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DOCUMENT CONTROL PAGE

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1. Introduction

Children and Young People under the care of the Haematology-Oncology team are at risk of neutropenic sepsis. This document should be used to risk-stratify children into low risk children who may not need admission or prolonged antibiotics and higher risk children who need admission and a minimum of 48 hours intravenous antibiotics.

This document should be used in conjunction with “Paediatric Haematology/Oncology Antibiotic and Antifungal Treatment Guidelines”.

2. Purpose

This guidance is produced in response to NICE CG 151 (Sep 2012). It should be read in conjunction with “Paediatric Haematology/Oncology Antibiotic and Antifungal Treatment Guidelines” http://microbiology.staffnet.xcmmc.nhs.uk/media/400809/paediatric_haematology_oncology_antibiotic_and_antifungal_guidelines_june_2017_pdf.pdf

This guidance is designed primarily for use in the Haematology and Oncology department and PED units at Royal Manchester Children’s Hospital, RMCH. The principles of practice are applicable to Paediatric Oncology Shared Care Units (POSCUs).

3. Roles and Responsibilities

3.1 The Clinical Team in Haematology and Oncology are responsible for ensuring that they are familiar with this policy. It is the role of the attending consultant to review admitted patients. Senior staff should ensure this policy is covered as part of induction of new staff members.

3.2 The Clinical Team in PED are responsible for ensuring that they are familiar with this policy.

4. Detail of Procedural Document.

This guidance covers:

4.1 Definitions of fever, low risk and higher risk patient populations

4.2 Initial management of patients (PED/POSCU/Day Case)

4.3 Management of low risk patient population (low risk disease AND low risk clinical status)

4.4 Management of higher risk patient population

4.5 Ongoing management statement

4.1 Definitions of fever, low risk and higher risk patient populations

4.1.1 **Fever** or **Febrile** is defined as single temperature >38^{o}C

4.1.2 **Neutropenia** is defined as neutrophil count <0.5

4.1.3 **Low risk patients**: as defined by disease AND clinical status. All other patients should be considered **higher risk**.

	Low Risk	**Higher risk**
Underlying disease	• Acute Lymphoblastic Leukaemia (ALL) on maintenance treatment • Infant ALL on maintenance • Haemoglobinopathy/ Diamond Blackfan Anaemia • Benign bleeding disorders • LCH patients on maintenance prednisolone and vinblastine 3-weekly • LG Gliomas on single agent vinblastine (at least 3 months into therapy) • Wilms' patients on vincristine only	• Acute myeloid leukaemia (AML) • ALL or Infant ALL pre-maintenance • Stem cell transplant on treatment • Burkitt lymphoma • Relapsed or refractory disease • Severe aplastic anaemia • Congenital neutropenia • All other oncology
Clinical status	• Age >6 months • Score 0-1 on Early Warning Score (NPEWS) • No evidence of dehydration • Normal neurology • PortaCath which has not been accessed within preceding 24 hours. Unaccessed PortaCath in situ • No central venous line in situ	• Age <6 months • Score >1 on NPEWS • Vomiting or abdominal pain • Reduced urine output or reduced skin turgor • Altered mental status or focal neurology • Requiring opiate analgesia • Social reasons requiring inpatient management • Hickman/Broviac line/ accessed PortaCath in situ/ PortaCath accessed in previous 24 hours

4.2 Initial management of patients (PED/POSCU/Day Case)

4.2.1 All Haematology and Oncology patients with a single temperature >38°C AND a central line/Portacath in situ should receive a first dose of antibiotics according to the "Paediatric Haematology/Oncology Antibiotic and Antifungal Treatment Guidelines"

4.2.2 Patients should then be subsequently assessed by Haematology and Oncology team following the risk stratification outlined in this document and managed following the appropriate pathway.

4.3 Management of low risk patient population (low risk disease AND low risk clinical status)

4.3.1 Line (if applicable), and urine cultures should be taken.

4.3.2 **Low risk patients** who are **non-neutropenic** do not require admission and can be discharged by a member of Haematology or Oncology medical team (or Senior Member of the medical team at POSCU centres). Oral antibiotics may be commenced at discretion of reviewing team if a bacterial focus for infection is suspected.

4.3.2.1 Discharged patients should be added to the Haematology/Oncology handover sheets, maintained by the ward medical team. It is the responsibility of the attending consultants to ensure patients and contact details are added to handover sheets and to follow up on microbiology results. In POSCU centres this role should be allocated to the Senior Member of the medical team.

4.3.2.2 On discharge parent/carer is advised to come back to hospital (PED) or POSCU centre if child becomes more unwell i.e. follow the pathway for unwell child relevant for specific centre.

4.3.2.3 The ward attending Haematology, Oncology or POSCU medical team must review any cultures at 24 and 48 hours for patients under their care.

4.3.2.4 Parent/carer should be contacted by ward team at specific centre at 48 hours with culture results and telephone consult with the attending Haematology, Oncology or POSCU medical team.

4.3.2.5 If the patient remains febrile at 48 hours, the patient should come back to hospital (PED) or POSCU centre for further observations, FBC and medical review. Likewise, if blood cultures are positive they need to come back to hospital (PED) or POSCU for review.

4.3.3 **Low risk patients** who are **neutropenic** require admission and intravenous antibiotics according to antibiotic policy.

4.3.3.1 Low risk patients should be reviewed at 48 hours by ward attending Haematology, Oncology, POSCU medical team and are eligible for early discharge if cultures are negative and their current clinical status has remained low risk.

4.3.3.2 Discharge must be discussed with the attending consultant (Haematology, Oncology or POSCU). Following discharge, patient must be admitted via clinic or the Day Case unit at RMCH (PED if unwell) or POSCU at 48-72 hours post discharge if the child remains febrile. Ongoing management of these patients will be according to **Section 4.5**.

4.3.3.3 Patient must be added to medical handover sheet and, if applicable, POSCU centre contacted so teams are aware that they have been recently discharged and may need to come back for review.

4.4 Management of higher risk patient population

4.4.1 All patients stratified as higher risk must be admitted for IV antibiotics as per "Paediatric Haematology/Oncology Antibiotic and Antifungal Treatment Guidelines".

4.4.2 All higher risk patients need to remain in hospital until cultures are confirmed as negative at 48 hours AND have been afebrile for 24 hours.

4.4.3 Ensure review of antibiotics at 48 hours as per "Paediatric Haematology/Oncology Antibiotic and Antifungal Treatment Guidelines".

4.4.4 Cultures should be repeated every 48 hours if patient remains febrile.

4.5 Ongoing management statement

4.5.1 Patients with ongoing fever post 48 hours should be managed according to the "Paediatric Haematology Oncology Antibiotic and Antifungal Treatment Guidelines" http://microbiology.staffnet.xcmmc.nhs.uk/media/400809/paediatric_haematologyoncology_antibiotic_and_antifungal_guidelines_june_2017_pdf.pdf

4.5.2 Patients with positive blood culture must be discussed with the Microbiology Department (RMCH or POSCU where relevant).

4.5.3 Patients with suspected viral infections (e.g. VZV, HSV) should be discussed with Virology colleagues at RMCH.

5. Equality Impact Assessment

An initial Equality Impact Assessment has been completed for this document (please refer to the Document Control Page).

6. Consultation, Approval and Ratification Process

Consultation: This guidance has been drawn up as a joint venture with representation from Haematology, Oncology, PED, POSCU centres and Pharmacy.

Approval and Ratification: RMCH Quality and Safety Committee.

7. Dissemination and Implementation

7.1 Dissemination
This guidance will be publicised and circulated on Ward 86, Ward 84 OPD, PED and POSCU centres. It will be posted on the Intranet website. It will be publicised to the Haematology and Oncology medical and nursing staff, including face to face training at induction.

7.2 Implementation of Procedural Documents
Implementation will be audited 12 months after launch.

8. Monitoring Compliance of 'Guidance for risk stratification of febrile neutropenia and non-neutropenia in Haematology and Oncology'

Compliance will be monitored by cyclical audit at appropriate time frequency.

Process for Monitoring Compliance and Effectiveness

The Lead Consultant for this document is responsible for monitoring compliance with the 'Guidance for risk stratification of febrile neutropenia and non-neutropenia in Haematology and Oncology' at Division and Corporate Level.

This will be completed on a one- to two yearly basis and reported to the Trust Audit Committee.

The following will be monitored for compliance:

Adherence to guidance outlined in document via audit.

Any shortfalls identified will have an action plan put in place to address which will have timescales included for re-audit/monitoring.

9 Standards and Kay Performance Indicators 'KPIs'

All patients for whom this document is relevant should receive treatment in accordance with Section 4 of the guidelines, which will provide a basis for audit as above.

This Policy must be reviewed at least every three years or when there are significant changes to the document or procedure.
Awareness of the policy will be delivered at RMCH Quality and Safety Committee, the local CSU Clinical Effectiveness meeting and the Greater Mancheser Cancer Pathway Board

meetings for POSCU awareness.

10 References and Bibliography

Neutropenic sepsis: prevention and management in people with Cancer, National Institute for Clinical Excellence document CG151, September 2012

11 Associated Trust Documents

"Paediatric Haematology/Oncology Antibiotic and Antifungal Treatment Guidelines"
http://microbiology.staffnet.xcmmc.nhs.uk/media.400809/paediatric_haematologyoncology_antibiotic_and_antifungal_guidelines_june_2017_pdf.pdf

12 Appendix

Summary Guidance for Risk Stratification of febrile (T>38) Neutropenia (N<0.5) and Non-Neutropenia in Haematology and Oncology.

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SUMMARY GUIDANCE FOR RISK STRATIFICATION OF FEBRILE (T>38) NEUTROPENIA (N<0.5) AND NON-NEUTROPENSIA IN HAEMATOLOGY & ONCOLOGY

At 0hr: Take FBC and blood cultures. Administer IV **antibiotics (as per antibiotic guidance)** within 1 hour of presentation

Further action: **Risk stratification of patient according to disease and clinical status. Urine cultures. Review FBC.**

Non-Neutropenic (N>0.5) AND Low Risk Disease AND Low Risk Clinical Status

Patient does not require admission and may be discharged.
Patient does not require IV antibiotics. Consider oral antibiotics.
Advise family to return if concerned or remains febrile >48hr.

At 24-28hr: Review culture results. If positive contact family for admission.

At 48hr: If cultures remain negative contact family to review clinical status. If remains febrile needs further review.

Non-Neutropenic (N>0.5) AND Higher Risk Disease OR Higher Risk Clinical Status

Admit and prescribe IV antibiotics according to antibiotic guidelines.

Neutropenic (N<0.5) AND Low Risk Disease AND Low Risk Clinical Status

Admit and prescribe IV antibiotics according to antibiotic guidelines.

At 48hr: If cultures remain negative and remains low risk clinical status then patient may be discharged by attending consultant.

If remains febrile at 48hr post discharge then patient needs to attend for review/admission.

Neutropenic (N<0.5) AND Higher Risk Disease Or Higher Risk Clinical Status

Admit and prescribe IV antibiotics according to antibiotic guidelines until afebrile for 24hr and 48hr cultures negative.