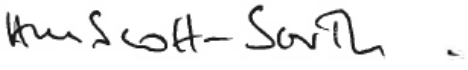
POLICY DOCUMENT

Burton Hospitals
NHS Foundation Trust

Guidelines for the initial management of suspected neutropenic sepsis in adult oncology and haematology patients

Approved by:	**Trust Executive Committee**
On:	**30 May 2017**
Review Date:	**June 2020**
Corporate / Directorate	**Surgical Directorate**
Clinical / Non Clinical	**Clinical**
Department Responsible for Review:	**Oncology**
Distribution:	
• Essential Reading for:	Consultant Haematologists All visiting Consultant Oncologists and teams Cancer Steering Group members All Medical Teams
• Information for:	Clinical Site Practitioners ED, AAC, Ward 7 and Oncology nursing staff Head of Pharmacy All Oncology pharmacists
Policy Number:	**177**
Version Number:	**4**
Signature:	
	Chief Executive
Date:	**30 May 2017**

Burton Hospitals NHS Foundation Trust

POLICY INDEX SHEET

Title:	**Guidelines for the initial management of suspected neutropenic sepsis in adult oncology and haematology patients**
Original Issue Date:	**January 2011**
Date of Last Review:	**April 2017**
Responsibility:	**Oncology**
Stored:	**Acute Oncology Server**
Linked Trust Policies:	**Protocol for the initial management of suspected neutropenic sepsis** **Protocol for the continuing management of neutropenic sepsis** **Sepsis care bundle**
Equality Impact Assessed	**EIA 249**
Consulted	**Consultant Oncologists and Haematologists** **Head of service for chemotherapy** **Chemotherapy nursing team** **Lead nurse/manager cancer services** **Head of Pharmacy**

REVIEW AND AMENDMENT LOG

Version	Type of change	Date	Description of Change
1		January 2011	New Policy
2	Review	April 2015	Alteration to clinical pathways and to conform to new NICE guidance
3	Review	June 2017	General review and update

Guidelines for the initial management of suspected neutropenic sepsis in adult oncology and haematology patients

CONTENTS

Burton Hospitals NHS Foundation Trust

Guidelines for the initial management of suspected neutropenic sepsis in adult oncology and haematology patients

1. INTRODUCTION

Patients with cancer have an increased risk of infection, particularly those on chemotherapy or with a haematological malignancy and are at increased risk of infectious morbidity and mortality.

Patients on chemotherapy or those who are immunosuppressed, *with* or *without* a fever, are at higher risk of serious problems if neutrophil count falls to < $1.0x10^9$/L.

Concerns about the safety of patients who develop neutropenic sepsis after receiving chemotherapy treatment are outlined within the National Confidential Enquiry into Patient Outcome & Death (NCEPOD, 2008). These concerns were reiterated by the National Chemotherapy Advisory Group (NCAG, 2009).

Both reports emphasise the need for complications of cancer therapy to be managed without delay.

Neutropenia typically occurs 4 -14 days following cytotoxic chemotherapy, depending on the drugs used, but it can occur at any time during the patient's chemotherapy cycle It may also occur as the result of disease i.e. myelodysplasia, aplastic anaemia or HIV.

2. NATIONAL GUIDANCE

- National Chemotherapy Advisory Group report (NCAG 2009)
- National Confidential Enquiry into Patient Outcome & Death – Systemic anti-cancer therapy, for better? For worse? (NCEPOD 2008)
- NICE guidance on the prevention and management of neutropenic sepsis in cancer patients (NICE 2012):

****NEUTROPENIC SEPSIS IS A MEDICAL EMERGENCY. SUSPECTED NEUTROPENIC SEPSIS MUST BE TREATED WITH IV ANTIBIOTICS WITHIN ONE HOUR OF PRESENTATION.**

FAILURE TO INITIATE ANTIBIOTICS EARLY MAY RESULT IN OVERWHELMING SEPSIS AND DEATH.

DO NOT WAIT FOR BLOOD RESULT – CANNULATE, TAKE BLOODS INCLUDING BLOOD CULTURES AND GIVE IV ANTIBIOTICS WITHOUT DELAY**

3. ROLES AND RESPONSIBILITIES

3.1 TRIAGE

Chemotherapy nurses

A 24 hour advice line for chemotherapy patients treated at Burton Hospital NHS Foundation Trust (the Trust) is provided and managed by the chemotherapy team.

Patients are given a card on initiation of treatment outlining the signs and symptoms that may necessitate a telephone call to the chemotherapy helpline.

Patients contacting the chemotherapy helpline are triaged and asked to attend the hospital for review at the discretion of the nurse performing telephone triage as per the triage assessment.

3.2 INITIAL MANAGEMENT

Chemotherapy nurses
During normal working hours, patients requiring assessment following telephone triage attend the chemotherapy unit for assessment and appropriate management.
Patient Group Directives (PGD) are in place to allow the chemotherapy nurses to administer initial empiric antibiotics within one hour of presentation. These are available via the Trust intranet. This is in line with Trust protocol for the initial management of suspected neutropenic sepsis (**Appendix 1**). Following initial treatment, the patient will then be examined by a medical practitioner or an advanced nurse practitioner as per section 4.0

Clinical Site Practitioner (CSP)
Outside of normal working hours, the chemotherapy nurse on call will contact the CSP and request that they assess the patient if required following initial telephone triage. The chemotherapy nurse will then inform the patient to attend the hospital for review. The CSP will meet the patient on arrival and instigate initial management, with assistance as required by ED/AAC trained staff.

Medical staff
Medical staff shall be informed of the patient's admission and will be expected to review and examine the patient once blood results are available, as per protocol and admit patient if appropriate.

4. CLINICAL MANAGMENT

Any patient where there is a reasonable suspicion of neutropenia i.e. chemotherapy administered within the last 6 weeks and one or more of the following:

- Feeling generally unwell (WITH OR WITHOUT PYREXIA)
- Focus of infection
- Temperature >37.5° or <36°
- HR >90
- RR >20
- Systolic BP <90mm/Hg

Patients should be treated as suspected neutropenic sepsis *without delay.*
Details of chemotherapy, treatment intent and date of last dose are available on Meditech version 6.

Always check for possible antibiotic allergies with the patient immediately prior to administration.

Subsequent Management will depend on the confirmation of neutropenia. Trust protocol for continuing management of patients with confirmed neutropenic sepsis can be found on the Acute Oncology Intranet pages.

4.1 HISTORY AND CLINCIAL ASSESSMENT

To be obtained by a member of the medical team following initial empiric treatment, to include assessment for:

- Oro-pharyngeal infection
- Perianal infection - Note, do not perform rectal examination in patients with suspected neutropenic sepsis
- Chest infection (CXR if indicated)
- Coryzal symptoms (inflammation of nasal cavity inc. sinusitis)
- Central / peripheral line infection
- Diarrhoea, abdominal pain
- UTI

4.2 SCREENING AND INVESTIGATIONS

- FBC, U&E, LFT, coagulation screen, blood cultures (to be taken from cannula prior to 1st dose antibiotics), CRP and lactate in SIRS or severe sepsis
- Peripheral and central line blood cultures if patient has a central line (please state on the blood culture request whether central or peripheral cultures)
- Chest X-ray if clinically indicated
- Urinalysis and MSU if indicated
- Stool culture if any history of diarrhoea
- Coryzal symptoms - consider nasopharyngeal aspirates
- Sputum sample if indicated
- Blood gases if indicated

4.3 EMPIRIC ANTIBIOTIC THERAPY (NICE 2012):

Tazocin 4.5g stat then TDS IV (monotherapy for empiric treatment in patients who are not penicillin allergic)

If penicillin allergic then:

Teicoplanin 400mg every 12 hours for 3 doses *then* 400mg daily IV *plus Gentamicin 5mgs/kg daily* (see antibiotic policy for prescribing algorithm) Gentamicin to be prescribed as soon as renal function is available. Ciprofloxacin should be used as an alternative if renal function impaired, to cover gram negative organisms.

Tazocin and Teicoplanin can be given immediately by the personnel named in the PGD. Gentamicin should be prescribed by an independent prescriber.

4.4 MANAGEMENT OF SIRS OR SEVERE SEPSIS

- Refer to Trust sepsis bundle on the intranet http://bhftintranet.burtonft.nhs.uk/Departments/medicine/Documents/New-Sepsis-Proforma-June-2014.pdf
- Tazocin 4.5g stat then TDS IV + Gentamicin 5mgs/kg daily (see antibiotic policy for prescribing algorithm)
- Give high flow oxygen
- Give IV fluid challenge
- Measure lactate (ABG/VBG)
- Measure urine output

4.5 USE OF SIDE ROOMS

Patients with a neutrophil count above 0.5 do not need to be in a side room, they can be cared for on a main ward, although care should be taken that they are not in close proximity to patients with active infections. Patients with a neutrophil count of ≤ 0.5 need to be in a side room until neutrophils > 0.5.

4.6 USE OF PPE AND DECONTAMINATION OF SIDE ROOMS

Nurses caring for neutropenic patients need only utilise standard personal protective equipment (PPE) when dealing with neutropenic patients. There is no need for staff to wear gowns, gloves or face masks when entering the room or during routine contact. Relatives visiting neutropenic patients do not need to wear gloves or aprons, just to ensure they clean their hands prior to contact.
Standard cleaning procedures of side rooms need to be employed prior to a neutropenic patient being put into a side room.

Appendix 1

The initial management of suspected neutropenic sepsis

Suspected neutropenic sepsis → Require URGENT assessment and treatment

****ED Triage orange – special risk of infection****

Patients on chemotherapy or immuno-compromised patients *with* or *without* a fever are at higher risk of serious problems if neutrophil count falls to < 1.0×10^9/L

**** Serious infections may be fatal****

Triage assessment

Identify:	All patients within 6 weeks of chemotherapy/Immunocompromised/history of bone marrow transplant
Assume:	Neutropenic sepsis until proven otherwise
Observations:	Temp, pulse, BP, RR, O2 sats, AVPU and assess urine output
Commence:	Early Warning Score
IV access:	Cannulate and bloods urgently to the lab: FBC, UELFT, CRP, Coag screen, blood cultures

Time!

15 minutes

Severe Sepsis or SIRS?

Altered mental state
Hypoxia (O_2 sats < 94%)
Shock (Systolic BP < 90mmHg)
HR > 90 bpm
RR > 20/min

Yes

Resuscitation management

*** *DO NOT DELAY* for lab confirmation ***

- Triage red
- Resuscitation room
- Monitor EWS
- Optimise haemodynamics and 0_2 delivery

Initiate 1st line antibiotics

Tazocin 4.5g stat then TDS IV + Gentamicin 5mgs/kg daily (see antibiotic policy for prescribing algorithm)

Penicillin allergic patients:

Teicoplanin 400mg X 3 12 hourly then **400mg daily IV plus Gentamicin 5mgs/kg daily as above**

Consider: ECG, ABG and Lactate, Chest X-ray
- Admit to appropriate area

No

Early Sepsis?

Any temp of > 37.5° or < 36° or
HR > 90 or
RR > 20

Yes

30 minutes

Commence NS Regimen as above

*** *DO NOT DELAY* for lab confirmation ***

- Supplemental O2

Initiate 1st line antibiotics

Tazocin 4.5g TDS IV

or Teicoplanin + Gentamicin 5mgs/kg daily as above

- 1L 0.9% Sodium Chloride over 1-2 hours

Medical Assessment

Identify: Potential sources of infection from history and examination

Investigations: Urinalysis, appropriate swabs, stool culture if indicated

Treatment : Presenting complaint/co-morbidity

Do not perform a chest X-ray unless clinically indicated

60 minutes

If neutropenic and low grade pyrexia
< 37.5/apyrexial
And no complicating factors

MASCC scoring system

Characteristic	score
Burden of illness: no or mild symptoms	5
No hypotension	5
No chronic obstructive pulmonary disease	4
Solid tumour or no previous fungal infection	4
No dehydration	3
Burden of illness: moderate symptoms	3
Outpatient status	3
Age > 60 years	2

Assess the patient's risk of septic complications using MASCC scoring system

Consider discharge on oral antibiotics if:

- MASCC score has been assessed as ≥ 21
- Physiologically stable
- Any Co-Morbidity is treated
- Neutropenic sepsis advice has been reinforced

Contact Acute Oncology Team on ext. 5740 or bleep 587/229 to advise patient has attended and was discharged (Leave message OOH or email burton.aos@nhs.net

ed neutropenic