased heart rate
- Easy tiring with exertion
- Dizziness
- Shortness of breath

Symptoms of a low white blood cell count

- Fever and chills
- Rash
- Diarrhoea
- Signs of infection (anywhere in the body):
 - Swelling
 - Redness
 - An area that is warm to touch

Symptoms of a low platelet count

- Easy bruising
- Bleeding: nose bleeds, gums or mouth
- Tiny red spots on the skin
- Blood in the urine
- Dark or black bowel movements

The symptoms of bone marrow suppression may resemble other medical conditions or problems. Always consult your physician or nurse practitioner for a diagnosis.

Febrile neutropenia (FN) is a life-threatening complication of cancer chemotherapy and is considered a medical emergency.

National guidance has been issued by NICE and includes the following key recommendations

- Hospitals should have a neutropenic sepsis policy, which includes management pathway
- Patient information and emergency contact instructions
- Risk assessment and identification of high and low risk patients
- Training and education for HCP in the recognition and management of patients with suspected neutropenic sepsis

[Overview | Neutropenic sepsis: prevention and management in people with cancer | Guidance | NICE](#)

Case Study: Jimmy

Mid treatment scan shows some shrinkage but still **inoperable** to complete 12 cycles

End of treatment scan shows operable disease – Jimmy declines surgery. After much discussion planned for completion radiotherapy.

Fatigue currently an issue for Jimmy, other previous SE improved

Treatment related fatigue



One of the most underestimated side effects by HCP's



Usually happens in the first few day's post chemotherapy



Cumulative side effect , builds up as the treatments progress



Effects most of the patients normal Activities of Daily Living



Performance Status is assessed at baseline and before every cycle of chemotherapy/before radiotherapy

Pancreatic
Cancer
UK

Fatigue and pancreatic cancer
How to deal with tiredness



Managing fatigue

Medical

- Medication review – adjusting chemotherapy dose can improve fatigue
- Managing reversible causes of fatigue
- Using dexamethasone to boost energy levels and appetite
- Treat poorly controlled diabetes
- Treat PEI

Lifestyle adjustments

- Encourage patients to rest when needed
- Try and maintain a regular sleep pattern
- Encourage patients to engage in walking, swimming or light exercise
- Plan to do their activities at times of the day they have the most energy
- Diet and digestion

Case Study: Jimmy

Mid treatment scan shows some shrinkage but still **inoperable** to complete 12 cycles

End of treatment scan shows operable disease – Jimmy declines surgery. After much discussion planned for completion radiotherapy.

Fatigue currently an issue for Jimmy, other previous SE improved

What else might I be thinking about here?

Emotional impact of treatment

- Changing view of self
- Uncertainty
- Body image
- Relationship worries
- Financial worries
- Sex issues
- Social relationship changes
- Fear of side effects
- Symptoms of pancreatic cancer
- Preconceived idea about chemotherapy
- Fear of progression or recurrence
- Fear of dose reduction or stopping treatment
- Carer burden
- Depression and/or anxiety
- Spiritual crisis

Final Reflections

- **Communicate** clearly and sensitively
- Consider the **wider support** people might need & sign-post refer
- Support with any other added stressors
- Symptoms of PC need to be proactively managed **alongside** SE of treatment
- **Peer to peer support**
- Consider the **holistic elements**