Guidelines for the initial management of adult patients who have a cancer and present as an emergency/unplanned admission with a complication of their disease or cancer treatment. These guidelines should be used in conjunction with any local policies/procedures/guidelines and should be approved for use according to the trust clinical governance process.

Version 1.0  22.01.2013

The information contained in these documents is a consensus of the development and consultation groups’ views on current treatment. Clinicians using these documents are expected to use independent clinical judgment in the context of the presenting clinical circumstances to determine any patient’s care or treatment.
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**Development Group/Consultation Group/Acknowledgements**

**Glossary and document control**
Introduction
Guidelines for the initial management of adult patients who have a cancer and present as an emergency/unplanned admission with a complication of their disease or cancer treatment. These guidelines should be used in conjunction with any local policies/procedures/guidelines and should be approved for use according to the trust clinical governance process. The development and consultation group aimed to provide a set of generic guidelines based on national guidelines and clinical expertise. They are available in a format that allows local adaptation, but maintains the standardised format of the pathways as much as possible. The authors request that the original source is acknowledged in all copies or adaptations.

Background
In response to the publication of the August 2009 NCAG report and the National Acute Oncology and Chemotherapy Peer Review quality standards, this document provides agreed guidelines on the initial assessment and immediate management of Acute Oncology patients, i.e. patients presenting with an acute problem, demonstrating symptoms deemed as having been caused by:
• Systemic treatment of cancer (which includes chemotherapy),
• Radiotherapy,
• Malignant disease,
• A previously undiagnosed cancer where the acute management staff decide that an urgent oncology/haematology assessment is required.

It should be emphasised that this guideline is intended to support emergency and oncological staff in the initial assessment and management phases only, for urgent onward referral as appropriate, and its intended focus is on the first 24 hour period of receipt of a phone call or emergency presentation. By intention each protocol contained within this guideline:
• most are single-page “see-and-treat” guides, and do not go into the detail of ongoing management of the problem beyond the initial 24-hour period
• Is not prescriptive. Whilst drug names may be referenced within each protocol, this is offered as a guide only as it is acknowledged that locally variation may apply.

To aid in this urgent assessment, each protocol follows the RAG (red, amber, green) format and quick reference assessment which is in line with the UKONS “Oncology/Haematology 24-Hour Telephone Helpline Protocol” published in 2010 and the Canadian ED and Acuity Scale Triage System which was designed to ensure that all patients with cancer who present as an emergency should be reviewed within 15 minutes.

Intended Audience
This guideline is intended for use by the following healthcare professionals:
• Primary care
• Those within acute trusts who receive telephone enquiries.
• Those who manage presentations for acute oncology patients
• Patient Groups
• All emergency health care professionals (medical and nursing)
• Those hospitals which do not have on-site emergency departments

Please refer to the Index on the preceding page for further information regarding the full contents of this Guideline. Please be aware of NICE National Guidelines/Pathways for the management of:
• Neutropenic Sepsis: http://pathways.nice.org.uk/pathways/neutropenic-sepsis

The information contained in these documents is a consensus of the development and consultation group of their views on current treatment. Clinicians using these documents are expected to use independent clinical judgment in the context of the presenting clinical circumstances to determine any patient’s care or treatment.
Systemic Anti-Cancer Therapy (SACT) includes Cytotoxic Chemotherapy, monoclonal antibodies and new and novel therapies. Treatment is given at the highest tolerated dose. This means there is a fine line between therapeutic dose and toxic dose. Patients should know what chemotherapy drugs they are on, have written information about their chemotherapy and have an alert card.

Patients may be on targeted biological therapies or trial therapy, which may present with unexpected or unknown side effects.

All patients on chemotherapy are at risk of rapid deterioration, neutropenic sepsis and the development of toxicities additional to the one they are complaining of.

All licensed anticancer drugs have specific toxicities – please see details on chemotherapy prescription or Summary of Product Characteristics [http://www.medicines.org.uk/emc/](http://www.medicines.org.uk/emc/)

If you are worried about the patient or their ability to give an accurate history, then medical review and follow up phone calls are essential. In some cases admission may be necessary to fully assess patients, even though they do not meet admission criteria.

If a patient sounds unwell from chemotherapy toxicities, it is sensible to arrange oncological/haematological review or admission to hospital rather than GP review, when possible. If you suspect the patient may have neutropenic sepsis then arrange immediate urgent admission to the nearest appropriate hospital.

GP and community teams are not experts in chemotherapy toxicity management so if asking a GP to review, it is important to speak to the GP outlining what is required, what to look for and who to contact if further advice is needed.

**Chemotherapy toxicity –**

**Initial Toxicity Assessment (NB always ask about all toxicities and use the UKONS oncology/haematology helpline assessment tool if established in your area)**

It is important to ask about the occurrence of all common chemotherapy toxicities in addition to the initial complaint, as several toxicities occurring together needs closer management. Organisations should consider using a standard triage and assessment format, e.g. the UKONS Triage Tool.

This assessment should include as standard the following questions:-

<table>
<thead>
<tr>
<th>Chemotherapy drugs – names and last date of chemotherapy (NB may be on tablets)?</th>
<th>General condition and ability to carry out normal function at home?</th>
<th>Has this changed recently?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the patient have any of the following-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fever – if yes, initiate Neutropenic Sepsis protocol immediately</td>
<td>Chest pain – if yes, admit urgently to hospital with on-site cardiology. <strong>Interrupt chemotherapy.</strong></td>
<td></td>
</tr>
<tr>
<td>Nausea</td>
<td>Vomiting</td>
<td>Diarrhoea</td>
</tr>
<tr>
<td>Bleeding or bruising</td>
<td>Neurosensory/motor loss</td>
<td>Sore/red hands and feet</td>
</tr>
<tr>
<td>Signs of dehydration e.g., decreased urine output, fever, thirst, dry mucous membranes, weakness, dizziness, confusion</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Consider factors which lower threshold for inpatient admission:**

- Symptoms needing urgent admission – temperature, chest pain, bleeding?
- Might be neutropenic?
- More than one Grade 2 toxicity?
- Poor historian/ difficult to assess on phone?
- Compliance of patient / ability to understand and follow instructions
- Grade 2 toxicity not settling despite maximal outpatient efforts?
- Becoming weak/dehydrated?

**NB Neutropenic sepsis needs urgent admission and immediate iv broad spectrum antibiotics/fluids.**

- **Do not get GP out first**
- **Do not wait for FBC before giving antibiotics**
- **See specific guideline for further detail**

<table>
<thead>
<tr>
<th>Grade 1 (Green)</th>
<th>Grade 2 (Amber)</th>
<th>Grade 3 (Red)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
<td>Life threatening</td>
</tr>
</tbody>
</table>

**ACTION: Grade 1**

- See specific toxicity guidelines
- Advise patient to phone back if getting worse
- Document call and advice given

**ACTION: Grade 2**

- See specific toxicity guidelines
- Assess for admission if two grade 2 toxicities or toxicity not settling despite initial advice
- Advise patient to phone back if getting worse
- Phone/review patient within 24 hours to ensure settling
- Document call and advice given

**ACTION: Grade 3 and 4**

- Admit for assessment, investigation and parenteral management
- See specific toxicity guidelines and sections on management of inpatients with chemotherapy toxicities on page 3
- If not needing admission, ensure FBC, U+E checked, good oral intake and daily contact with patient until improving, with low threshold for admission
- Document the call and the advice given and inform specialist team
- **NB – rapid deterioration possible. Chemotherapy toxicities are reversible but need aggressive management**

**Interrupt** SACT/Chemotherapy including oral chemotherapy if applicable until discussed with the Acute Oncology Team.

Ensure that the Acute Oncology Team are informed of the patient’s admission as soon as possible
These are general principles only. Please see specific toxicity guidelines for guidance on each toxicity and manage each patient according to their condition, concomitant medications and other medical problems.

1. Chemotherapy toxicities can make a patient rapidly unwell but should all be reversible if managed rapidly and appropriately. Aggressive management (usually including HDU/ITU) is appropriate if unstable, even in the context of advanced cancer. Decisions should be made on an individual basis—please discuss with acute oncology/haematology team or on call oncology/haematology specialist.

2. Neutropenia and disease-related immuno-suppression can occur at any time during a course of SACT or up to 6 weeks after.

3. Review concomitant medications and consider stopping concomitant medications that may affect renal function/potentiate hypotension (e.g. ACE-inhibitors, diuretics) if unwell or hypotensive and benefits outweigh the risks of doing so. These drugs increase risk of renal problems e.g. with gentamicin.

4. Establish intravenous access (or utilise indwelling lines if appropriately trained to do so) and hydrate according to clinical condition. Monitor fluid balance with cumulative fluid balance chart and daily weights in addition to clinical condition and bloods, particularly if low albumin.

5. Daily medical review and daily bloods (watch for neutropenic sepsis/dehydration).

6. Contact specialist team if patient not settling.

7. Escalate care (e.g. HDU/ITU) if patient becoming haemodynamically compromised/drowsy/shut down (discuss with specialist team if unsure of appropriateness).

8. Avoid paracetamol/antipyretics if neutropenic as they may mask signs of sepsis.

9. Rectal examination should be undertaken with caution with patients receiving SACT.

10. If patient is on a trial, the trials team should be contacted about the admission.

11. The patient’s local specialist team providing cancer treatment must be informed of any admission/assessment as adjustments to the subsequent cycle may be required.

12. All patients admitted with chemotherapy toxicity require medical review prior to further treatment. They may need dose delays/adjustments to next cycle of SACT.

13. The acute oncology/haematology team should annotate the assessment/admission into the patients oncology/haematology notes and inform the oncology/haematology team treating the patient.

14. Consider the involvement of the palliative care team for symptom control advice if the problem is disease related.
Guideline 1. ANAPHYLAXIS Requires IMMEDIATE medical intervention and assessment!
Anaphylaxis is a disorder characterised by an acute inflammatory reaction resulting from the release of histamine and histamine-like substances from mast cells, causing a hypersensitivity immune response. Clinically it presents with breathing difficulty, dizziness, hypotension, cyanosis and loss of consciousness and may lead to death. Anaphylaxis is considered likely to be present if any 1 of the 3 following clinical criteria is satisfied within minutes to hours:
• Acute symptoms involving skin, mucosal surface, or both, as well as at least one of the following: respiratory compromise, hypotension, or end-organ dysfunction
• Two or more of the following occur rapidly after exposure to a likely allergen: hypotension, respiratory compromise, persistent gastrointestinal symptoms, or involvement of skin or mucosal surface
• Hypotension develops after exposure to an allergen known to cause symptoms for that patient: age-specific low blood pressure or decline of diastolic blood pressure of more than 30% compared to baseline
However, anaphylaxis occurs as part of a clinical continuum that can begin with relatively mild features and rapidly progress to life-endangering respiratory or cardiovascular manifestations.

Initial Assessment
Identify: All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to guidelines.
Investigations: Urgent Full blood count, U&E, LFT, ABGs (arterial blood gas), ECG
Signs and symptoms: breathing difficulty, dizziness, hypotension, cyanosis and loss of consciousness
Questions:
• Cancer diagnosis/primary disease
• Differential diagnosis: cytokine release syndrome; acute infusion reaction; syncope (rapid recovery) with bradycardia in vagal reaction; acute cardiac event; panic attack; acute severe asthma; acute abdominal or cardiac emergency

<table>
<thead>
<tr>
<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
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</thead>
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<tr>
<td>Symptomatic bronchospasm, with or without urticaria; parental intervention indicated; allergy related oedema/angioedema; hypotension</td>
<td>ANAPHYLAXIS - Life threatening consequences; urgent intervention indicated</td>
</tr>
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URGENT TREATMENT REQUIRED

Action: Treat as per Resuscitation Council guidelines
Following page.

! These Patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to approved guidelines.

! STOP SACT/Chemotherapy including oral until discussed with the Acute Oncology Team.

! Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.
Admit for monitoring and on going assessment and management in accordance with local trust guidelines.
Guideline 1. Continued  

**ANAPHYLAXIS**  
Requires IMMEDIATE medical intervention!

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### Anaphylactic reaction?

- **Airway, Breathing, Circulation, Disability, Exposure**

### Diagnosis – look for:
- Acute onset of illness
- Life-threatening Airway and/or Breathing and/or Circulation problems
- And usually skin changes

### When skills and equipment available:
- Establish airway
- High oxygen flow
- IV fluid challenge
- Chlorphenamine
- Hydrocortisone

**Monitor:**
- Pulse oximetry
- ECG
- Blood pressure

---

1. **Life-threatening problems:**
   - **Airway:** swelling, hoarseness, stridor
   - **Breathing:** rapid breathing, wheeze, fatigue, cyanosis, \(\text{SpO}_2 < 92\%\), confusion
   - **Circulation:** pale, clammy, low blood pressure, faintness, drowsy/coma

2. **Adrenaline** *(give IM unless experienced with IV adrenaline)*
   - IM dose of 1:1000 adrenaline (repeat after 5 min if no better)
     - Adult 500 micrograms IM (0.5ml)
     - Child more than 12 years 500 micrograms IM (0.5ml)

   Adrenaline IV to be given **only by experienced specialists**

3. **IV fluid challenge:**
   - Adult 500 – 1000 ml
   - Stop IV colloid if this might be the cause of anaphylaxis

4. **Chlorphenamine** *(IM or slow IV)*
   - Adult or child more than 12 years old 10 mg

5. **Hydrocortisone** *(IM or slow IV)*
   - Adult or child more than 12 years old 200 mg

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*Resuscitation Council (UK)*

UKONS Acute Oncology Initial Management Guidelines
Guideline 2. ARTHRITIS/MYALGIA
Normally a symmetrical widespread joint pain but can also be associated with muscle pain (myalgia). Arthralgia is most common after taxane chemotherapy (docetaxel or paclitaxel) and vinca alkaloids (vincristine, vinblastine, vindesine), aromatase inhibitor therapy (anastrozole, letrozole) or after filgrastim/pegfilgrastim (GCSF) injections.

Time to medical assessment/interview 15 minutes (Canadian ED Triage & Acuity Scale)

Initial Assessment
Identify: All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to guidelines.


Investigations: Urgent Full blood count, U&E

Questions:
- Where is the pain? (If not widespread then consider other causes of joint pain e.g. localised pain in isolated joint/back/spine may be related to metastatic deposit and need investigation and discussion)
- How long has the patient had it? Is the pain affecting what the patient can do?
- Has/is the patient receiving GCSF, filgrastim/pegfilgrastim injections? When was the last injection?
- Is the patient taking anything for pain?
- Is the patient on any blood thinning drugs or steroids?

Grade 1(Green) Grade 2(Albert) Grade 3(Read) Grade 4(Read)
Mild Pain - not interfering with function Moderate pain - pain interfering with function but not interfering with activities of daily living Severe pain - pain severely interfering with activities of daily living Disabling

Ensure the patient is not neutropenic.
Reassure the patient that this is normal, generally nothing to worry about and associated with treatment.
Advise to observe temperature closely - if patient develops temperature they must phone helpline immediately for advice.
Review current analgesia and consider paracetamol, non steroidal (with caution as may not then develop a temperature in response to infection) or tramadol if pain severity merits it
Heat - a heat pad, covered hot water bottle or regular warm baths. Advise patient to get plenty of rest and plan activities to include rest periods
Phone/review within 24 hours to ensure settling

Advice and support measures as for Grades 1 and 2.
Ensure the patient is not neutropenic.
Review analgesia – consider trying tramadol, gabapentin, non steroidal (consider specific contraindications to non-steroidal).
Advise to observe temperature closely - if patient develops temperature they must phone immediately for advice.
Phone/review within 24 hours to ensure settling.

Arrange urgent admission for ongoing assessment and treatment.
Ensure the patient is not neutropenic.
Review analgesia – consider trying tramadol, gabapentin, non steroidal.
(consider specific contraindications to non-steroidal)

Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.
Guideline 3. **BLEEDING AND/OR BRUISING** Requires immediate medical assessment/interview!

**Bleeding** can occur secondary to injury, disease, or as a side effect of treatment. It can be a life threatening event if massive blood loss or intracranial haemorrhage occurs.

**Thrombocytopenia** – is a reduction in the number of platelets in the blood. If platelet count is < 50 bleeding and or bruising may occur with minor trauma. Intracranial haemorrhage is more likely if there is sepsis and a platelet count of <10

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**Initial Assessment**

**Identify:** All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of:

- Neutropenic fever and sepsis
- Thrombocytopenia due to reduced marrow production or marrow infiltration

If present, these conditions should be managed according to approved guidelines.

**Observations:** Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score. AVPU (Alert Voice Pain Unresponsive).

**Investigations:** Urgent Full blood count, U&E, consider group and cross match. Coagulation screen.

**Questions:**

- Is the patient actively bleeding? Site of active bleeding?
- Injury related or spontaneous?
- Onset and duration – when did bleeding start/how long has it persisted?
- Have they had similar bleeding before?
- How much blood has the patient lost?
- Current medications /allergies?
- Diagnosis/treatment; type/when was last treatment?
- Relieving factors – Is it stopped via direct pressure or other measures?

**Examination:**

Associated symptoms: Light headed, palour, clammy, thirst, rash (petechial? purpura?)

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<table>
<thead>
<tr>
<th>Grade 1(Amber)</th>
<th>Grade 2(Red)</th>
<th>Grade 3(Red)</th>
<th>Grade 4(Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding - mild self limiting, controlled by conservative measures, ecchymosis, occult blood in body secretions Bruising - petechiae or bruising in a localised or dependant area, with or without trauma.</td>
<td>Bleeding - blood loss of 1-2 units Bruising - moderate petechiae, purpura and/or generalised bruising, with or without trauma.</td>
<td>Bleeding - blood loss of 3-4 units. Bruising - generalised petechiae, purpura and/or bruising. New bruises without significant bruising.</td>
<td>Massive bleeding blood loss of &gt; 4 units. Life threatening haemorrhage.</td>
</tr>
</tbody>
</table>

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Review all blood investigation results. If neutropenic manage as per protocol. Discuss any abnormalities with on call haemat-oncologist and/or oncologist. Do not discharge a patient without prior discussion with on call haemat-oncologist and/or oncologist.

Manage according to emergency department protocols. Review all blood investigation results. If neutropenic manage as per guideline. Discuss with on call haemat-oncologist and/or oncologist. Admit for support and monitoring.

Manage according to emergency department resuscitation guidelines. Attention should be given to disease or treatment specific factors such as;

- thrombocytopenia
- anticoagulant therapy
- advanced disease

If neutropenic manage as per guideline. Consider critical care management. All patients should be discussed with on call haemat-oncologist and/or oncologist. Admit for support and monitoring.

**Interrupt** SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.

24/01/2013 UKONS Acute Oncology Initial Management Guidelines
Guideline 4. CHEST PAIN Requires IMMEDIATE medical assessment/interview!

Pain may result from a wide range of causes, there is an urgent need to diagnose the cause of any patient presenting with chest pain to ensure that serious and life-threatening conditions are not missed.

Initial Assessment

Identify: All patients within 6/52 of chemotherapy specifically patients currently receiving 5 fluorouracil (5FU), capecitabine and uftoral, which can cause coronary artery spasm. Patients may be taking these drugs orally at home or via continuous infusion. Other chemotherapy drugs/monoclonal antibodies can cause reduction in heart function but this is not usually an acute presentation. Myeloma patients receiving thalidomide and lenalidomide have a high risk of pulmonary embolism.


Investigations: Urgent Full blood count, U&E, Trop-T, ECG. Consider ABGs, CTPA.

Questions:
- Is the patient currently receiving 5FU/ capecitabine/ uftoral?
- Does the patient have a history of angina, or other heart disease?
- Exacerbating/relieving factors?
- Characteristics of pain?
- Associated symptoms, e.g. SOB, syncope, oedema, palpitations
- Consider is this pain cardiac. Other causes of chest pain in oncology/haematology patients are commonly pulmonary embolism (PE), Indigestion, disease progression.

Action: Treat chest pain as ‘Red’ until proven to be non cardiac/life threatening

The aim is to exclude a life-threatening cause, which needs immediate treatment, from other causes of chest pain

! Ensure the patient is not connected to Intravenous infusion of 5 fluorouracil – If so arrange urgent disconnection. If patient taking oral capecitabine/ uftoral twice daily, ensure patient does not continue with this medication

! These Patient’s are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to approved guidelines

• Admit for monitoring and on going assessment and management in accordance with local trust guidelines

• Inform Acute Oncology Team of admission as soon as possible.

Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.
**Guideline 5. CONSTITUTION**
Irregular and infrequent or difficult evacuation of the bowels; can be a symptom of intestinal obstruction or diverticulitis

**Time to medical assessment/interview** 15 minutes (Canadian ED Triage & Acuity Scale)

### Initial Assessment
**Identify:** All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to guidelines.

**Observations:** Temperature, pulse, blood pressure, respiration rate, O₂ saturation.

**Investigations:** Urgent Full blood count, U&E, CRP, consider abdominal X-ray

**Questions:**
- When did bowels/stoma move last?
- What is normal bowel habit?
- What medication are you taking and has there been any recent changes?
- What food and fluids have you been taking over last few days?
- Any nausea or vomiting?
- Increasing abdominal pain?

N.B. constipation may be a presenting symptom of MSCC or hypercalcaemia

<table>
<thead>
<tr>
<th>Grade 1 (Green)</th>
<th>Grade 2 (Amber)</th>
<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No bowel movement in the last 24 hours</td>
<td>No bowel movement in the last 48 hours</td>
<td>No bowel movement in the last 72 hours</td>
<td>Paralytic ileus – no bowel movement in the last 96 hours</td>
</tr>
</tbody>
</table>

**Also consider:**
- Hard, dry stool?
- Increased anorexia?
- Decreased fluid intake?

**ACTION: Grade 1 and Grade 2**

Dietary advice including good fluid intake
Stop or change constipating drugs
Consider use of laxatives e.g. Movicol or Laxido-type product
Encourage patient to make contact if symptoms persist or worsen.

Review prescribed stool softeners and laxatives and concomitant medication which may affect bowels, e.g. opiates

Dietary advice including good fluid intake

Consider admission for further investigation and management if associated with:
- Abdominal pain
- Nausea vomiting

Surgical review if indicated.

May be associated with:
- Severe abdominal pain and/or distension?
- Nausea and Vomiting
- Faecal smelling vomit?
- Rigid abdominal distension?
- Recent abdominal surgery?

Admit for:
- further management
- senior medical
- and/or surgical review
- I.V. access and fluid replacement
- Analgesia
- Emesis control
- Medication review
- Further Monitoring

**Interrupt** SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.

24/01/2013

UKONS Acute Oncology Initial Management Guidelines
Guideline 6. DIARRHOEA

A disorder characterised by frequent and watery bowel movements. Grading is relative to normal baseline function.

**Time to medical assessment/interview** 15 minutes  
(Canadian ED Triage & Acuity Scale)

**Initial Assessment**

**Identify:** All patients within 6/52 of chemotherapy or radiotherapy or who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to guidelines.

**Observations:** Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score.

**Investigations:** **Urgent** Full blood count, U&E, CRP, abdominal X-ray, stool sample for C&S and CDT screen.

**Questions:**

- What chemotherapy is the patient on and when was the last treatment/tablet?
- Are they on any chemotherapy drugs where diarrhoea is a commonly-associated and often serious toxicity e.g. **CAPECITABINE** (Xeloda) tablets, **IRINOTECAN** (Campto), **ERLOTINIB** (Tarceva) tablets, **IPILIMUMAB** (Yervoy)? Please see specific DRUG INFORMATION SHEET in addition to general diarrhoea guidance.
- Are they receiving radiotherapy and when was their last treatment?
- How often do the bowels usually move?
- How many stools a day is the patient passing or how much stoma output is there above normal amount?
- Are stools/stoma output formed, loose or watery? Any faecal incontinence or urgency? Nocturnal movements?
- Is there any abdominal pain e.g., cramping pains coming in waves?
- For how many days has the patient had diarrhoea? Is it interfering with activities of daily living?
- Are they able to eat and drink normally? Are they passing plenty of clear urine?
- Do they have any other chemotherapy related toxicities, e.g. mouth ulcers, N/V, red hands/feet, stomatitis, mucositis?
- Any recent antibiotics or recent hospital admissions?
- Have they taken any laxatives or anti-sickness medication or any anti-diarrhoeal medication in the last 24 hours? What?

<table>
<thead>
<tr>
<th>Grade 1 (Green)</th>
<th>Grade 2 (Amber)</th>
<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase to 2-3 bowel movements a day over pre-treatment baseline or mild increase in stoma output</td>
<td>Increase of 4-6 bowel movements a day over pre-treatment baseline, moderate increase in stoma output. Moderate cramping Nocturnal stools</td>
<td>Increase of 7-9 bowel movements a day over pre-treatment baseline or incontinence. Severe increase in stoma output. Severe cramping Nocturnal stools Interfering with ADL</td>
<td>Increase to &gt; 10 bowel movements a day over pre-treatment baseline and/or grossly bloody diarrhoea and/or need for parenteral support</td>
</tr>
</tbody>
</table>

**Review medication STOP DRUGS that may be contributing until Acute Oncology Team review**

**Haematology – discuss with haematology team**

**Oncology - consider Loperamide (Imodium) initially. If ineffective consider Codeine Phosphate. Reduce/Stop antidiarrheal after 12-24 hours free of diarrhoea**

Review any other chemotherapy toxicities according to guidelines

Increase oral fluids (2-3 L per day). Avoid caffeinated drinks and alcohol

Diet: suggest avoiding milk, high-fat foods, raw fruit and vegetables, beans, fibrous vegetables, cereals

Ensure anal area is kept clean and intact by regular washing and application of barrier cream

Phone daily until patient improves. Patient must phone if diarrhoea worsening

Grade 2 for >24 hours despite max antidiarrhoeal or if other symptoms e.g. temperature, nausea/vomiting, mouth ulcers, or clinical concerns take immediate action as for grade3/4

**Review all medication STOP DRUGS that may be contributing until Acute Oncology Team review**

Admit patient urgently and follow guidance on the following page (unless clinical review suggests no concerns, well hydrated, has not yet had antidiarrhoeals and able to review patient daily).

Change to antidiarrhoeal medication.

**Interrupt** SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology team.

Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible
UKONS Guideline 5. continued.  

DIARRHOEA

KEY PRINCIPLES:

• It is vital to read specific DRUG INFORMATION SHEET in addition to general diarrhoea guidance on the previous page.

  • Interrupt SACT/Chemotherapy including oral chemotherapy if applicable until discussed with the Acute Oncology Team.

Initial assessment

Observations:  Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score.

Investigations:  Urgent  Full blood count, U&E, CRP, abdominal X-ray, stool sample for C&S

History to include:

• What chemotherapy is the patient on and when was their last treatment/tablet?

• Are they receiving radiotherapy and when was their last treatment?

• How often do the bowels usually move?

• How many stools a day is the patient passing or how much stoma output is there above normal amount?

• Are stools/stoma output formed, loose or watery? Any faecal incontinence or urgency? Nocturnal movements?

• Is there any abdominal pain e.g. cramping pains coming in waves?

• For how many days has the patient had diarrhoea so far? Is it interfering with activities of daily living?

• Are they able to eat and drink normally? Are they passing plenty of clear urine?

• Do they have any other chemotherapy related toxicities e.g. nausea and/or vomiting, mouth ulcers, red hands/feet.

• Any recent antibiotics or recent hospital admissions?

• Have they taken any laxatives or anti-sickness medication or any anti-diarrhoeal medication in the last 24 hours? What?

• Please see specific DRUG INFORMATION SHEET in addition to general diarrhoea guidance

• Assessment of fluid balance status (BP, pulse, fluid intake, signs of dehydration)

• Check bloods – renal function, FBC, U&E, LFT, Bone profile CRP, blood cultures if signs of systemic sepsis

• Full physical examination

Initial Management

• Send stool urgently - Inform microbiology personally and discuss management with microbiologist

• If haematology patient or strong suspicion of infective diarrhoea, withhold anti-diarrhoeal medication until stool result available

• Consider infective diarrhoea - isolate until infection excluded

• Pyrexia (temp > 38°C) - start neutropenic sepsis antibiotic management immediately as per policy – do not wait for FBC

• Immediate IV fluid resuscitation. Replace fluid and electrolyte losses

• Adjust on-going fluids according to fluid balance status and renal function

• Stop ACE-inhibitors/ diuretics/ NSAIDs

Antidiarrhoeal

• Haematology - Discuss with haematology team on call before commencing anti-diarrhoeal

• Oncology  -Consider loperamide (Imodium) 4mg initially then 2mg after each loose stool. (maximum 16mg per 24 hours)  

  N.B.  Caution with high doses or prolonged use of Loperamide as it can cause paralytic ileus

• If loperamide ineffective, then consider codeine phosphate 30-60mg every 4 hours (maximum 240mg/24 hours) instead of or in addition

• Reduce/stop antidiarrhoeal after 12-24 hours free of diarrhoea

• If Grade 4 - octreotide 500mcg by sc injection on admission, then octreotide 300mcg tid and immediate IV broad spectrum antibiotic (even if afebrile). Withhold if not on maximal anti-diarrhoeal prior to admission but review every 24 hours

• Do not withhold antidiarrhoeal for more than 12-24 hours without thorough senior medical review

• Consider Hyoscien Butylbromide (Buscopan) if abdominal spasms

• Nil by mouth (except sips) if abdominal pain or distension or abnormal AXR

• Give antibiotics according to local policy (e.g. for Cdiff or neutropenic sepsis) Consider administering antibiotics empirically if not settling.
Guideline 7. DYSPNOEA/SHORTNESS OF BREATH

Difficulty breathing may include symptoms such as wheezing, choking, or a feeling of not getting enough air into the lungs.

Dyspnoea indicates a conscious appreciation of increased work done during breathing, principal factors in SOB are an increased work of breathing, increased ventilatory drive, impaired muscle function.

**Time to medical assessment/interview** 15 minutes (Canadian ED Triage & Acuity Scale)

### Initial Assessment

**Identify:** All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to guidelines.

**Observations:** Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score. AVPU (Alert Voice Pain Unresponsive).

**Investigations:** Urgent Full blood count, U&E, D-dimer, sputum C&S, CXR, blood cultures and CRP if pyrexial. Consider ABGs and troponin. Consider CTPA/VQ investigations to rule out pulmonary embolism.

**Questions:**
- Cardinal diagnosis/primary disease
- Cardinal questions related to breathlessness including history of underlying chest complaints e.g. asthma, COPD, ischaemic heart disease

Differential diagnosis would include chest Infection, pulmonary embolism (PE), disease progression i.e. consolidation/pleural effusion/superior vena cava obstruction (SVCO), cardiac ischaemia, anaemia

<table>
<thead>
<tr>
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<th>Grade 2 (Amber)</th>
<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No new symptoms</td>
<td>Dyspnoea on exertion</td>
<td>Dyspnoea at normal levels of activity</td>
<td>Dyspnoea at rest or requiring ventilatory support</td>
</tr>
</tbody>
</table>

Ensure the patient is not neutropenic

Enquire regarding signs of sepsis/productive cough (Escalate to Grade Red as appropriate)

Anaemia – consider correction

If there is a history of underlying chest complaints e.g. asthma, COPD:
- Advise patients around usual management of exacerbations and advise to discuss with GP or other associated health professional managing this condition.
- Advise to contact the chemotherapy helpline if symptoms persist or worsen or if they develop any other problems/toxicities
- Inform the Acute Oncology Team who will contact the patient the next day to assess.

Ensure the patient is not neutropenic – treat immediately with antibiotics if neutropenic sepsis suspected

Admit if evidence of
- Desaturation
- Infection
- Other chemotherapy toxicities

For management of:
- SVCO - see guideline 18
- Pleural effusion - see guideline 24

Pneumonitis may be drug or radiation related. Discuss with Acute Oncology Team.

Manage all other causes in accordance with trust local guidelines depending upon differential diagnosis.

**Interrupt** SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team.

Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible
**Guideline 8.**

**FATIGUE**

Fatigue is a subjective unpleasant symptom which incorporates total body feelings ranging from tiredness to exhaustion creating an unrelenting overall condition that interferes with the individuals' ability to function to their normal capacity.

**Time to medical assessment/interview** 15 minutes  (Canadian ED Triage & Acuity Scale)

---

**Initial Assessment**

**Identify:** All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to guidelines.

**Observations:** Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score.

**AVPU** (Alert Voice Pain Unresponsive)

**Investigations:** Urgent. Full blood count, U&E, G&S, CRP, consider blood cultures

**Questions:**
- Cancer diagnosis/primary disease
- Is the patient receiving or post chemotherapy/radiotherapy?
- How many days has the patient been feeling like this?
- Does the patient have any pain and what are the pain killers?
- Are they able to eat and/or drink?
- Are they short of breath?
- Are they able to mobilise – ambulant – performance status?
- Are they passing usual amounts of urine and are bowels functioning normally?
- Patient mood?

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<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased fatigue but not altering normal activities</td>
<td>Moderate or causing difficulty performing some activities</td>
<td>Severe or loss of ability to perform some activities</td>
<td>Bedridden or disabling</td>
</tr>
</tbody>
</table>

---

**Assess risk of Neutropenia/pancytopenia**

**Advice;**

- Encourage diet and fluids.
- Rest.
- Advise to contact the helpline if symptoms persist or worsen or if they develop any other problems/toxicities.

**Phone / review the patient in 24 hours.**

**Interrupt** SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.

---

**Ensure the patient is not neutropenic/pancytopenic and treat accordingly**

- Admit if evidence of
  - Dehydration
  - Infection
  - Poor oral intake
  - Other chemotherapy toxicities

**Contact treating oncology/haematology team to get advice on continuing anticancer therapy and consider possible disease progression**

---

**Ensure the patient is not neutropenic/pancytopenic and treat accordingly**

- Admit for
  - Monitoring and on going assessment
  - Management according to symptoms/blood results

**Contact treating oncology/haematology team to get advice on continuing anticancer therapy and consider possible disease progression**

---

24/01/2013  UKONS Acute Oncology Initial Management Guidelines  16
Guideline 9. HYPERSENSITIVITY/ALLERGIC REACTION
Requires IMMEDIATE medical intervention and assessment!

Hypersensitivity or an allergic reaction is an inappropriate and excessive reaction to an allergen (as pollen or dust or animal hair or certain drugs or foods); severity ranges from mild allergy to severe systemic reactions leading to anaphylactic shock if left untreated.

Initial Assessment
Identify: All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to approved guidelines.
Investigations: Urgent Full blood count, U&E, LFT, clotting screen, CXR, AXR, abdominal USS.
Signs and symptoms: bronchospasm, cough, dizziness, dyspnoea, headache, hypertension, hypotension, nausea, vomiting, urticaria, tachycardia, rigors/chills, pruritis/itching, arthralgia, myalgia, asthenia, rash

Questions:
• Cancer diagnosis/primary disease
• Differential diagnosis would include infusion reaction; cytokine release syndrome

Ensure the patient is not neutropenic
Treat reaction in line with local guidelines/policy

Arrange for elective admission in accordance with local guidelines/practice

Prophylactic medications indicated for 24 hours

If discharged - advise to contact the chemotherapy helpline if symptoms persist or worsen or if they develop any other problems/toxicities.

Treat as an emergency according to anaphylaxis guidelines.
Hospital admission required for clinical sequelae (e.g. renal impairment, pulmonary infiltrates)

Ensure the patient is not neutropenic – treat immediately with antibiotics if neutropenic sepsis suspected

Admit as an emergency and arrange for on-going urgent intervention/treatment

Manage in accordance with trust local guidelines depending upon differential diagnosis

STOP! SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team.

Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible

24/01/2013
UKONS Acute Oncology Initial Management Guidelines
Guideline 10. SUSPECTED METASTATIC SPINAL CORD COMPRESSION (MSCC) Requires IMMEDIATE medical assessment/interview!

MSCC is due to a pathological vertebral body collapse or direct tumour growth causing compression of the spinal cord. Irreversible neurological damage ensues with resulting paraplegia. Early diagnosis and treatment is essential.

Initial Assessment
Identify:
• All patients with known diagnosis/history of, or suspected cancer. Please note all patients should start treatment within 24 hours once a diagnosis of MSCC is confirmed with results of MRI.
• All patients within 6/52 of chemotherapy. These Patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to guidelines.

Observations: Neurological observations, temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score. AVPU (Alert Voice Pain Unresponsive).

Investigations: Urgent Full blood count, U&E, LFT, G&S, Ca, MRI scan to be performed within 24 hours of arrival.

Questions:
• How long has patient experienced symptoms?
• Does the patient have severe progressive pain?
• Does the patient have new onset spinal nerve root pain, such as burning, numbness or shooting?
• Does the patient have difficulty in walking?
• Reduced power/altered sensation to limbs?
• Does the patient have altered bowel function/bladder disturbance/incontinence?

Grade 1 (Green) Should be managed as RED
Mild parasthesia, subjective weakness; no objective findings

Grade 2 (Amber) Severe sensory loss, parasthesia or weakness that interferes with function
Mild or moderate sensory loss, moderate parasthesia, mild weakness with no loss of function

Grade 3 (Red) Paralysis

Grade 4 (Red)

Investigate/examine to rule out spinal cord compression – arrange for MSCC
Co-ordinator to examine the patient
If patient does not attend for assessment, advise to contact the helpline immediately if symptoms persist or worsen or if they develop any other problems/toxicities
Advises on pain control if necessary
Inform the Acute Oncology Team who will contact the next day to assess patient.

• Investigate/examine to rule out spinal cord compression, MRI scan to be performed within 24 hours of arrival
• Treat as unstable spine until MRI results
• Admit for monitoring and ongoing assessment
• Contact MSCC coordinator or oncologist on call to assess and plan treatment – radiotherapy or surgery if required
• Steroids
• Pain control
• Please consider Cancer of Unknown Primary (CUP) guideline 21 on pg. 33 for patients who present with metastatic disease without a previous diagnosis of cancer
• Detailed national guidelines for further management can be found at NICE Metastatic Spinal Cord Compression:

http://pathways.nice.org.uk/pathways/metastatic-spinal-cord-compression#

Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team.
Ensure that the Acute Oncology Team are informed of the patients' admission/assessment as soon as possible.
**Guideline 11. MUCOSITIS/STOMATITIS/OESOPHAGITIS**

An inflammatory reaction of the mucous lining of the upper gastrointestinal tract from mouth to stomach (mouth, lips, throat) and surrounding soft tissues.

**Time to medical assessment/interview** → 15 minutes  
(Canadian ED Triage & Acuity Scale)

**Initial Assessment**

**Identify:** All patients within 6 /52 of chemotherapy and/or radiotherapy or who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to approved guidelines.

**Observations:** Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score. AVPU (Alert Voice Pain Unresponsive).

**Investigations:** Urgent Full blood count, U&E

**Questions:**
- Does the patient have any blisters, ulcers or white patches on tongue, lips or mouth?
- Do the patient have any pain or bleeding from the mouth?
- Are they able to eat and/or drink?
- Does eating or swallowing make the pain worse?
- Are they using any mouthwashes, pain killers or other treatments within the mouth?
- Do they also have diarrhoea?
- Are they passing usual amounts of urine?
- Has the patient undergone peripheral blood stem cell transplant (PBSCT)? If yes, contact haematology

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Painless ulcers, erythema or mild soreness, able to eat and drink.</td>
<td>Painful erythema, oedema or ulcers but able to eat and drink</td>
<td>Painful erythema, oedema or ulcers difficulty with eating and drinking</td>
<td>Requires parental or enteral support. Unable to eat or drink.</td>
</tr>
</tbody>
</table>

**Assess risk of neutropenia and manage as per local guideline.**

**Mouth care advice, mouthwash.**

**Analgesia:**
- Avoid antipyretic analgesics if there is a risk of neutropenia.

**Assess for thrush and arrange for fluconazole to be prescribed if required.**

**Advise to contact the helpline if symptoms persist or worsen or if they develop any other problems/toxicities.**

**Inform the Acute oncology Team who will contact the next day to assess patient.**

**Ensure the patient is not neutropenic.**

**Admit** if evidence of:
- Dehydration
- Infection
- Poor oral intake
- Other chemotherapy toxicities

**Mouth care advice**

**Mouthwash**

**Analgesia**

**Assess for thrush and arrange for fluconazole to be prescribed if required.**

**Ensure the patient is not neutropenic.**

**Admit** for:
- Monitoring and ongoing assessment
- Parenteral hydration
- Analgesia
- Mouth care/mouth wash

**Assess for thrush and arrange for fluconazole to be prescribed if required.**

---

**Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team.**

Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible

---

**Please see following page for further management guidelines.**
MUCOSITIS

Initial assessment

- **History to include** other chemotherapy/radiotherapy toxicities (risk of damage to rest of GI tract – nausea/diarrhoea/sepsis – manage these according to local guidelines)
- Careful examination of mucous membranes – erythema, ulceration, signs of secondary infection (bacterial or fungal), signs of dehydration
- Assessment of fluid balance status (BP, pulse etc.) and signs of systemic infection
- Check bloods – renal function, FBC, CRP, lactate, blood cultures if signs of systemic sepsis
- Swab any areas suspicious of secondary infection from bacteria, viruses or fungi

Initial management

These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis.
If present, this should be managed according to guidelines.

- Establish IV access if any signs of dehydration or sepsis
- Intravenous fluids according to fluid balance status and renal function
- Treat any infected mouth lesions as appropriate and adjust antibiotics according to clinical condition, myelosuppression, swab results and local antibiotic guidelines
- Good oral hygiene and mouthwash every 4-6 hours (see above).
- If painful:
  1) Difflam mouthwash (dilute 1:1 if stings) or sucralfate suspension
  2) Analgesia: low dose oral or subcutaneous opiates
     (NB avoid aspirin/paracetemol/co-codamol if risk of neutropenia and sepsis)
- If thrush: Fluconazole – adjust dose in hepatic/renal impairment and consider IV
- If ulcers: Topical acyclovir for lips/oral acyclovir for herpes infection in mouth
- If on continuous chemotherapy (e.g. capecitabine or continuous 5-FU,) interrupt administration and discuss with oncology team.

On-going management

- Reassess daily (close monitoring of routine observations as at risk of infection)
- Observe for development of diarrhoea, sepsis, neutropenia, pain
- Fluid balance or daily weights
- Daily full blood count
- Dietetic review in case nutritional support is required
- Contact specialist team supervising cancer treatment for further advice as an adjustment of subsequent doses of treatment may be necessary
- Document assessment and/or admission in patient records.
**Guideline 12. NAUSEA**

Nausea is the sensation of being about to vomit. Acute chemotherapy induced nausea usually presents within the first 24 hours of receiving treatment. Delayed nausea may present any time after the first 24 hours and continues for up to 6 or 7 days after treatment.

**Time to medical assessment/interview** | **15 minutes** (Canadian ED Triage & Acuity Scale)
---|---

### Initial Assessment

**Identify:** All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to guidelines.

**Observations:** Temperature, pulse, blood pressure, respiration rate, O2 saturation.

**Investigations: Urgent** Full blood count, U&E, LFTs, bone profile, blood cultures and CRP if pyrexial.

**Questions:**
- Frequency and nature of nausea with or without vomiting?
- Assess bowel movements; Any symptoms that suggest constipation? Any diarrhoea? Bowel obstruction?
- What food and fluids have you been taking over last few days?
- Any evidence of reflux / gastritis?
- Any signs of dehydration e.g. decreased urine output, fever, thirst, dry mucous membranes etc.
- What is the underlying cancer diagnosis?
- What is the extent of the disease? – e.g. known metastases to brain, bone, liver etc.
- What medication is the patient taking and has there been any recent changes?
- Is the patient currently receiving chemotherapy? Radiotherapy? (especially to brain, liver, GI Tract)
- Increasing abdominal pain?

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<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of appetite without alteration in eating habits</td>
<td>Oral intake decreased without significant weight loss, dehydration or malnutrition</td>
<td>Inadequate oral caloric or fluid intake; tube feeding, TPN, or hospitalisation indicated</td>
<td>No oral intake. Life threatening consequences</td>
</tr>
</tbody>
</table>

Review prescribed antiemetic medication make sure dose / route and frequency are appropriate. Assess patient compliance

When cause has been clearly identified, change antiemetic in line with local policy directions

Advise self help measures:
- Frequent small sips of fluid, eat small amounts often, try ginger biscuits, ginger / mint tea

Encourage patient to make contact again if symptoms persist or worsen.

Phone / review the patient in 24 hours

Admit for assessment, IV fluids and electrolyte replacement as appropriate

Fully investigate cause;
- disease related e.g. brain or liver metastases, hypercalcaemia, obstruction.
- Medication related e.g. chemotherapy, opiates etc.

Prescribe antiemetic as appropriate to cause

Contact Acute Oncology/Haematology Team who may consider substitution, discontinuation of oral chemotherapy if appropriate.

**Interrupt** SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team.

Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.
**Guideline 13. SUSPECTED NEUTROPENIC SEPSIS** Requires URGENT MEDICAL assessment/interview!

Diagnose neutropenic sepsis in patients having anti cancer treatment whose neutrophil count is 0.5 $10^9$ per litre or lower and who have either: a temperature of **38 C or above** or other signs or symptoms consistent with clinically significant sepsis. Patients on chemotherapy, radiotherapy or immunocompromised patients (HIV, known immune deficiency, malignancy) are at risk. **NICE Neutropenic Sepsis link:** [http://pathways.nice.org.uk/pathways/neutropenic-sepsis](http://pathways.nice.org.uk/pathways/neutropenic-sepsis)

Always discuss these patients with the Acute Oncology Team/Acute Oncology Consultant on call before considering discharge.

---

**Triage assessment**

**Identify:** All patients within 6/52 chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant

**Assume:** Neutropenic sepsis until proven otherwise

**Observations:** Temp, pulse, BP, RR, $O_2$ sats, Alert Voice Pain Unresponsive (AVPU) and assess urine output

**Commence:** Early Warning Score chart

**I.V. Access:** Blood **rapidly** to Lab for: Blood cultures, FBC, Coagulation screen, U&Es, Glucose, LFTs (Including albumin) Ca$^2+$, PO4$^-$, Mg$^2+$, urate, CRP and lactate.

---

**Resuscitation Management:**

- **Triage Red**
- **Resuscitation room**
- **Optimise haemodynamics & $O_2$ delivery**
- **Initiate 1st line antibiotics**
- **Transfer HDU/ICU**

---

**Yes**

Severe sepsis?

- Altered mental state or
- Hypoxia ($O_2$ sats < 94%) or
- Shock (Sys BP < 90 mmHg)

---

**No**

**Medical Assessment**

**Identify:** Potential sources of infection

**Rx:** Presenting complaint/co-morbidity

**Tx:** ECG, ABGs Lactate, Urinalysis, Swabs

*Do not perform a chest X-ray unless clinically indicated.*

---

**Commence Neutropenic sepsis regimen:**

- **DO NOT DELAY** for lab confirmation
- **Supplemental $O_2**
- **Initiate 1st line antibiotics**
- **1L 0.9% sodium chloride** over 1-2 hours
- **Differentiate between sepsis and neutropenic sepsis**
- **Supportive measures**
- **Admit to appropriate area**

---

**Yes**

Early Sepsis?

- **Temp $>$ 38$^c$ or $<$ 36$^c$ or
- **Pulse $>$ 90 or
- **RR $>$ 20**

---

**No**

Consider admission if neutropenic $< 1.0 \times 10^9/L$ with low grade pyrexia and/ or unwell patient

---

**Lab Confirmation**

Neutrophils $<$ 0.5 $\times 10^9/L$

*Regardless of overall WCC*

---

Assess the patient’s risk of septic complications according to NICE guidelines. If low grade, discharge only if:

- **Physiologically stable**
- **When co-morbidity treated**
- **Neutropenic sepsis advice has been reinforced**

---

1st line antibiotics in neutropenic sepsis as per NICE guideline: Offer beta lactam monotherapy with piperacillin with tazobactam as initial empiric antibiotic therapy to patients with suspected neutropenic sepsis who need intravenous treatment unless there are patient-specific or local microbiological contraindications.
SUSPECTED NEUTROPENIC SEPSIS KEY PRINCIPLES

Patients within six weeks of chemotherapy should be considered to be neutropenic until otherwise demonstrated. If the patient presents in a non-specialist environment, contact must be made immediately to the acute oncology team at the treating unit. **Door to needle time for first antibiotics should be less than one hour.**

Patients should be closely monitored and the patient’s risk of septic complications frequently reassessed using a validated risk scoring system (NICE 2012). Subsequent treatment should occur in an environment where appropriate skills and expertise are available. If a patient continues to deteriorate despite initial treatment their condition should be discussed urgently with a senior clinician.


---

**DAY ONE – Day of Admission**

**Monitoring**

Early Warning Score Chart
Every 15 minutes initially then regular monitoring according to patients condition.

**Chemotherapy drugs**

Discontinue on admission; ensure safe disposal of unused chemotherapy

**Antimicrobials**

**Ist line antibiotics in neutropenic sepsis as per NICE guideline:** Offer beta lactam monotherapy with piperacillin with tazobactam as initial empiric antibiotic therapy to patients with suspected neutropenic sepsis who need intravenous treatment unless there are patient-specific or local microbiological contraindications.

**Additional antimicrobials: Therapeutic monitoring/dose adjustment**
Liaise with Pharmacy & Microbiology.

Do not offer an aminoglycoside, either as monotherapy or in dual therapy, for the initial empiric treatment of suspected neutropenic sepsis unless there are patient-specific or local microbiological indications.

**Cultures**

Blood culture from central lines and peripherally, sputum, urine, swabs-throat & skin lesions.
Liaise with microbiology prior to altering regimen.
Do not remove central venous access devices as part of the initial empiric management of suspected neutropenic sepsis.

**Fluid and Electrolyte Balance**

Aggressive fluid replacement in dehydration. Hourly urine output measurement. Replace Na⁺ and K⁺ judiciously
Early critical care management if deterioration, severe sepsis (any evidence of organ failure) or suspected invasive fungal infection.

**Neutropenia (NPL < 0.5 x 10¹²L⁻¹)**

---

**DAY TWO**

**Monitoring**

EWS Chart x 6 daily (every 4 hours); Daily FBC.

**Chemotherapy drugs**

Do not recommence - requires oncology review.

**Antimicrobials**

**Improving?**

Assess if all antibiotics still required and route of administration. Discontinue empiric antibiotic therapy in patients whose neutropenic sepsis has responded to treatment, irrespective of neutrophil count.

*Unresponsive fever 48 hours?*

Do not switch initial empiric antibiotics in patients with unresponsive fever unless there is clinical deterioration or a microbiological indication. Continue inpatient therapy in all patients who have unresponsive fever unless an alternative cause of fever is likely.

**Cultures**

Liaise with microbiology re interim results
Re-culture patient before changing antimicrobials.

**Fluid and Electrolyte Balance**

Maintenance fluids as required
Continue to monitor electrolytes daily

24/01/2013

UKONS Acute Oncology Initial Management Guidelines
Guideline 14  
PALMAR - PLANTAR ERYTHRODYSAESTHESIA (PPE)

Also known as hand foot syndrome, PPE is a distinctive localised cutaneous reaction to certain antineoplastic agents. Symptoms include: Tingling or burning, redness, flaking/dryness, swelling, small blisters, sores on palms and/or soles.

Time to medical assessment/interview 15 minutes (Canadian ED Triage & Acuity Scale)

Initial Assessment

Identify: All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to guidelines.


Investigations: Urgent Full blood count, U&E

Questions:
• What chemotherapy regimen is the patient on?
• When was the last dose?
• Is this a continuous intravenous administration? E.g. 5-flourouracil
• Is the patient still taking oral chemotherapy? E.g. capecitabine, sunitinib.
• Is the patient otherwise well?
• Any other symptoms e.g. diarrhoea / stomatitis (if yes refer to specific management guidelines) and please contact the Acute Oncology Team.
• Have they experienced this side effect before on previous treatment cycles?

<table>
<thead>
<tr>
<th>Grade 1 (Green)</th>
<th>Grade 2 (Amber)</th>
<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal skin changes or dermatitis (e.g. erythema) without pain</td>
<td>Skin changes (e.g. peeling, blister, bleeding, oedema) or pain, not interfering with function</td>
<td>Ulcerative dermatitis or skin change with pain, interfering with function</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Reassure the patient that this is normal, generally nothing to worry about and associated with treatment.

Emphasise the importance of skin care regime.

Ask patient to contact chemotherapy team if symptoms worsen.

Stop the medication and withhold until discussed with AOT or prescribing team. Consider withholding treatment until resolved to grade 0 – 1.

Reassure the patient that this is normal, generally nothing to worry about and associated with treatment.

Emphasise the importance of skin care regime.

Consider use of pyridoxine as per local policy.

Stop the medication.

Inform Acute Oncology Team.

Review current analgesia and consider paracetamol if indicated (with caution as may not then develop a temperature in response to infection).

Emphasise the importance of continuing skin care regime.

Withhold further treatment until resolved to grade 0-1 consultant in charge to consider drug dose reduction for further cycles or discontinuation of drug as per guidance.

Consider use of pyridoxine as per local policy.

Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.

24/01/2013  
UKONS Acute Oncology Initial Management Guidelines
Guideline 15. **SKIN RASH**

Skin rash can be a side effect of:

- **Chemotherapy and non-chemotherapy drugs:** Drug rashes are usually mild, widespread red rashes with no other symptoms; Rash is particularly frequent and severe with EGFR antagonists e.g. oral TKIs erlotinib/lapatinib or iv antibodies e.g. panitumumab/cetuximab. Rashes can occur with 5-FU/capecitabine/suitinib (if only palms and soles then see palmar - plantar erythrodysaesthesia (hand foot syndrome) guideline 14.)
- **Radiotherapy:** radiation toxicity.
- **Graft Versus Host Disease** in a patient who has undergone allogeneic bone Marrow transplant.
- **Illnesses or infection** e.g. shingles, chicken pox, impetigo, cellulitis, allergic reaction.

**Time to medical assessment/interview** 15 minutes (Canadian ED Triage & Acuity Scale)

**Initial Assessment:**

**Identify:** All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of:

- Neutropenic fever and sepsis
- Thrombocytopenia due to reduced marrow production or marrow infiltration
- Graft versus host disease

If present, these conditions should be managed according to guidelines.

**Observations:** Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score. AVPU.

**Investigations:** Urgent Full blood count, U&E, LFT.

**Questions:**

- What chemotherapy regimen is the patient receiving and when was the last treatment?
- Are they on any chemotherapy drugs where Skin rash is a commonly-associated and often serious toxicity, for example; ERLOTINIB, GEFITINIB, CETUXIMAB, PANITUMUMAB or CAPECITABINE if so please see specific DRUG INFORMATION SHEET in addition to general guidance and contact the Acute Oncology Team for advice.
- Has the patient received radiotherapy recently?
- Has the patient had a stem cell/ bone marrow transplant? (graft versus host disease).
- Has the patient recently started any other medication including antibiotics?
- Do the patient have a history of skin complaints?
- Where is the skin rash and what does it look like (localised/widespread, flat/raised, pustules/ulcers/peeling/fluid filled vesicles/bleeding) Does the rash itch? (if itch only, consider liver/kidney problems/ dry skin/ allergy)
- Is the patient otherwise well?
- Does the patient have any signs of infection e.g. pain, swelling, pustules, fever, discharge?
- Has the patient been in recent contact with shingles/chicken pox? Has the patient ever had chicken pox?

**Skin rash – Toxicity grading (NB toxicity scale different for EGFR antagonists)**

<table>
<thead>
<tr>
<th>Grade 1(Green)</th>
<th>Grade 2(Amber)</th>
<th>Grade 3(Re)</th>
<th>Grade 4(Re)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scattered macular or papular eruption or erythema that is asymptomatic</td>
<td>Scattered macular or papular eruption or erythema with pruritis or other associated symptoms</td>
<td>Generalised symptomatic macular, papular or vesicular eruption</td>
<td>Exfoliative dermatitis or ulcerating dermatitis</td>
</tr>
</tbody>
</table>

**Ensure not neutropenic or thrombocytopenic**

- Discuss with Acute Oncology Team and advise:
  - Good fluid intake
  - Avoid hot baths/tight clothes
  - Sun block, hat and avoid sun exposure
  - Mild soaps/cleansers/detergents
  - Hypoallergenic make up
  - Moisturiser (alcohol free, hypoallergenic)
  - Anti-histamines, topical creams/lotions e.g. E45

**Ensure not neutropenic or thrombocytopenic**

- General advice as for Grades 1 and 2
- Analgesia
- Interrupt treatment until discussed with the Acute Oncology Team.

**Ensure not neutropenic or thrombocytopenic**

- General advice as for Grades 1 and 2
- Analgesia
- Stop treatment until discussed with the Acute Oncology Team.
- Dermatology review
- Consider admission for support and further assessment.

**Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team.**

Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.

24/01/2013  UKONS Acute Oncology Initial Management Guidelines
Management of patients admitted with skin rashes:

Identify: All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of:
- Neutropenic fever and sepsis
- Thrombocytopenia due to reduced marrow production or marrow infiltration
- Graft versus host disease in a patient who has undergone allogeneic bone Marrow transplant.

If present, these conditions should be managed according to approved guidelines.

Observations: Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score.

Investigations: Urgent Full blood count, U&E, CRP, blood cultures if signs of systemic sepsis. Swab any areas suspicious of secondary infection from bacteria, viruses or fungi

History to include:
Other chemotherapy toxicities – manage these according to approved guidelines
Are they on any chemotherapy drugs where skin rash is a commonly-associated and often serious toxicity, for example; ERLOTINIB, GEFITINIB, CETUXIMAB, PANITUMUMAB or CAPECITABINE if so please see specific DRUG INFORMATION SHEET in addition to general guidance and contact the Acute Oncology Team for advice.

Initial management:
Assessment of fluid balance status, establish IV access if any signs of dehydration or sepsis
Intravenous fluids according to fluid balance status and renal function
Treat any infected lesions as appropriate and adjust antibiotics according to clinical condition, myelosuppression, swab results and local antibiotic guidelines
Delineate and record area affected area
Check platelet count – rash may be secondary to thrombocytopenia
If ulcers: Topical acyclovir for lips/oral acyclovir for herpes infection in mouth. Haematology – consider IV acyclovir
If on continuous or oral chemotherapy (e.g. capecitabine or continuous 5-FU) stop/interrupt treatment and discuss with oncology team.
Contact acute oncology team supervising cancer treatment for further advice.

On-going management:
Reassess daily (close monitoring of routine observations as at risk of infection)
Observe for development of sepsis, neutropenia, or other chemotherapy toxicities
Fluid balance or daily weights
Daily full blood count
Dermatology review if concerns/uncertainty of diagnosis

Ensure general care measures:
Good fluid intake
Keep area clean and dry
Avoid hot baths/tight clothes
Mild soaps/cleansers/detergents

Consider Prescribing:
Topical creams/lotions (alcohol free, hypoallergenic e.g. E45) – apply regularly to all affected areas
Anti-histamines if rash causes itchiness
Analgesia if painful (caution with paracetemol/aspirin if risk of neutropenic sepsis)
Treat infections according to likely organisms (follow local guidelines)
Inform acute oncology team for further advice/ to ensure next chemotherapy dose is adjusted

Radiation skin reactions:
For further information on Radiation skin Reactions please see link below:-

VOMITING
The forceful expulsion of the contents of one’s stomach through the mouth and sometimes the nose.

Time to medical assessment/interview → 15 minutes (Canadian ED Triage & Acuity Scale)

Initial Assessment
Identify: All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to guidelines.

Observations: Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score.

Investigations: Urgent Full blood count, U&E, CRP, LFTs, bone profile, blood cultures and CRP if pyrexial.

Questions:
- Frequency and nature of nausea with or without vomiting?
- Assess bowel movements; Any symptoms that suggest constipation? Any diarrhoea?
- What food and fluids have you been taking over last few days?
- Any evidence of reflux / gastritis?
- Any signs of dehydration e.g. decreased urine output, fever, thirst, dry mucous membranes etc.
- What is the underlying cancer diagnosis?
- What is the extent of the disease? – e.g. known metastases to brain, bone, liver etc.
- What medication is the patient taking and has there been any recent changes?
- Is the patient currently receiving chemotherapy? Radiotherapy? (especially to brain, liver GI Tract)
- Increasing abdominal pain?

<table>
<thead>
<tr>
<th>Grade 1 (Green)</th>
<th>Grade 2 (Amber)</th>
<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 2 episodes</td>
<td>3 - 5 episodes</td>
<td>&gt;6 episodes (separated by 5 minutes) in 24 hours</td>
<td>&gt;10 episodes in 24 hours (separated by 5 minutes)</td>
</tr>
<tr>
<td>(separated by 5 minutes) in 24 hours</td>
<td>(separated by 5 minutes) in 24 hours</td>
<td>tube feeding, TPN or hospitalisation indicated</td>
<td>Life-threatening consequences; urgent intervention indicated</td>
</tr>
</tbody>
</table>

- Review prescribed antiemetic medication; make sure dose / route and frequency are appropriate.
- Assess patient compliance and reinforce antiemetic advice.
- Ask patient to monitor for signs of dehydration.
- Advise self helps measures: Frequent small sips of fluid, eat small amounts often, try ginger biscuits, ginger / mint tea.
- Encourage patient to make contact again if symptoms persist or worsen.
- If symptoms worsen or are associated with other toxicities consider admission.

As for grade 1
Advise to get GP review consider changing antiemetic including route of admin.
Encourage patient to make contact again if symptoms persist or worsen.

Admit for assessment, IV fluids and electrolyte replacement as appropriate.

- Fully investigate cause e.g. disease related e.g., brain or liver metastases, hyperkalaemia, obstruction.
- Medication related e.g. chemotherapy, opiates etc.
- Prescribe antiemetic as appropriate to above.
- Contact oncology/haematology team who may consider substitution, discontinuation of oral chemotherapy if appropriate.

Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team.
Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.

24/01/2013
UKONS Acute Oncology Initial Management Guidelines
Guideline 17. ABDOMINAL ASCITES (Active Management Pathway)

Ascites is the accumulation of protein rich fluid in the peritoneal cavity and can be classed as an exudate or transudate. Ascites typically develops in the setting of recurrent and/or advanced cancer, the commonest sites being ovarian, breast and colo-rectal.

Time to medical assessment/interview ➔ 15 minutes (Canadian ED Triage & Acuity Scale)

Initial Assessment

Identify: All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to approved guidelines.

Observations: Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score.

Investigations: Urgent Full blood count, U&E, LFT, Clotting screen; CXR, AXR, Abdominal USS

Signs and symptoms: abdominal pain and distension; dyspnoea; bulging flanks with dullness to percussion; nausea; vomiting.

Questions:
• Cancer diagnosis/primary disease
• Differential diagnosis would include liver disease

<table>
<thead>
<tr>
<th>Grade 1 (Green)</th>
<th>Grade 2 (Amber)</th>
<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymptomatic; clinical or diagnostic observations only; intervention not indicated</td>
<td>Symptomatic; medical intervention indicated</td>
<td>Severe symptoms; invasive intervention indicated</td>
<td>Life threatening consequences; urgent operative intervention indicated</td>
</tr>
</tbody>
</table>

Ensure the patient is not neutropenic

Arrange for elective admission in accordance with local guidelines/practice

Advise to contact the chemotherapy helpline if symptoms persist or worsen or if they develop any other problems/toxicities

Ensure the patient is not neutropenic – treat immediately with antibiotics if neutropenic sepsis suspected

Admit as an emergency and arrange for urgent intervention/treatment

Manage in accordance with trust local guidelines depending upon differential diagnosis

Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible
Guideline 18. Acute cerebral/other CNS oedema and/or cerebral space occupying lesion. (Active Management Pathway)

**Acute cerebral /other CNS oedema** – may be disease related e.g. developing around an intrinsic lesion within the brain tissue e.g. a tumour or an abscess or treatment related in the patient who is receiving radiotherapy.

**Cerebral space occupying lesion** – may be primary disease site or metastatic deposits.

### Initial Assessment

**Identify:**
- All patients known to have primary or metastatic cerebral tumours
- All patients are currently receiving or have recently completed radiotherapy treatment
- All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to approved guidelines.

**Observations:** Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score. AVPU (Alert Voice Pain Unresponsive).

**Investigations:** **Urgent** Full blood count, U&E, **Urgent** CT scan of head (If CT negative and strong suspicion of brain lesion, due to clinical presentation, consider MRI brain).

Full Clinical / neurological assessment

**Signs and symptoms may include:** New onset of seizures, headache, visual disturbance, nausea and/or vomiting cognitive dysfunction, confusion, disorientation and/or memory loss, motor dysfunction, symptoms of stroke.

**Questions:**
- Cancer diagnosis/primary disease
- Are the presenting symptoms new
- Are there any co-existing conditions such as epilepsy, hypertension or medication that may account for the patients symptoms.

### Table: Grades of Neurological Impairment

<table>
<thead>
<tr>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully functional status (i.e. able to work) with minor neurologic findings, no medication needed</td>
<td>Neurologic findings present sufficient to require home care, nursing assistance may be required. Medications including steroids/anti-seizure agents may be required</td>
<td>Neurologic findings requiring hospitalisation for initial management</td>
<td>Serious neurologic impairment which includes paralysis, coma or seizures&gt;3 per week despite medication/hospitalisation required</td>
</tr>
</tbody>
</table>

**Action:**

- Commence dexamethasone 8 -16mg oral OD (IV if required) with PPI cover.
- Anti-epileptic medication if patient having convulsions.
- Admit for monitoring and care. Patients should not be discharged until they have been reviewed by the Acute Oncology Team.

**Action:**

- Dexamethasone 16mg oral OD (IV if required) with PPI cover.
- Anti-epileptic medication if patient having convulsions.
- Admit for monitoring, on going assessment and management in accordance with local trust guidelines.
- Early critical care management/advice if deterioration.

(see note of caution in patients with no previous known malignancy; If lymphoma commencing steroids could dissolve tumour and prevent histology from being obtained)

**Referral to the Acute Oncology Team is recommended for all patients.**

Patients with no known malignancy will require neurosurgical referral

Patients with known primary disease presenting with metastatic disease may require referral to the Brain and CNS MDT.

Patients on active anti - cancer treatment will require oncological review prior to further treatment.

Consider palliative care referral in patients with poor performance status, advanced disease, for symptom control advice.

24/01/2013

UKONS Acute Oncology Initial Management Guidelines
Guideline 19. CARCINOMATOUS LYMPHANGITIS (Active Management Pathway)

Background:
Carcinomatous lymphangitis refers to a diffuse infiltration and obstruction of the pulmonary parenchymal lymphatic channels. It is associated with many malignancies but 80% are adenocarcinomas, predominantly breast, but also lung, colon and stomach.

Clinical presentation:
Clinically patients present with increasing breathlessness, though they may also have a progressive dry cough or haemoptysis. Radiation pneumonitis/treatment related pulmonary fibrosis should be considered as can cause similar symptoms.

Diagnosis is based on clinical suspicion in a patient with metastatic cancer and appropriate symptoms. Chest X-rays can appear normal in 30-50% of cases, but characteristic changes include:

• Bronchovascular markings with irregular outlines
• Reticular-nodular shadowing
• Bilateral lower lobe changes

Other more general changes include:
• Hilar and mediastinal lymphadenopathy
• Pleural effusions.

High resolution CT Scanning is the investigation of choice if CXRs are equivocal or the clinical picture is not obvious.

Treatment:
Corticosteroids (such as dexamethasone 4mg bd, with appropriate PPI cover and not be taken later than 2pm to avoid insomnia) may be beneficial to aid in the management of the associated dyspnoea.

Discussion with the patient’s oncology team is warranted as to whether there are any systemic oncological treatments available, as treating the malignancy itself is the only long term option.

Unfortunately the prognosis of patients who develop carcinomatous lymphangitis is poor, with less than 50% surviving 3 months.

• Consider urgent referral to the palliative care team for symptom management and advice.

Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.
Guideline 20. CENTRAL VENOUS ACCESS DEVICES (CVAD) PROBLEM MANAGEMENT
RISKS AND COMPLICATIONS.

There are several risks and complications related to the insertion and maintenance of CVAD’s. They have been briefly discussed below. If you have any concerns relating to any of the following problems please refer to your Local Management Guidelines and contact your Acute Oncology Team.

Infection
Localized infection: Tunnel infections can occur in skin tunnelled CVADs. The insertion site should be examined prior to access and/or daily by HCP or self monitoring for any signs of redness, swelling or discharge, pain or tenderness at the exit site. (Absence of discharge does not rule out local infection because if a patient is neutropenic, pus may not be produced). If the patient is well and apyrexial, localized infection can be treated with oral or intravenous antibiotics according to the clinical condition of the patient at that time. Lack of response to antibiotics should be acted upon quickly so that infection does not progress further.

Luminal infection: Often presents as pyrexia/shivers/rigor following catheter flushing. If untreated this can progress to septicemia. If a CVAD infection is suspected the patient should be admitted to hospital for blood cultures and intravenous antibiotics. This is a serious complication of CVADs and can be life threatening if the patient has recently received chemotherapy and is neutropenic.

Any health professional caring for a patient with a CVAD must be able to recognize the signs and symptoms of septicemia. First dose of antibiotics for patients with neutropenic sepsis should be delivered as per national directives within 1 hour of arrival to hospital to injection time (NCAG 2009)

Thrombosis
Thrombosis is the formation of a clot within a blood vessel. Signs and symptoms of thrombosis secondary to CVAD insertion include; pain in the shoulder or chest, swelling, auxiliary blood vessel formation. Thrombosis should be managed according to locally agreed guidelines.

Phlebitis
This is the inflammation of the intima of the vein and it can be mechanical or infective in origin.

Mechanical phlebitis is most common in PICCs and can occur within 72 hrs to a week of CVAD insertion.

Signs and symptoms include pain, erythema, warmth, and a venous cord may be palpable. Mechanical phlebitis can be treated effectively with application of heat pads every 4-6 hours for 20 minutes at a time. Patients should also be offered analgesia as required. CVADs should not be removed without seeking appropriate advice from the AOS Team

Haematoma
This results from uncontrolled bleeding around the site of insertion. It is a hard and painful swelling with infiltrated blood. Hirudoid cream can be used to aid dispersal of the haematoma: 5-15cm of cream applied over affected area up to 4 times daily and gently massaged into the skin. Firstly check if the patient is taking any anticoagulant therapy or Aspirin. Also check platelet count and clotting.

Air Embolus
This is a very rare complication. Methods to reduce the risk of air embolus should be used when inserting, accessing or removing a CVAD. Only health professionals trained and competent to do so should be inserting, accessing or removing. Local policies should be adhered to. If a patient suddenly becomes acutely short of breath and distressed, air embolism should be suspected. Check the CVAD for any obvious holes and clamp above if any are apparent. Lay the patient in left lateral Trendelenburg position and call for urgent medical assistance.
Catheter Migration
Although x-rayed following insertion and secured in place, the catheter tip can migrate from its desired position just above the right atrium. This can be due to the patient being very active, or the catheter not being secured properly or in the case of skin tunneled lines the Dacron cuff may slip due to poor anchorage of the tissues. The sign is the length of the catheter outside the body gets longer. It is important to always check the length before any manipulation of the catheter. If the Dacron cuff is visible or the length of the PICC is greater outside the body an x-ray will be required to confirm the position of the catheter tip. Symptoms of catheter migration can include pain in the neck and a rushing sound in the ear during flushing.

Catheter Damage
Any catheter can fracture or become damaged. Common causes are too much pressure being exerted during drug administration or the incorrect use of syringe size resulting in excess pressure. There may be a visible split or the drug may leak from a hole during administration. If damage is apparent then any drug therapy should be stopped. If it is an open-ended line that is split above the clamp, use an atraumatic clamp (or clamps covered in gauze) above the damaged area. Consider repairing the CVAD if appropriate.

Accidental Removal
Pressure should be applied to the exit/entry sites for approximately 5 minutes or until bleeding stops. Arrangements then need to be made for replacement of the line. Inspect line to ensure that it is intact if in doubt then X-ray confirmation is required.

Unable to aspirate blood
Patency of CVADs should be established prior to administration of any drug or solution (RCN 2010). This is to ensure that any risk of extravasation is minimized. Occlusion can be termed complete, partial or withdrawal occlusion. Complete occlusion can be due to a clot or drug precipitation within the line or a fibrin sheath completely enveloping the device. It results in an inability to either withdraw blood or infuse liquids. Partial occlusion can be due to a small blood clot within the line or an external obstruction, for example a twist or a kink in the line. It results in difficulty withdrawing blood. Withdrawal occlusion can result from a fibrin tail or malposition of the tip of the line and results with inability to withdraw blood but fluids can be administered with ease. Fibrin sheaths can form as quickly as 24 hours following insertion, fluids can be administered but aspiration of blood is impossible as the fibrin acts as a valve (Amersur 2007).

Unblocking Central Venous Catheters
Thrombolytics such as urokinase are used to re-establish patency of CVADs obstructed with intraluminal or extra luminal thrombus or fibrin sheath. This agent dissolves clots and fibrin. Thrombolytics should be prescribed by the medical staff and administered by staff who have been trained to do so, only after other reasons for catheter obstruction have been ruled out.

Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.
The aim of this pathway is to enable early identification of patients that would benefit from anti-cancer treatment and to prevent unnecessary investigations in those unfit for treatment.

Initial Assessment

Observations: Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score.

History: Full history including rate of change of symptoms. Assess and record current performance status and co-morbidities.

Examination: Complete clinical examination (including a breast, PR, PV, testicular and skin examination)

Laboratory Investigations:
- All patients: Full blood count, U&E, LFT, Creatinine, Calcium, LDH, CRP.
- Men with midline disease / brain metastases: Serum αFP and βhCG
- Women with pelvic or peritoneal disease: CA125
- Men with bone metastases: PSA
- Patients with liver only disease: αFP
- Consider myeloma screen - for bone lesion seen on scan with no obvious primary
- Urinalysis for blood

Note: other tumour markers are generally not useful in diagnosis

Imaging:
- CT thorax, abdomen and pelvis is the staging investigation of choice in most circumstances
- Other investigations (including endoscopies) only as indicated by signs and symptoms

Pathology:
- Patients with a solitary liver lesion should be referred to the appropriate local specialist team before biopsy
- All other patients, try to get biopsy (trucut if possible) for histology to guide future treatment
- Detailed clinical information on the request form is essential

Further management:
- If clinical, radiological and pathological findings suggest a specific cancer primary refer to relevant MDT (please see guidance below)
- Otherwise refer to unknown primary MDT and/or Acute Oncology Team (consider local protocol).
- Please ensure patient is informed of results and plan for onward referral
- Early referral to palliative care for advice on symptom management and continuing care should be considered where appropriate

Patterns of disease requiring URGENT specific action:
- Spinal cord compression – requires urgent admission and referral to spinal cord co-ordinator
- Men with midline disease – requires urgent referral to oncology (?germ cell)
- Superior Vena Cava Obstruction - requires urgent referral to lung MDT for consideration of stent
- Suspected lymphoma, myeloma, plasmacytoma – requires urgent referral to haematology

Patterns of disease requiring specific action:
- Men with bone metastases and elevated PSA – referral to urology MDT
- Women with axillary nodes – referral to breast surgeons/ MDT
- Women with peritoneal disease – referral to gynaecology /MDT, unless histology suggests non gynaecology origin
- Solitary liver lesion – requires referral to hepatobiliary MDT
- Neck nodes – requires referral to head and neck or neck nodes clinic as appropriate locally
- Isolated brain metastasis – requires referral to neurology MDT

Please ensure early referral to Acute Oncology to discuss further management and possible early review of the patient.
Guideline 22. EXTRAVASATION (Active Pathway Management Guideline)

This is the accidental administration of drugs into the extra vascular tissue instead of into the vein. If the drug extravasated is a vesicant, the damage to the surrounding tissue can be extensive and tissue necrosis can occur. Extravasation may be linked to peripheral cannulation or a Central Venous Access Device (CVAD).

**SUSPECT PERIPHERAL EXTRAVASATION IF:**

a) Patient complains of burning or stinging pain at or around cannula site  
b) There is evidence of swelling, induration, leakage at site  
c) There is resistance on plunger of syringe or absence of free flow of infusion  
d) There is no blood return (if found in isolation via a peripheral cannula this should not be regarded as an indication of a non patent vein).

**Action:**

A. If extravasation occurs during peripheral administration of chemotherapy; **Act immediately** according to your local extravasation guidelines.

B. If a patient presents as an emergency following previous peripheral administration of chemotherapy; **Act immediately** Extravasation of a vesicant drug should be treated as an emergency. If it is discovered the local Acute Oncology Team should be contacted, if out of hours use the 24 hour telephone on call contact. The local extravasation policy should be followed.

Although administration of drugs via CVADs carry less risk of extravasation than peripheral administration, if it does occur the damage is likely to be larger and more severe than with peripheral administration. This is because the event is not likely to be noticed immediately and delays to the treatment of extravasation result in damage limitation rather than cure.

**SUSPECT CVAD EXTRAVASATION IF:**

**Signs and symptoms** include;-

- The patient complains of pain  
- There is evidence of redness and swelling  
- There is visible leaking of the drug via the skin tunnel or around the exit site.

**Extravasation of a vesicant drug should be treated as a medical emergency.**

If it is discovered the local Acute Oncology Team should be contacted, if out of hours use the 24 hour telephone on call contact. The local extravasation policy should be followed.

**IMMEDIATE ACTION FOR ALL DRUG CATEGORIES IF CVAD EXTRAVASATION IS SUSPECTED.**

- **If the patient is receiving an active infusion:** STOP the infusion immediately  
  - Leave the central venous catheter in place.  
  - Attempt to aspirate as much drug as possible with a new syringe.  
  - For ports, aspirate then remove needle  
  - Inform a senior member of the Acute Oncology Team  
  - Organise X-ray of line or lineogram

For vesicant extravasations or large volumes of irritant drugs refer to plastic surgeon as soon as possible after detection.
**Guideline 23**  
**HYPERCALCAEMIA OF MALIGNANCY**  
(Active Pathway Management Guideline)

**Definition:** A disorder characterized by laboratory test results that indicate an elevation in the concentration of calcium (corrected for albumin) in blood. **Corrected calcium >4mmol/l is life-threatening & requires URGENT treatment.**

<table>
<thead>
<tr>
<th>Main symptoms of Hypercalcaemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyuria</td>
</tr>
<tr>
<td>Fatigue</td>
</tr>
<tr>
<td>Nausea/Vomiting</td>
</tr>
<tr>
<td>Polydipsia</td>
</tr>
<tr>
<td>Constipation</td>
</tr>
<tr>
<td>Confusion</td>
</tr>
<tr>
<td>Anorexia</td>
</tr>
<tr>
<td>Lethargy</td>
</tr>
<tr>
<td>Seizures</td>
</tr>
<tr>
<td>Constipation</td>
</tr>
<tr>
<td>Arrhythmias</td>
</tr>
<tr>
<td>Abdominal pain</td>
</tr>
<tr>
<td>Coma</td>
</tr>
</tbody>
</table>

**Grade 1 (Green)**  
Corrected serum calcium of  
>ULN - 11.5 mg/dL  
>ULN - 2.9 mmol/L; Ionized calcium  
>ULN - 1.5 mmol/L

**Grade 2 (Amber)**  
Corrected serum calcium of  
>11.5 - 12.5 mg/dL  
>2.9 - 3.1 mmol/L; Ionized calcium  
>1.5- 1.6 mmol/L; symptomatic

**Grade 3 (Red)**  
Corrected serum calcium of  
>12.5 - 13.5 mg/dL  
>3.1 - 3.4 mmol/L; Ionized calcium  
>1.6- 1.8 mmol/L; hospitalization indicated

**Grade 4 (Red)**  
Corrected serum calcium of  
>13.5 mg/dL  
>3.4 mmol/L; Ionized calcium  
>1.8 mmol/L; life-threatening consequences

If corrected calcium 2.6-2.69mmol/l & patient asymptomatic; re-check & only treat if rising.

If creatinine clearance is <30ml/min (GFR<10), do not give bisphosphonate SEEK ADVICE. Zoledronic acid dose will need to be reduced if any sign of renal impairment.

If first episode of hypercalcaemia, give 2-4 litres of 0.9% sodium chloride IV followed by pamidronate or zoledronic acid dose according to corrected calcium.

**Corrected Calcium (mmol/l)**  
<table>
<thead>
<tr>
<th>Pamidronate Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.6-3.0</td>
</tr>
<tr>
<td>Above 3.0</td>
</tr>
</tbody>
</table>

If patient needs pamidronate to treat bone pain, give 90mg, irrespective of corrected calcium level.

If NO, check FBC, ESR, U&E, TFT, PTH, cortisol, vitamin D & myeloma screen, start IVI & seek advice from endocrinologist.

Review need for any drugs which may affect renal blood flow e.g. NSAIDs, diuretics, ACEIs, ARBs.

If 2nd or subsequent episode of hypercalcaemia, give 2-4 litres of 0.9% sodium chloride IV, followed by zoledronic acid 4mg IV in 100ml 0.9% sodium chloride.

DO NOT GIVE FURTHER BISPHOSPHONATE UNTIL AT LEAST 4 DAYS AFTER PREVIOUS DOSE. Maximum effect not seen yet Risk of hypocalcaemia if further bisphosphonate given too soon.

Recheck U&E & calcium after 4-7 days (sooner if need to monitor fluid replacement).

If calcium level still high, consider further dose of bisphosphonate (zoledronic acid 4mg IV) unless calcium level reducing & symptoms improving.

**Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.**

Recheck calcium weekly. If calcium levels high & 3 weeks or more since last dose of bisphosphonate, give zoledronic acid 4mg IV; if less than 3 weeks since last dose of bisphosphonate, SEEK ADVICE. Refer to BNF & intranet hypercalcaemia guidelines for more details – especially if renal impairment.
Guideline 24. HYPOMAGNESAEMIA (Active Management Pathway)

A disorder characterised by laboratory test results that indicate a low concentration of magnesium in the blood. Many cancer drugs can lead to hypomagnesaemia for example cisplatin, carboplatin, liposomal doxorubicin, cetuximab, panitumumab. Other drugs commonly used in cancer patients can cause or contribute to low magnesium e.g. gentamicin, diuretics, aminoglycoside antibiotics. Patients with severe treatment related diarrhoea are also at risk.

Hypomagnesemia is often detected on blood tests when the patient is being assessed for other reasons therefore most patients are asymptomatic as the levels are only mildly depressed (> 0.50mmol/L). When serum magnesium levels drop more significantly (<0.50mmol/L) most patients have non specific symptoms but they may then go on to develop cardiac or muscle related symptoms such as weakness, cramping, tachycardia/palpitations. Neurological complaints can be that of vertigo, ataxia, depression, and in severe cases seizures or altered mental state.

Normal reference range is 0.7 - 1.0 mmol/L

**Initial Assessment:**

**Observations:** Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score. AVPU (Alert Voice Pain Unresponsive).

**Investigations:** Urgent Full blood count, U&E, CRP, LFTs and bone profile include magnesium and phosphate. Hypomagnesaemia is commonly found in association with hypocalcaemia, hypokalaemia and hyponatraemia therefore investigations for these should also be included.

**Examination Findings**

**Neuromuscular Irritability:** Hyperactive deep tendon reflexes; muscular fibrillation; +ve Trousseau (facial nerve hypersensitivity) & Chvostek (metacarpal hyper flexion) signs; dysarthria or dysphagia secondary to oesophageal dysmotility.

**CNS Hyper sensitivity:** irritability and combativeness; disorientation; psychosis; ataxia, vertigo, nystagmus & seizures.

**Cardiac findings (ECG):** Paroxysmal atrial and ventricular dysrhythmias; repolarisation Alternans

<table>
<thead>
<tr>
<th>Grade 1 (Green)</th>
<th>Grade 2 (Amber)</th>
<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; LLN – 1.2mg/dL; &lt; LLN - 0.5 mmol/L</td>
<td>&lt;1.2 – 0.9mg/dL; &lt; 0.5- 0.4 mmol/L</td>
<td>&lt;0.9 – 0.7mg/dL; &lt;0.4 – 0.3 mmol/L</td>
<td>&lt;0.7mg/dL; &lt;0.3 mmol/L</td>
</tr>
</tbody>
</table>

These patients are typically asymptomatic.

Consider oral Mg replacement with e.g. Magnaspartate or manganesium glycerophosphate to avoid a fall to critical levels (poorly absorbed) discuss with pharmacy.

Encourage Mg rich diet e.g. spinach, pumpkin seeds, halibut.

Consider oral Mg replacement with e.g. Magnaspartate or manganesium glycerophosphate to avoid a fall to critical levels (poorly absorbed) discuss with pharmacy.

Encourage Mg rich diet e.g. spinach, pumpkin seeds, halibut.

Administer IV magnesium sulphate 10 – 20mmol diluted in 0.9% sodium chloride over 3 – 6 hours

Correct any other electrolyte imbalance as necessary.

Admit for slow IV magnesium Sulphate replacement.

In severe cases such as cardiac arrhythmias MgSO4 can be given as a bolus but under HDU / ITU supervision.

*Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.*
Guideline 25. MALIGNANT PERICARDIAL EFFUSION (Active Management Pathway)

An accumulation of fluid within the pericardial sac leading to an effusion can be a presenting symptom in an acute oncology patients. Two thirds of cancer patients have subclinical pericardial effusions with no overt cardiovascular signs or symptoms. 50% of cases initially present with symptoms of cardiac tamponade. Symptoms are often attributed to underlying cancers and are often a pre-terminal event; however, significant palliation can be achieved by prompt diagnosis and management.

Time to medical assessment/interview 15 minutes (Canadian ED Triage & Acuity Scale)

Initial Assessment

Identify: All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to approved guidelines.


Investigations: Urgent Full blood count, U&E, CXR, ECG, trans-thoracic Echocardiograph

Signs and symptoms: Dyspnoea; cough; chest pain worse on inspiration; Increased distension of jugular veins (JVP) with inspiration (Kussmaul’s sign); tachycardia; hypotension; pyrexia; rapid diastolic descent of venous pulse (Freidreich’s sign); drop of 10mmHg or more on inspiration (pulsus paradoxus)

Questions:
- Cancer diagnosis/primary disease
- Cardinal questions related to breathlessness
- Differential diagnosis would include chest infection, pulmonary embolism (PE), disease progression (i.e. consolidation / pleural effusion); ascending aortic aneurysm (due to indwelling intravascular catheter)

<table>
<thead>
<tr>
<th>Grade 1 (Green)</th>
<th>Grade 2 (Amber)</th>
<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No new symptoms</td>
<td>Asymptomatic effusion size small to moderate</td>
<td>Effusion with physiological consequences</td>
<td>Life threatening consequences; urgent intervention required</td>
</tr>
</tbody>
</table>

Ensure the patient is not neutropenic
Enquire regarding signs of sepsis / productive cough (Escalate to Grade 3 Red as appropriate)
Advise to contact the chemotherapy helpline if symptoms persist or worsen or if they develop any other problems/toxicities
Discharge with appropriate follow-up
Ensure the patient is not neutropenic – treat immediately with antibiotics if neutropenic sepsis suspected
Admit
Manage in accordance with trust local guidelines depending upon differential diagnosis
Consider immediate therapeutic drainage if cardio-vascular compromised.

Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.

Please see following page for further management guidelines.
Background
Malignant pericardial effusions occur in up to 21% of cancer patients and are frequently not suspected until clinical signs or symptoms of pericardial tamponade develop. Two thirds of cancer patients have subclinical pericardial effusions with no overt cardiovascular signs or symptoms. One half of cases of pericardial effusion initially present with symptoms of cardiac tamponade. Symptoms of pericardial effusion are often attributed to the underlying cancer. Symptomatic pericardial effusions are often a pre-terminal event; however, significant symptom palliation can be achieved by prompt diagnosis and management.

Causes
Most malignant pericardial effusions result from direct malignant involvement with the pericardium. Other, rarer causes of effusions in cancer patients include radiation induced pericarditis or chemotherapy induced pericarditis associated with agents such as doxorubicin or cyclophosphamide.

Clinical Findings
• Dyspnoea occurs in 93% of patients with pericardial effusions
  Dyspnoea, fatigue, or asthenia may be the initial symptoms.
Other common symptoms include :
• Cough
• Chest pain
• Orthopnea
On examination, findings include:
• Kussmauls’s sign (increased distension of jugular veins with inspiration)
• Freidreich’s sign (rapid diastolic descent of the venous pulse) and pulsus paradoxus (drop of 10mmHg or more on inspiration)
Signs of cardiac tamponade include:
• Tachycardia
• Pulsus paradoxus
• Raised jugular venous pressure
• Hypotension

Diagnosis
Chest X-rays may show a widened cardiac shadow but trans-thoracic echocardiography is the investigation of choice as it shows the size of the effusion and also associated cardiac function.

Treatment
Treatment of malignant pericardial effusions is best managed with early referral to cardiology or cardiothoracic Surgical teams. Treatment options include percutaneous pericardiocentesis, pericardial window, surgical pericardiectomy or via video thoracoscopy.

All treatment options should be balanced against the patient’s symptoms, overall performance status, level of disease and predicted benefits.
Guideline 26. PLEURAL EFFUSION (Active Management Pathway)

Proven malignant pleural effusion

- Contact Acute Oncology Team
  - Consider palliative care referral for symptom management

Symptomatic

- Observe unless drain advised for other reasons

Long life expectancy and limited systemic disease

- Consider referral to thoracic surgeons for thorascopic drainage and pleuradesis

Intercostal Tube Insertion and drainage

- Systemic therapy likely to lead to rapid resolution
  - Systemic therapy
    - Urgent oncology referral
  - Follow local pathway for insertion

Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible
Guideline 27. RADIATION PNEUMONITIS (Active Management Pathway)
Definition: A disorder characterized by inflammation focally or diffusely affecting the lung parenchyma.

**Signs and symptoms of radiation pneumonitis**
Clinical radiation pneumonitis, or inflammation of the lung(s), can often display non-specific signs. These can include:
- mild hypoxia
- pleural rub/effusion
- fine crepitations – widespread if drug induced, localised if following focal radiation
- low grade fever
- the development of acute or sub acute dyspnoea, which after history and examination does not reveal pneumonia, tumour recurrence, or any other specific aetiology
- In addition to dyspnoea, there may be a new or worsening cough

Clinical radiation pneumonitis is classed as:
- **mild** if the symptoms are managed on an outpatient basis, and completely resolved
- **moderate** if managed on an outpatient basis and did not completely resolve
- **severe** if hospitalisation is necessary

Clinical radiation pneumonitis may develop in 20% of lung carcinoma patients:
- The median time to onset of symptoms is 3 weeks after radiation therapy (but may be up to 3 months).

**Initial Assessment:**
- Clinical evaluation, history and physical examination
- Chest X-ray
- CT (high resolution and CTPA) to exclude cancer progression and pulmonary embolus

<table>
<thead>
<tr>
<th>Grade 1 (Green)</th>
<th>Grade 2 (Amber)</th>
<th>Grade 3 (Red)</th>
<th>Grade 4 (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymptomatic; clinical or diagnostic observations only; intervention not indicated</td>
<td>Symptomatic; limiting instrumental ADL; Medical intervention indicated</td>
<td>Severe symptoms; limiting self care ADL; oxygen indicated</td>
<td>Life-threatening respiratory compromise.</td>
</tr>
</tbody>
</table>

Review by chest physician

- Mild or moderate symptoms, manageable on an outpatient basis
  - High dose steroids e.g. prednisolone 50mg od reducing dose

- Severe symptoms requiring hospitalisation
  - urgent intervention indicated (e.g. tracheotomy or intubation)
  - Intravenous and/or inhaled steroids

Interrupt SACT/Chemotherapy including oral chemotherapy until discussed with the Acute Oncology Team. Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible.

24/01/2013 UKONS Acute Oncology Initial Management Guidelines
Guideline 28. SUPERIOR VENA CAVA OBSTRUCTION (SVCO) (Active Management Pathway)

SVCO is an obstructive emergency that may occur as the result of progression of a malignancy or may be the diagnostic symptom.

SVCO is caused by external pressure, thrombus or direct tumour invasion causing obstruction of the superior vena cava and occurs in 3-8% of patients with cancer.

**Time to medical assessment/interview** 15 minutes (Canadian ED Triage & Acuity Scale)

**Initial Assessment**

**Identify:** All patients within 6/52 of chemotherapy who are at risk of disease related immuno-suppression or have a history of bone marrow transplant. These patients are often also myelosuppressed and are at risk of neutropenic fever and sepsis. If present, this should be managed according to approved guidelines.

**Observations:** Temperature, pulse, blood pressure, respiration rate, O2 saturation. Early warning score. AVPU (Alert Voice Pain Unresponsive).

**Investigations:** Urgent Full blood count, U&E, INR, CXR, chest CT

**Signs and symptoms:** Dyspnoea, stridor, due to laryngeal oedema, dilated anterior chest wall veins, swelling of face and neck, non-pulsatile JVP, chest pain, headaches, coma, confusion

**Questions:**
- Cancer diagnosis/primary disease
- Cardinal questions related to breathlessness
- Differential diagnosis would include Chest infection, pulmonary embolism (PE), disease progression (i.e. consolidation / pleural effusion); ascending aortic aneurysm (due to indwelling intravascular catheter)

<table>
<thead>
<tr>
<th>Grade 1 Mild (Green)</th>
<th>Grade 2 Moderate (Amber)</th>
<th>Grade 3 Severe (Red)</th>
<th>Grade 4 Life threatening (Red)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oedema in head or neck (vascular distension) cyanosis; plethora</td>
<td>Oedema in head or neck with functional impairment (mild dysphagia, cough, visual disturbances)</td>
<td>Mild or moderate cerebral oedema (headache, dizziness) or mild/moderate laryngeal oedema or diminished cardiac reserve (syncope after bending)</td>
<td>Significant cerebral oedema (confusion) or significant laryngeal oedema (stridor) or significant haemodynamic compromise</td>
</tr>
</tbody>
</table>

**Ensure the patient is not neutropenic**

Enquire regarding signs of sepsis / productive cough
(Ascendate to Grade 3 Red as appropriate)

Enquire if history of underlying chest complaints e.g. asthma, COPD – advise patients around usual management of exacerbations advise to discuss with GP or other associated health professional managing this condition.

Advertise to contact the chemotherapy helpline if symptoms persist or worsen or if they develop any other problems/toxicities
Inform the Acute Oncology Team who will contact the next day to assess patient

**Action: Grade 3 and 4**

Ensure the patient is not neutropenic – treat immediately with antibiotics if neutropenic sepsis is suspected

Admit if evidence of:
- Desaturation
- Infection
- Other chemotherapy toxicities
- Haemodynamic compromise

Manage in accordance with trust local guidelines depending upon differential diagnosis

Interrupt SACT/Chemotherapy including oral if applicable until discussed with the Acute Oncology Team.

Ensure that the Acute Oncology Team are informed of the patients admission/assessment as soon as possible

24/01/2013 UKONS Acute Oncology Initial Management Guidelines
## Development Group

<table>
<thead>
<tr>
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<th>Email</th>
<th>Organisation</th>
</tr>
</thead>
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</tbody>
</table>

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<table>
<thead>
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</tbody>
</table>

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<tr>
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The following groups have provided guidelines for use in this document:

- Greater Midlands Cancer Network: Acute Oncology Guidelines
- North of England Cancer Network: Acute Oncology Guideline
- Northern Ireland Cancer Network: Neutropenic Sepsis Guideline
- Sherwood Forest Hospitals NHS Foundation Trust: Pleural Effusion Pathway
- South East Scotland Cancer Network: Management of Chemotherapy Toxicity Guidelines and Cancer of Unknown Primary

The following documents/guidelines have been considered in the production of these guidelines:

- Amesur NB, Zajko AB, and Orons P (2007) Central Venous Access on line EMedicine
  
http://www.emedicine.com/radio/topic859.htm

- BC Cancer Agency, Care of Radiation Skin Reactions:
  


- CTCAE - Common Terminology Criteria for Adverse Events, Version 4.0 (2009)


- NICE Metastatic spinal cord compression guideline:
  

- NICE Neutropenic sepsis pathway: http://pathways.nic.org.uk/pathways/neutropenic-sepsis

- RCN (2010) Standards for infusion therapy, A Royal College of Nursing Publication. 2010

- UKONS Oncology/Haematology 24 Hour Triage, rapid assessment and access toolkit

- WHO toxicity grading scale for determining the severity of adverse events
| A | ABGs = Arterial blood gases  
ACE (inhibitor) = Angiotensin-converting-enzyme  
ADL = Activities of daily living  
αFP = Alpha-Fetal Protein | AOT = Acute oncology team  
AOS = Acute oncology service  
AVPU = Alert, Voice, Pain, Unresponsive  
AXR = Abdominal X-Ray |
| --- | --- |
| B | BP = Blood pressure  
βhCG = human chorionic gonadotropin (hCG) | BNF = British national formulary |
| C | Ca = Calcium  
CA125 = Cancer antigen 125  
CUP = Cancer of Unknown Primary  
CDT screen = Clostridium Difficile Toxin  
CNS = Central nervous system  
COPD = Chronic Obstructive Pulmonary Disease  
C/S = Culture and sensitivity  
CVAD = Central venous access device  
CXR = Chest X-Ray | CRP = C-reactive protein  
CTPA = Computed tomography pulmonary angiogram  
CT scan = Computed tomography scan  
CNS = Central nervous system  
COPD = Chronic Obstructive Pulmonary Disease  
C/S = Culture and sensitivity |
| D | ECG = Electrocardiogram  
EGFR = Estimated Glomerular Filtration Rate | ESR = Erythrocyte sedimentation rate  
EWS = Early warning score |
| E | FBC = Full blood count  
5FU = 5-flourouracil | SFU = 5-flourouracil |
| F | GI tract = Gastrointestinal tract  
GCSF = Granulocyte-colony stimulating factor | GSR = Glomerular filtration rate  
G&S = Group and save serum |
| G | HCP = Health care professional  
HDU/ITU = High dependency/intensive care unit | HCP = Health care professional  
HDU/ITU = High dependency/intensive care unit |
| H | INR = International normalized ratio  
IV injection = Intravenous injection | JVP = Jugular venous pressure |
| I | JVP = Jugular venous pressure | JVP = Jugular venous pressure |
| J | K = Potassium  
LDH = Lactate dehydrogenase | LFT = Liver function tests  
LDH = Lactate dehydrogenase |
| L | LFT = Liver function tests  
LDH = Lactate dehydrogenase | M = Multidisciplinary team  
Mg2+ = Magnesium |
| M | MDT = Multidisciplinary team  
Mg2+ = Magnesium | MRI = Magnetic resonance imaging  
MSCC = Metastatic spinal cord compression |
| N | N/V = Nausea/vomiting  
NICE = National Institute for Health and Clinical Excellence | NSAID = Non steroidal ant-inflammatory drug  
Na = Sodium |
| O | O2 = Oxygen  
PR = Per rectum | O2 = Oxygen  
PR = Per rectum |
| P | PPE = palmar-plantar erythrodysesthesia  
PBSCT = Peripheral blood stem cell transplants  
PE = Pulmonary embolism  
PICC = Peripherally inserted central catheter  
PO4- = Phosphate  
PPI = Proton-pump inhibitors | PPE = palmar-plantar erythrodysesthesia  
PBSCT = Peripheral blood stem cell transplants  
PE = Pulmonary embolism |
| Q | Q = Quality  
PV = Per vagina | Q = Quality  
PV = Per vagina |
| R | RR = Respiration rate | R = Respiration rate |
| S | SACT = Systemic Anti-Cancer Therapy  
SC injection = Subcutaneous injection  
SOB = Shortness of breathe | R = Respiration rate  
SACT = Systemic Anti-Cancer Therapy |
| T | TFT = Thyroid function tests  
TKI = Tyrosine-kinase inhibitor | TPN = Total parenteral nutrition  
Trop-T = Troponin T |
| U | U&E = Urea and electrolytes  
UKONS = United Kingdom Oncology Nursing Society | US = Ultrasound scan |
| V | VQ = Ventilation/perfusion lung scan | W.  
WCC = White cell count |