

SIDE EFFECTS OF CHEMOTHERAPY

What we will cover today

01 What is chemotherapy

02 Background of chemotherapy in pancreatic cancer

03 Side effects; prevention, assessment, treatment and support

01

WHAT IS CHEMOTHERAPY?

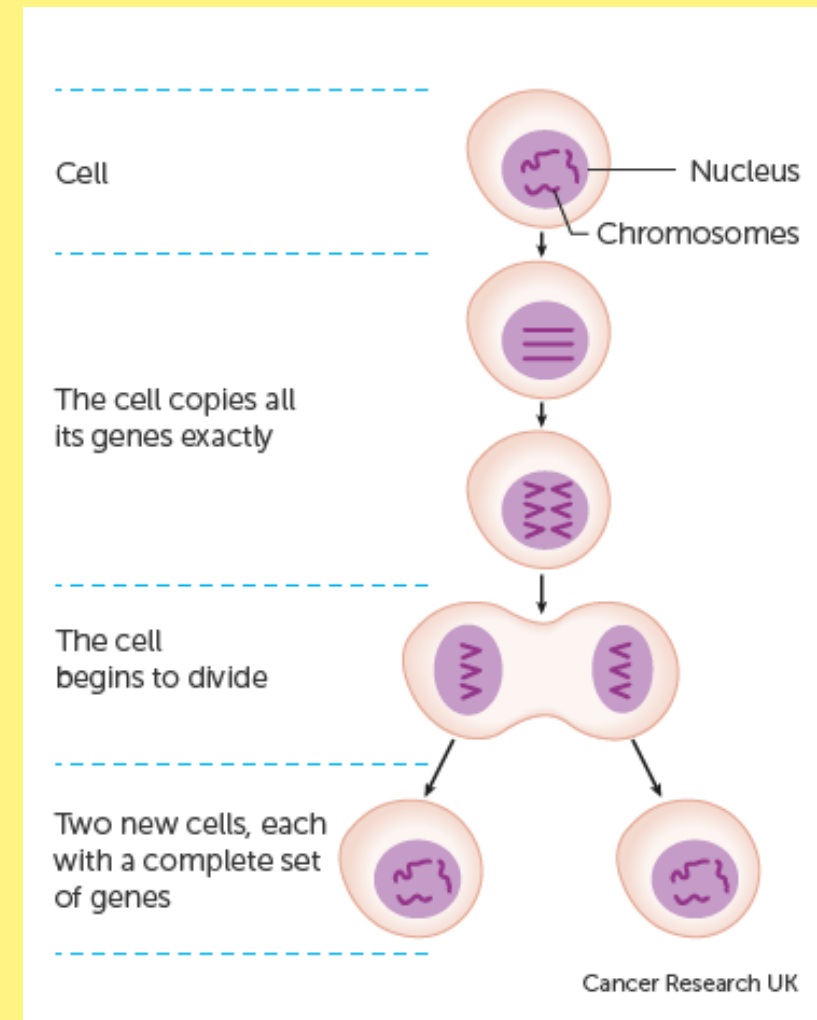


- Chemotherapy is a modality of cancer therapy that involves the administration of chemical agents to destroy cancer cells.
- The aim of chemotherapy is to cure where possible and to palliate where cure is impossible
- Chemotherapy is 'cytotoxic' meaning cell killing

How chemotherapy works

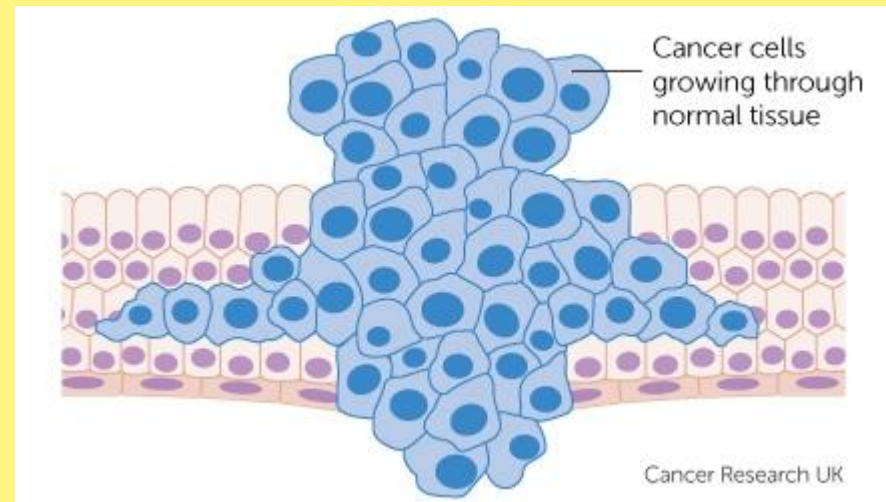
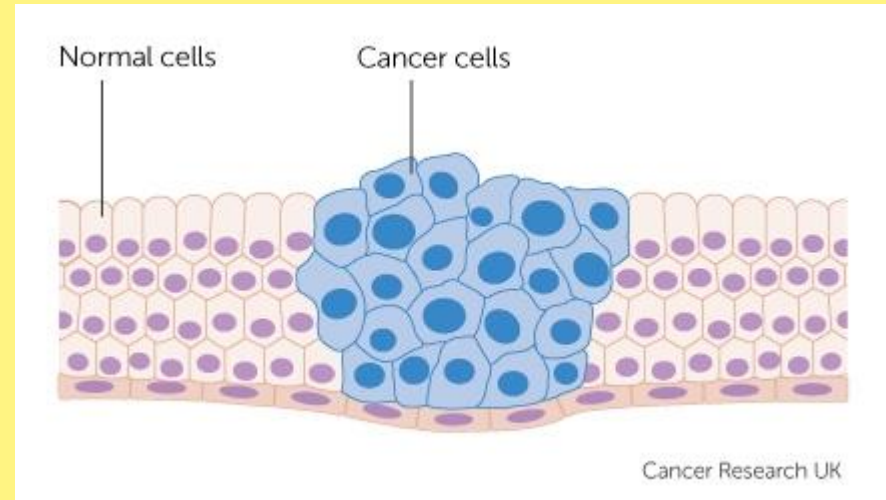
- Our bodies are made of billions of individual cells.
- In the centre of each living cell is the nucleus. The nucleus is the control centre of the cell. It contains chromosomes, which are made up of genes
- As 1 cell divides into 2 each cell will contain the same set of genes, these 2 will split to make 4 and so on and so forth.

<https://www.cancerresearchuk.org/about-cancer/treatment/chemotherapy/how-chemotherapy-works>



- In cancer an abnormal cell keeps dividing till there is a mass of the abnormal cells and this mass become a tumour
- Chemotherapy damages the genes inside the nucleus of the cells
- Cancer cells divide much more often than normal cells and this is why chemo is much more likely to kill them.

<https://www.cancerresearchuk.org/about-cancer/treatment/chemotherapy/how-chemotherapy-works>



02

**CHEMOTHERAPY &
PANCREATIC CANCER**

How we use chemotherapy in PDAC

- **Neo-ADJUVANT** (before surgery to try to shrink the cancer so that there's a better chance of removing it)
- **ADJUVANT** (after surgery to try to reduce the chances of the cancer coming back)
- **LOCALLY ADVANCED** (to control the growth of cancer, extend life and maintain quality of life)
- **PALLIATIVE** (to control the growth of the cancer, extend life and maintain quality of life)



This Photo by Unknown Author is licensed under [CC BY-SA-NC](https://creativecommons.org/licenses/by-sa/4.0/)

The results of this trial provided evidence for short-course chemotherapy before surgery in **borderline resectable** pancreatic ductal adenocarcinoma

Chemo-radio before surgery

Proportion of ppl having chemo +/- radiotherapy before whipple's surgery (2019-2021)

- **England (2019-21) 9%**
- **Wales (2022) 7%**

THE LANCET Gastroenterology & Hepatology

Articles

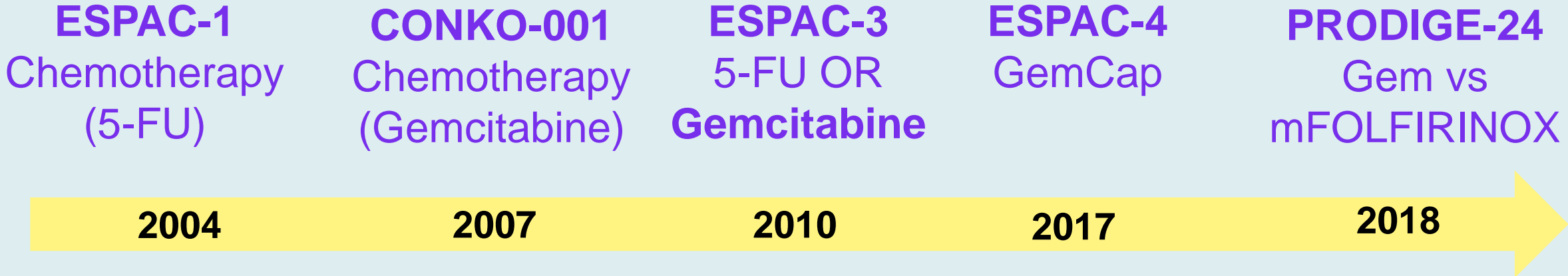
Immediate surgery compared with short-course neoadjuvant gemcitabine plus capecitabine, FOLFIRINOX, or chemoradiotherapy in patients with borderline resectable pancreatic cancer (ESPAC5): a four-arm, multicentre, randomised, phase 2 trial



Paula Ghaneh, Daniel Palmer, Silvia Cicconi, Richard Jackson, Christopher Michael Halloran, Charlotte Rawcliffe, Rajaram Sripadam, Somnath Mukherjee, Zahir Soonawalla, Jonathan Wadsley, Ahmed Al-Mukhtar, Euan Dickson, Janet Graham, Long Jiao, Harpreet S Wasan, Iain S Tait, Andreas Prchalas, Paul Ross, Juan W Valle, Derek A O'Reilly, Bilal Al-Sarireh, Sarah Gwynne, Irfan Ahmed, Kate Connolly, Kein-Long Yim, David Cunningham, Thomas Armstrong, Caroline Archer, Keith Roberts, Yuk Ting Ma, Christoph Springfield, Christine Tjaden, Thilo Hackert, Markus W Büchler, John P Neoptolemos, for the European Study Group for Pancreatic Cancer



Evolution of adjuvant chemotherapy



Chemo-radio after surgery
Proportion of ppl having chemo +/- radiotherapy before surgery

- **England (2019-21) 56%**
- **Wales (2022) 44%**

Neoptolemos et al NEJM 2004; Oettle et al JAMA 2007; Neoptolemos et al JAMA 2010; Neoptolemos et al Lancet 2017; Conroy, NEJM 2018

<https://www.natcan.org.uk/audits/pancreatic/>

Benefits of a palliative chemotherapy 1st line

| | Control arm | Experimental arm | Improvement between arms | What did we learn? |
|------------------------|-----------------------|--------------------|--------------------------|---------------------------------------|
| Gem | 5FU: (4.4 months) | 5.6 months | 1.2 months | Gemcitabine standard first line |
| Gem + Erlotinib | Gem: (5.91 months) | 6.2 months | 15 days | No clinically significant benefit |
| Gem + Cap | Gem: (6.2 months) | 7.1 months | 0.9 month | Moderate clinical benefit |
| FOLFIRIN OX | Gem: (6.8 months) | 11.1 months | 4.3 months | Best survival results |
| Gem + NabPac | Gem: (6.7 months) | 8.5 months | 1.8 months | No QoL data No comparison with FFX |

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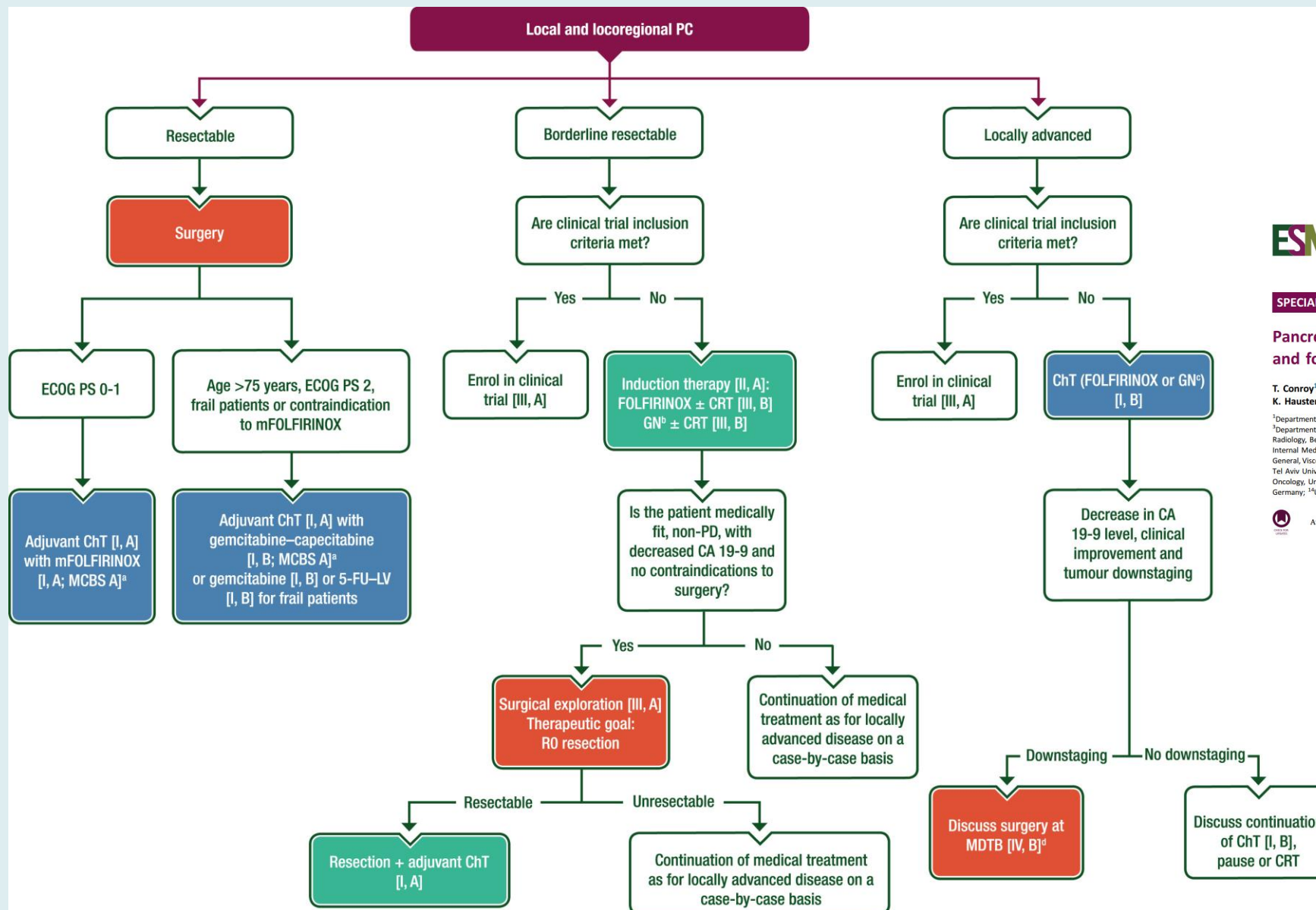
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In England (2020-2021):

- **8734 people had stage 4 pancreatic cancer. 25% of these people received some form of treatment for pancreatic cancer**

Benefits of a palliative chemotherapy 2nd line

| | Control arm | Experimental arm | Improvement between arms | What did we learn? |
|-----------------------------|----------------------|-------------------|--------------------------|--------------------------------------------------|
| FOLFOX | BSC: (2.3 months) | 4.8 months | 2.5 months | FOLFOX standard second line |
| FOLFOX | 5-FU: 3.3 months | 5.9 months | 2.6 months | FOLFOX standard second line |
| 5-FU + liposomal irinotecal | 5-FU: 4.2 months | 6.2 months | 1.3-2 month | 5-FU + liposomal irinotecan standard second line |



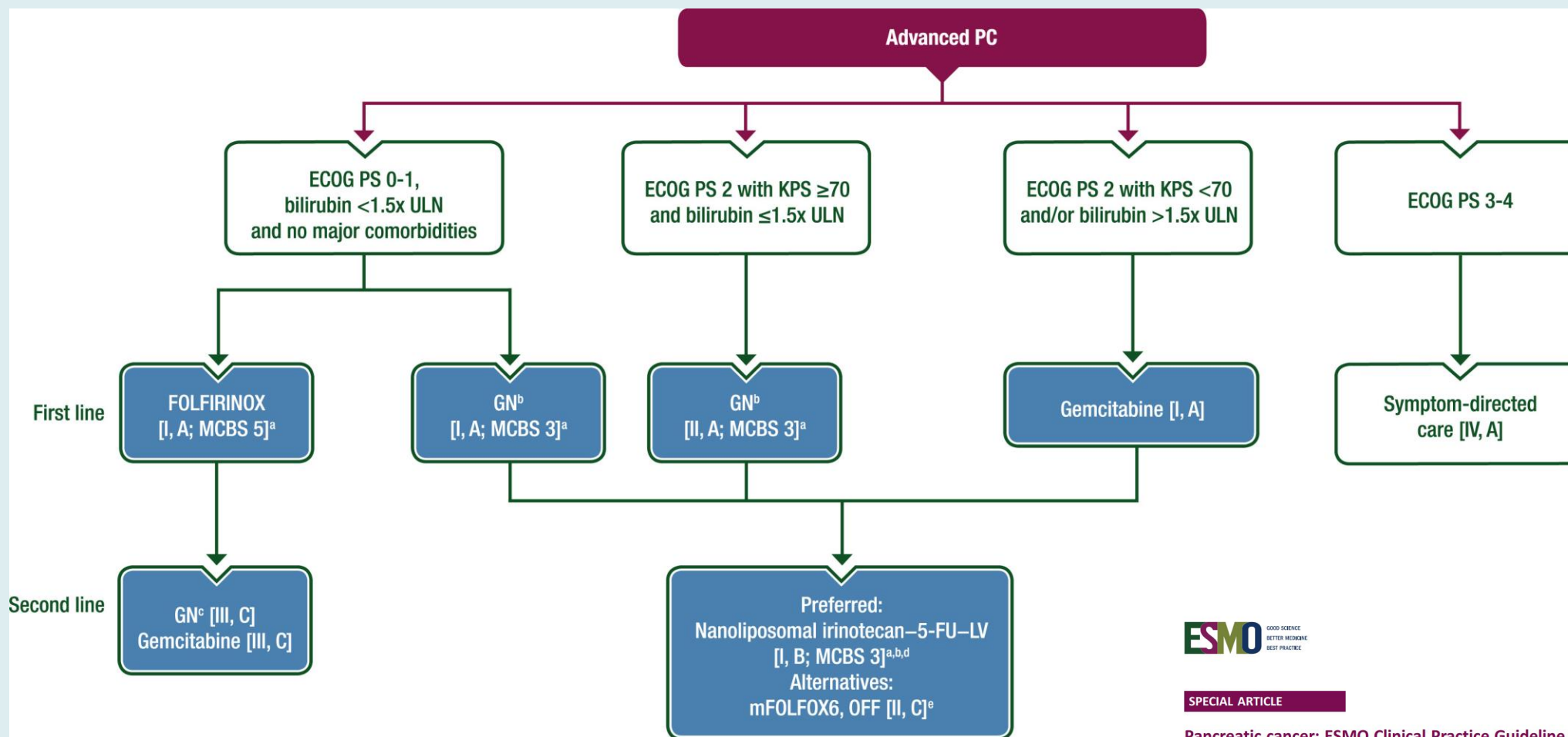
SPECIAL ARTICLE

Pancreatic cancer: ESMO Clinical Practice Guideline for diagnosis, treatment and follow-up[☆]

T. Conroy^{1,2}, P. Pfeiffer³, V. Vilgrain^{4,5}, A. Lamarca⁶, T. Seufferlein⁷, E. M. O'Reilly⁸, T. Hackert⁹, T. Golan¹⁰, G. Prager¹¹, K. Haustermans¹², A. Vogel¹³ & M. Ducreux¹⁴, on behalf of the ESMO Guidelines Committee^{*}

¹Department of Medical Oncology, Institut de Cancérologie de Lorraine, Vandœuvre-lès-Nancy; ²APEMAC, équipe MICS, Université de Lorraine, Nancy, France; ³Department of Oncology, Odense University Hospital, Odense, Denmark; ⁴Centre de Recherche sur l'Inflammation U 1149, Université Paris Cité, Paris; ⁵Department of Radiology, Beaugon Hospital, APHP Nord, Clichy, France; ⁶Department of Medical Oncology, The Christie NHS Foundation Trust, Manchester, UK; ⁷Department of Internal Medicine I, Ulm University Hospital, Ulm, Germany; ⁸Department of Medicine, Memorial Sloan Kettering Cancer Center, New York, USA; ⁹Department of General, Visceral and Thoracic Surgery, University Hospital Hamburg-Eppendorf, Hamburg, Germany; ¹⁰Gastrointestinal Unit, Oncology Institute, Sheba Medical Center, Tel Aviv University, Tel Aviv, Israel; ¹¹Department of Medicine I, Division of Oncology, Medical University of Vienna, Vienna, Austria; ¹²Department of Radiation Oncology, University Hospitals Leuven, Leuven, Belgium; ¹³Department of Gastroenterology, Hepatology and Endocrinology, Hannover Medical School, Hannover, Germany; ¹⁴Université Paris-Saclay, Gustave Roussy, Inserm Unité Dynamique des Cellules Tumorales, Villejuif, France

Available online 9 September 2023



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Fitness and performance status



Performance status is assessed pre chemotherapy and prior to each chemotherapy cycle

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 decision is 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

<https://ecog-acrin.org/resources/ecog-performance-status/>

[Risk Factors for Chemotherapy-Related Toxicity and Adverse Events in Elderly Thai Cancer Patients: A Prospective Study. - Abstract - Europe PMC](#)

03

SIDE EFFECTS PREVENTION, ASSESSMENT & TREAT

Preparing for treatment



Gentle exercise



Emotional well-being



Diet and digestion



Treat any symptoms

Chemotherapy for pancreatic cancer

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

Contents

- Key facts.....
- Chemotherapy for pancreatic cancer.....
- What are the advantages and disadvantages?.....
- How is chemotherapy given?.....
- Check-ups before and during treatment.....
- How does chemotherapy affect the blood?.....
- Other side effects of chemotherapy.....
- Diet and chemotherapy.....
- Diabetes and chemotherapy.....
- What happens after chemotherapy?.....
- Coping with chemotherapy.....
- Questions to ask your doctor or nurse.....
- Further information and support.....

This information is for people with the most common type of pancre pancreatic ductal adenocarcinoma. People with pancreatic neuroend cancers may have different chemotherapy. Neuroendocrine Cancer (information at: neuroendocrincancer.org.uk

FOLFIRINOX for pancreatic cancer

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

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

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

Contents

- What is FOLFIRINOX?.....
- How is FOLFIRINOX used?.....
- How is FOLFIRINOX given?.....
- What are the side effects of FOLFIRINOX?.....
- Further information and support.....



You can also speak to our specialist nurses on our confic Support Line. Call free on **0808 801 0707** or email nurse@pancreaticcancer.org.uk



Read more about the other chemotherapy drugs used fo pancreatic cancer on our website at: pancreaticcancer.org.uk/chemotherapydrugs

Read more about chemotherapy in our fact sheet: **Chemotherapy for pancreatic cancer** Or on our website at: pancreaticcancer.org.uk/chemothe

Order our publicatons online

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.

Contents

- How is nab-paclitaxel used?.....2
- How is nab-paclitaxel given?.....2
- What are the side effects of nab-paclitaxel?.....4
- Further information and support.....9



You can also speak to our specialist nurses on our confidential Support Line. Call free on **0808 801 0707** or email nurse@pancreaticcancer.org.uk

Side effects

- Side effects are unavoidable but often manageable
- Different drugs 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



https://www.ukons.org/site/assets/files/1134/triage_tool_poster.pdf

ONCOLOGY/HAEMATOLOGY TRIAGE TOOL, VERSION 2 (NOVEMBER 2014)

✓ 1 Amber = self care advice
 ⚠ 2 or more amber = escalate to red
 🚨 Red = attend for assessment as soon as possible

Patients may present with problems other than those listed below, these could be captured as 'other' on the top right checklist. Practitioners are advised to refer to the NCCICAD common toxicity criteria v3.0 to assess the severity of the problem and seek further clinical advice regarding management.

CAUTION! Please note patients who are receiving or have received **IMMUNOTHERAPY** may present with serious related problems at anytime during treatment or up to 12 months afterwards. If you are unsure about the patient's progress, the outcome and follow-up triage symptoms assessment.

| ↓ Toxicity/Symptom ↓ | 0 | 1 | 2 | 3 | 4 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------|
| Fever - Is there any fever associated with Systemic Anti-Cancer Treatment (SACT) within the last 8 weeks or immunosuppression? | None | None | TEMPERATURE 38.3°C OR ABOVE OR BELOW 36.2°C OR GENUINELY UNWELL - URGENT assessment and medical review. Follow sepsis pathway. ALERT - patients with fever from oncology or steroids or who may be debilitated may not present with an abnormal temperature but may still have an infection and be at risk of sepsis in 48 hours. | | |
| Action: URGENT ASSESS for medical assessment. 999 OR if influential SACT in place arrange for assessment. | | | | | |
| Throat pain Oral and Intra-nasal Systemic Anti-Cancer Treatment and/or reduced by surgery or chemotherapy. | None | None | Action: URGENT ASSESS for medical assessment. 999 OR if influential SACT in place arrange for assessment. | | |
| Symptoms/severity of breath How many days has this occurred? How many times in a 24-hour period? Is there any abnormal pain or discomfort? Where any blood or mucus in the sputum? Is the patient taking any antibiotic/analgesic? Has there been any change in weight, appetite and eating normally? Urgency: Infection/Cold/Conjunctivitis. U.S. Patients: report any respiratory symptoms to your local specialist or GP. Do not stop your specific pathway and assessment arranged as required. | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Performance Status Has there been a recent change in performance status? | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Diarrhoea How many days has this occurred? How many times in a 24-hour period? Is there any abdominal pain or discomfort? Where any blood or mucus in the stool? Has there been any change in weight, appetite and eating normally? Urgency: Infection/Cold/Conjunctivitis. U.S. Patients: report any respiratory symptoms to your local specialist or GP. Do not stop your specific pathway and assessment arranged as required. | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Constipation Has long time between stools? What is normal? Where any abdominal pain or discomfort? Has the patient taken any laxative/medication? Has the patient taken any laxative/medication? Has the patient taken any laxative/medication? | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Urinary Discomfort Are you passing urine normally? Is this a new problem or is this normal for you? Where any change in the colour of urine? Where any blood in the urine? Is there any incontinence, frequency or urgency? Are you passing your normal amount of urine? Are you drinking normally, are you thirsty? Urgency: Infection/Cold/Conjunctivitis. U.S. Patients: report any respiratory symptoms to your local specialist or GP. Do not stop your specific pathway and assessment arranged as required. | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Wound NCC: Wound Systemic Anti-Cancer Treatment (SACT) and RT at risk of immunosuppression. | None | None | None | None | None |
| Infection Are there any signs of infection? What is the patient's temperature? If an infection has been treated, is there any specific symptoms such as pain, swelling, or difficulty passing urine? Are there any signs of infection? | None | None | None | None | None |
| Diarrhoea How many days? What is the patient's stool intake? Where any abdominal pain or discomfort? Has the patient taken any laxative/medication? | None | None | None | None | None |
| Nausea How many days? How many episodes? What is the patient's usual intake? Where any vomiting or diarrhoea? If you see specific toxicity, have the patient's urinary output and colour. | None | None | None | None | None |
| Head / dizziness How many days? Are there any visual effects? Where evidence of infection? Are they able to eat and drink? Have the patient's urinary output and colour. | None | None | None | None | None |
| Weakness What is the patient's weight? Has this recently changed? Any recent weight loss? Any constitutional factors, such as dehydration, nausea, vomiting, incontinence, diarrhoea or constipation - if you refer to specific pathology symptoms. | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Pain Is it a new problem? Where is it? How long have you had it? Does your pain ever wake you at night? Is there any swelling or redness? Pain associated with walking or resting. Consider thromboses or emboli. Ask patient consider metabolic spinal cord compression (MSCC). | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Neurosensory / motor How did the problem start? Is it constant? Is it affecting mobility/function? Any numbness or tingling in hands/feet? Any tingling in hands/feet? Any tingling in hands/feet? | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Cardiovascular disturbance How many days? How long have you had this symptom? Is it getting worse? Is it constant? Any recent change in medication? | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Wigan How many days? How long have you had this symptom? Is it getting worse? How many days? Any other associated symptoms? Do you feel exhausted? | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Swells How many days? How long have you had this symptom? Is it getting worse? Is it constant? Any recent change in medication? | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Headache How many days? How long have you had this symptom? Is it getting worse? Is it constant? Any recent change in medication? | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Urinary problems How many days? How long have you had this symptom? Is it getting worse? Is it constant? Any recent change in medication? | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Blister/Plaster syndrome How many days? How long have you had this symptom? Is it getting worse? Is it constant? Any recent change in medication? | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |
| Intoxication How many days? How long have you had this symptom? Is it getting worse? Is it constant? Any recent change in medication? | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal | None or no change from normal |

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How we assess & grade toxicities

Grades Grade refers to the severity of the AE.

The 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.**

Common Terminology Criteria for Adverse Events (CTCAE)

Version 5.0

Published: November 27, 2017

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

https://ctep.cancer.gov/protocoldevelopment/electronic_applications/docs/CTCAE_v5_Quick_Reference_5x7.pdf

slido

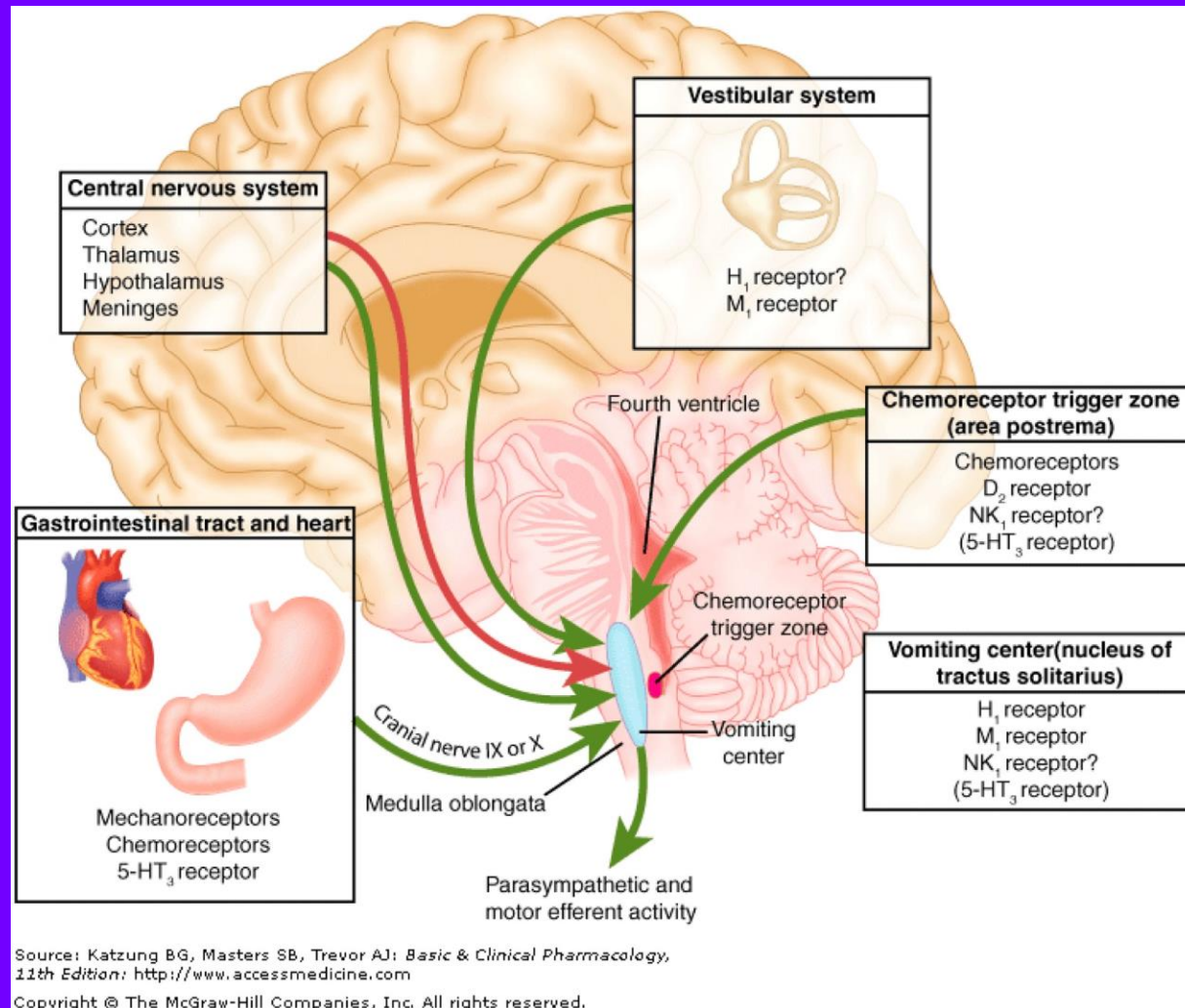
Please download and install the Slido app on all computers you use



In your practice what do you see as the impact of poorly controlled SE?

① Start presenting to display the poll results on this slide.

Chemotherapy induced nausea & vomiting



- Nausea and vomiting 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

Risk Factors for Developing CINV

- <50 years of age
- Female
- History of motion sickness
- History of pregnancy related sickness
- Alcohol intake
- Vomiting pre chemotherapy – disease related
- How emetogenic the chemotherapy regimen is

Types of CINV

- Anticipatory – conditioned to sights/smells/ places
- Acute – within first 24-48 hours
- Delayed-ongoing after 48 hours
- Breakthrough- occurs within 5 days of starting antiemetics
- Refractory- does not respond to treatment

Management of CINV -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. | | |

Non-pharmacological 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

Chemo 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

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



Management of chemotherapy 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
- **May need hospital admission**
- **Pancreatic Enzyme Insufficiency?**
- **Any other cause?**
- **Dose reduction**

Chemotherapy 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 chemotherapy progresses



Effects most of the patients normal Activities of Daily Living



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

Pancreatic
Cancer
UK

Diary for managing fatigue
(extreme tiredness)

Keeping a diary can help you see what makes your fatigue better or worse. This can help you and your medical team manage your fatigue. Don't feel that you have to fill in every box every day. Just do what you can.

| | Monday | | | Tuesday | | | Wednesday | | | Thursday | | |
|---------------------------------------------------------------------------------------------------|--------|----|-----|---------|----|-----|-----------|----|-----|----------|----|-----|
| | am | pm | eve | am | pm | eve | am | pm | eve | am | pm | eve |
| Rate your fatigue from 0 to 10: 0 = no fatigue 10 = worst fatigue you can imagine | | | | | | | | | | | | |
| How did you feel today? (for example, happy, worried) | | | | | | | | | | | | |
| What did you do today? (for example, showered, a short walk) | | | | | | | | | | | | |
| What, if any, treatment did you have today? Include any changes in your care or medicines. | | | | | | | | | | | | |
| Did anything make your fatigue better? | | | | | | | | | | | | |
| Did anything make your fatigue worse? | | | | | | | | | | | | |
| Note anything else relevant (for example, how you slept, problems with digestion, other symptoms) | | | | | | | | | | | | |

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Pancreatic
Cancer
UK

Fatigue and pancreatic cancer
How to deal with tiredness



Strategies to manage chemo related 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

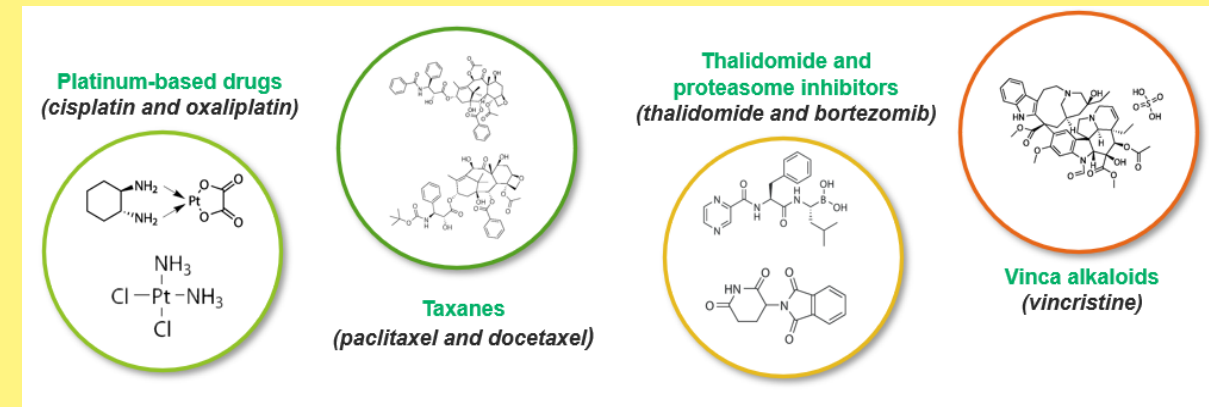
- Encourage patients to rest when needed
- Try and maintain a regular sleep pattern
- Encourage patients to engage in walking, swimming or light exercise
- Plan to do their activities at times of the day they have the most energy
- Diet

Chemotherapy induced peripheral neuropathy

Chemotherapy-induced neuropathy is a serious clinical problem caused by a substantial number of cytotoxic drugs

Two of the most prominent neurotoxic chemotherapy agents are **paclitaxel and oxaliplatin**

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



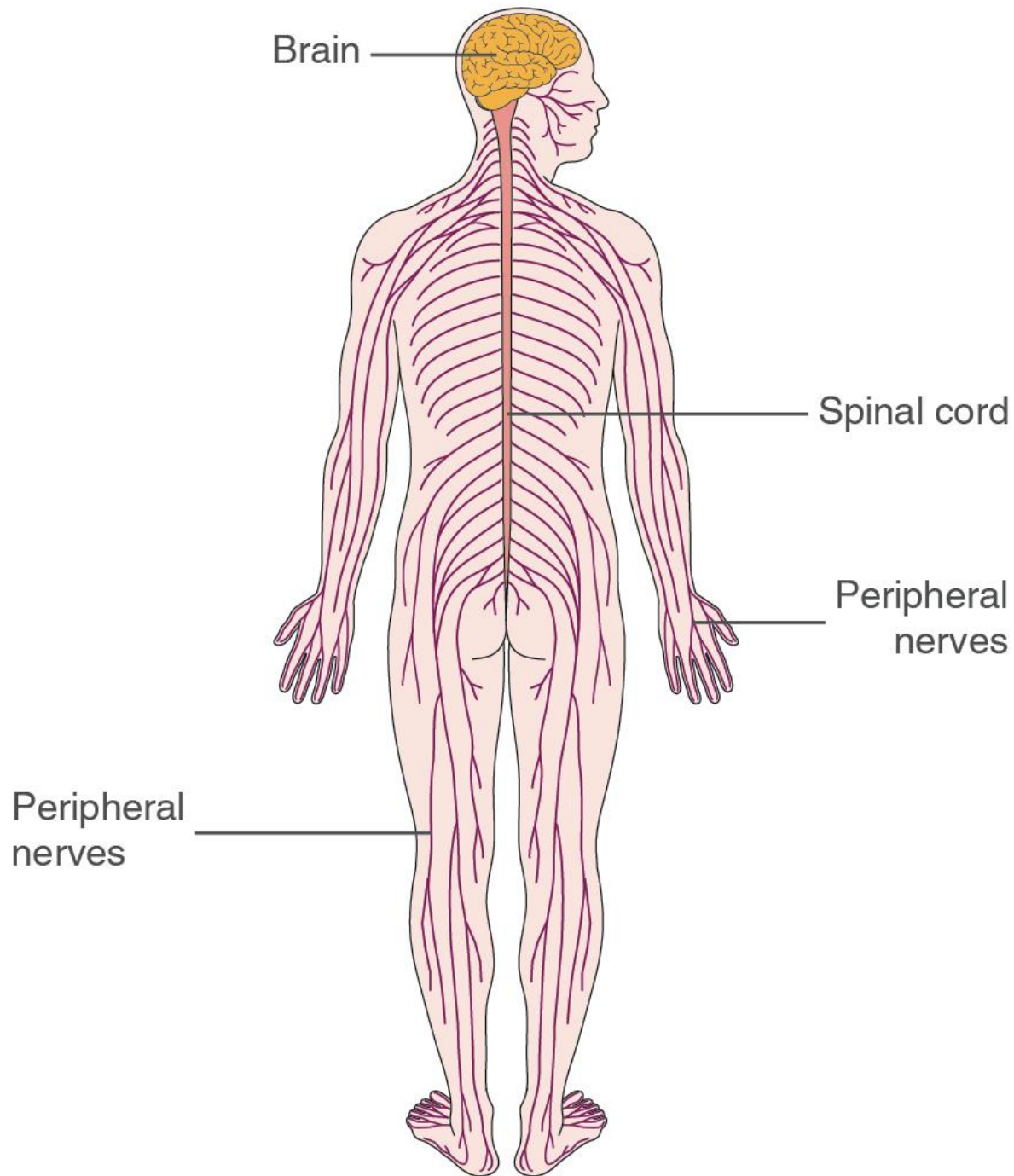
Prevention and Management of Chemotherapy-Induced Peripheral Neuropathy in Survivors of Adult Cancers: ASCO Guideline Update 2020

Loprinzi et al <https://ascopubs.org/doi/pdf/10.1200/JCO.20.01399>

Updates in the treatment of chemotherapy-induced peripheral neuropathy.

Mezzanotte et al 2022 Curr Treat Options Oncol. 2022 January ; 23(1): 29–42.

doi:10.1007/s11864-021-00926-0.



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.

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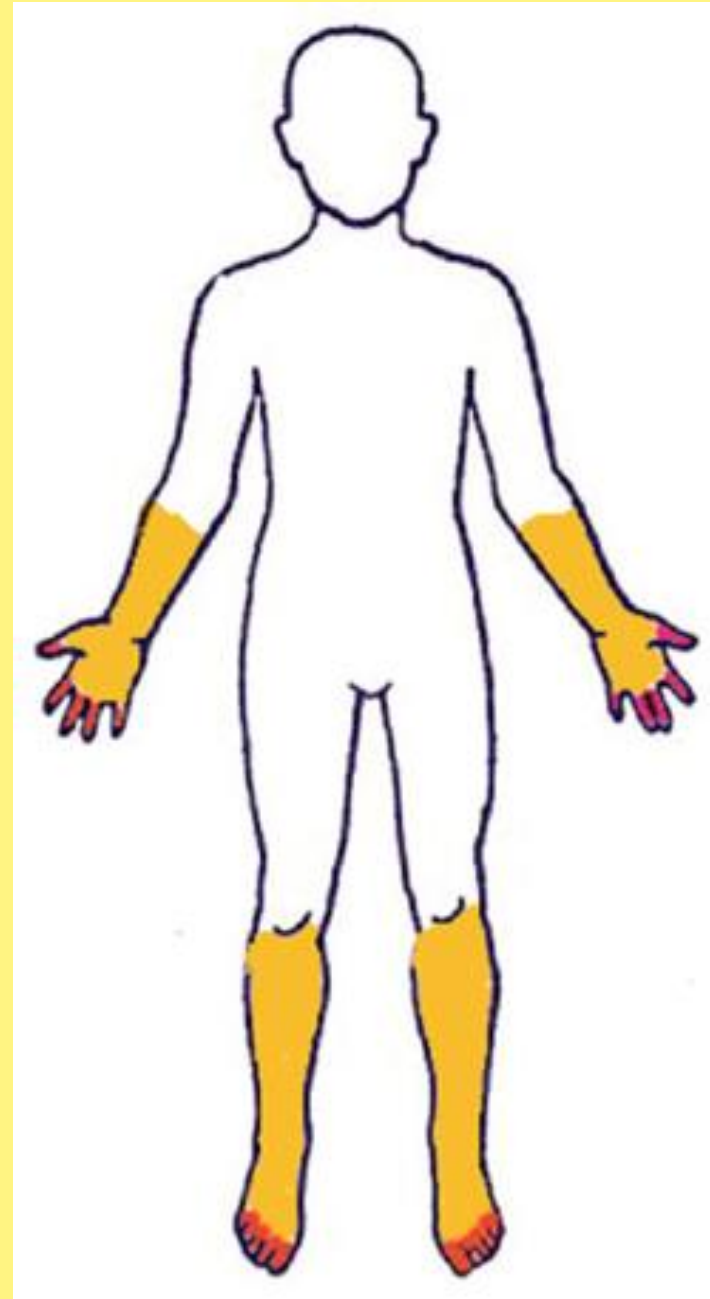
What is proven to help in the treatment of CIPN pain?

① Start presenting to display the poll results on this slide.

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

Do you see any other approaches used in your practice?



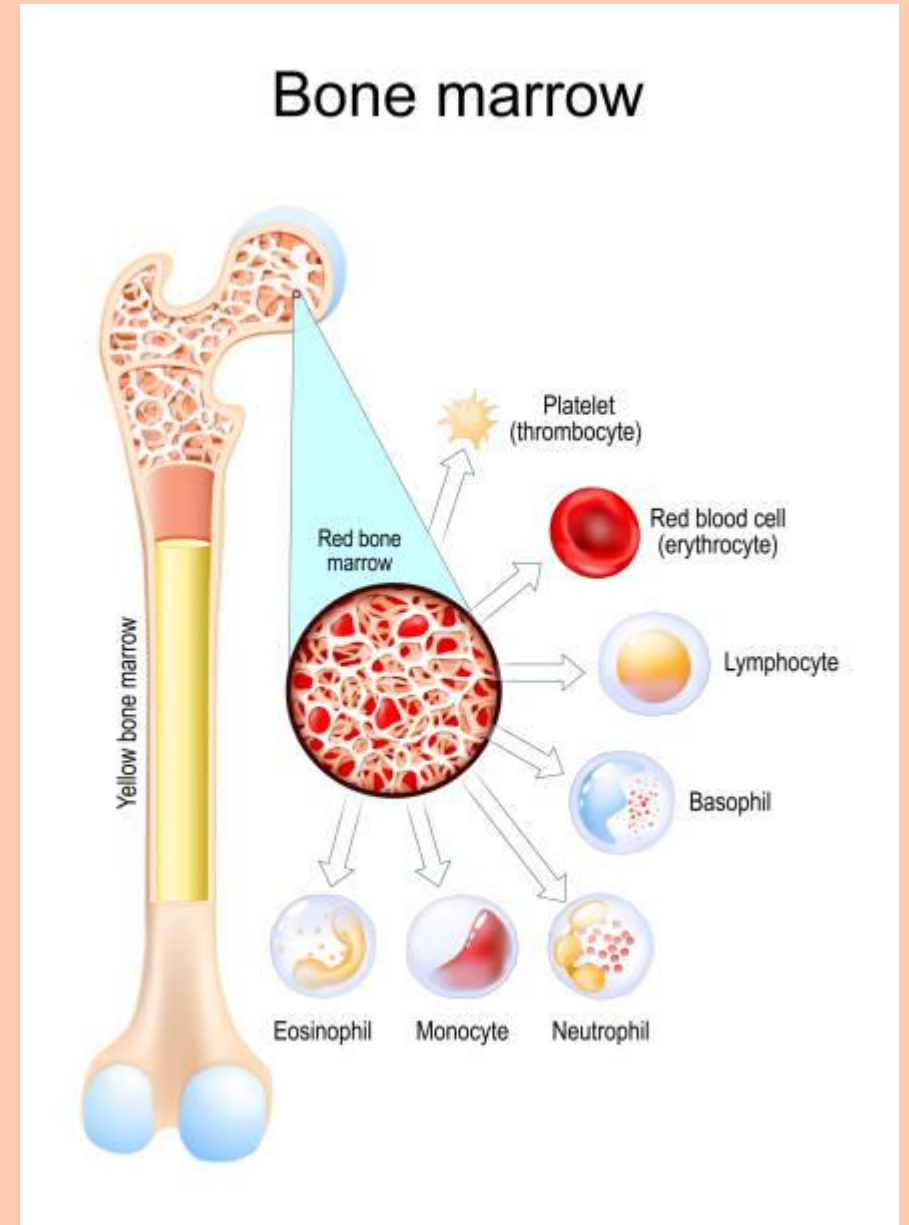
Bone marrow depression

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



<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](#)

Oral side effects

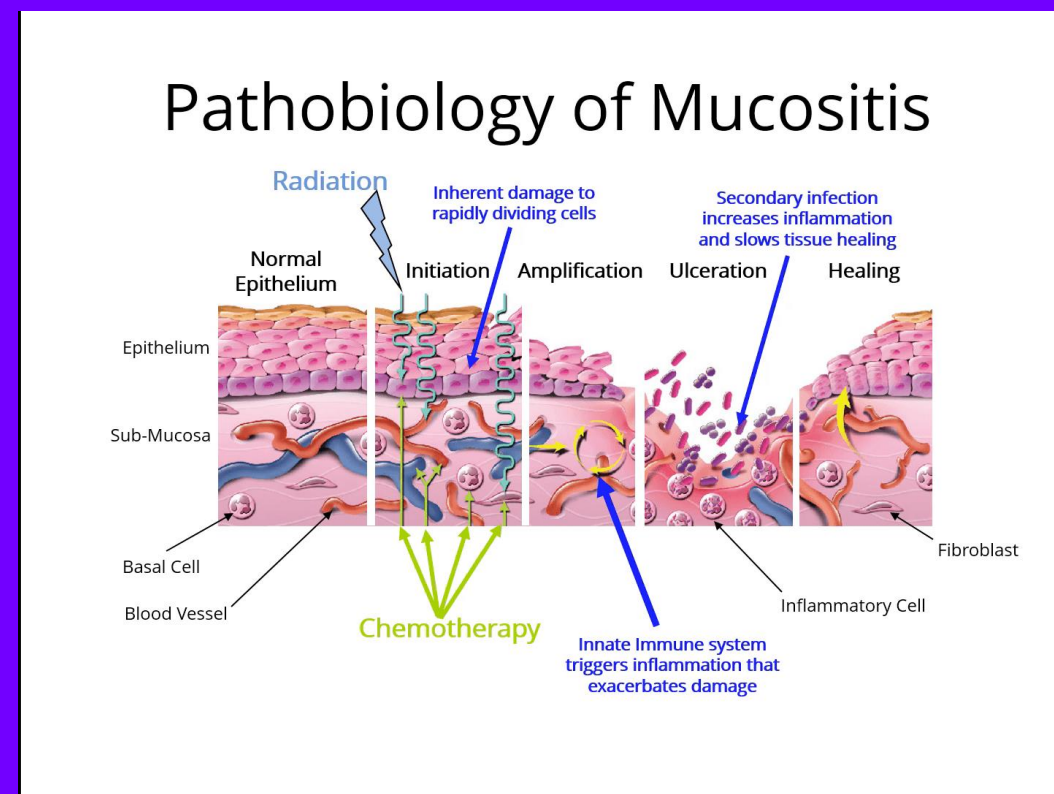
Oral toxicities are common

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.



Management

Patient and loved ones 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

[MASCC/ISOO clinical practice guidelines for the management of mucositis secondary to cancer therapy \(wiley.com\)](https://www.wiley.com)



Emotional impact of chemotherapy

- 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

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Who might be important to support your patients on chemo?

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CASE STUDIES

Joan

58-year-old with BR Head of PDAC

PS 0

Referred for neoadjuvant chemotherapy

Treatment plan – FOLFIRINOX

Assessment for C2 TRT

PS 0/1 but clearly withdrawn

N&V – worse D3-7

Diarrhoea on and off

Weight loss of 2%

What's in our mind when we hear this? Pop in chat your thoughts

Joan

Assessment for C3 TRT

PS1

N&V better

Diarrhoea remains an issue but changed in nature – now experienced Day2-6 3 x a day

7-10 2x a day used loperamide PRN but not lots

PEI symptoms better

Weight further 3% WL

Fatigue - persistent, impacting on ADL's and effecting quality of life

She is struggling to cope with uncertainty

What's on our minds here?

Pop your thoughts in the chat

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What might we do here?

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Joan

Post cycle 3

PS1

SE better with dose reduction

Energy levels up and down but feels 'OK'

Seeing team at Maggie's

Ct scan after 6 cycles showed response to treatment, cancer shrinking away from vein

Surgery performed 6 weeks after 6th cycle of chemotherapy .

Joan then came back for consideration of adjuvant chemotherapy to prevent recurrence

Fred

68yo Met (liver) PDAC of the body of pancreas

Referred for 2nd line palliative chemo

1st line treat Gem/Abrax (dose reduced due to <platelets from C5 & PN)

Successful 1st line treatment – stable disease

PS 1

Aware of prognosis – GP aware, referred to pall/supp care.

On PERT

SE – chemo induced peripheral neuropathy

‘Feels pretty good’

Active surveillance 6 weeks bloods CA199 with CNS & 12-week scans seen in clinic

Controlled disease for 4-5 months approx.

Called me with worsening symptoms – scan/bloods expediated DP

Considered for 2nd line FOLFIRNOX

What might be in our minds when thinking about 2nd line treatment?

Fred

2nd line FFX started at a reduced dose

Pre C2 assessment

HB 96

Neut 0.9

WWC 3.5

Platelets 90

Apyrexial, no obvs signs of infection

PS stable

What's on our minds here?

Fred

Cycle 2 deferred a week given via protocol clinic

Pre C3 assessment

Blood count within parameters

Sore mouth

Feels dry

Feeling tired

Is eating well but has lost 3lbs since assessment before C2.

What might be going on here?

Fred

Mid treat scan showed stable disease

Weight stable

PS stable

Attends for pre cycle 7 assessment

Does not want to continue with treatment, want to focus on QoL

Time burden of treatment

Our support for those affected

- Specialist Nurse Support Line

0808 801 0707

Monday, Tuesday, Thursday Friday
9am-4pm

10am-4pm on Wednesdays

- Email
nurse@pancreaticcancer.org.uk
- WhatsApp **07816 408416**
- Expert information: free, expert information about pancreatic cancer
- Webinars: learn more about managing pancreatic cancer



Circles, our new community

Share the highs, lows and everything in between with people who understand, who just “get it”.

We have been speaking to the community about the needs of people affected by pancreatic cancer and how we can meet those needs to support even more people.

As a result, we've created Circles, a service that will allow people affected by pancreatic cancer to connect via groups (such as WhatsApp and Facebook groups).

If this is something you are interested in, then you can sign up by: scanning the QR code here or visiting <https://www.pancreaticcancer.org.uk/circles-sign-up-form/>

Watch this space for other services we'll be trialling too



Take home thoughts

- Communicated clearly and sensitively
- Consider wide support people need (for all those affected by PC)
- Deal with any added stressors – works, finance, carer burden
- Symptoms of PC need to be proactively managed **alongside** SE of treatment
- Peer to peer support is proven a vital need
- Consider the holistic elements