Preparation and Administration of Vinca Alkaloids within Children's Cancer Services

NHS University Hospitals of Leicester NHS Trust

Trust Ref: E1/2023

Introduction and Who this Standard Operating Procedure applies to

This CYPICS network guideline has been developed by clinicians from Nottingham Children's Oncology Unit with consultation across the network including from the Leicester Royal Infirmary and has been ratified by the Leicester Children's Hospital guideline process.

This guideline applies to all children and young people under the age of 19 years who are receiving chemotherapy for malignant disease

UHL local Paediatric Oncology specialists are:

Emma Ross; Consultant Paediatric Oncologist

Ghazala Javid; Paediatric Oncology Pharmacist, Leicester Royal Infirmary

Dani Jones; CYPICS Clinical Educator

Title of Guideline	Guideline for the use of Vinca Alkaloids
Contact Name and Job Title (author)	Jenni Hatton Children's Cancer Network Pharmacist
Directorate & Speciality	Directorate: Family Health – Children Speciality: Haematology and Oncology
Date of submission	November 2020
Date on which guideline must be reviewed (one to five years)	November 2023
Explicit definition of patient group to which it applies (e.g. inclusion and exclusion criteria, diagnosis)	Children being treated with vinca alkaloid chemotherapy at the Children's Hospital in Nottingham and other East Midlands CYPICS (Children's and Young Person's Integrated Cancer Service) treatment centres.
Abstract	Describes the requirements for prescribing, preparation and administration of vinca alkaloids.
Key Words	Paediatrics. Children. Vincristine. Vinblastine. Vinorelbine. Vindesine. Vinca. Alkaloid.

Statement of the evidence base of the guideline – has the guideline been peer reviewed by colleagues?	
1a meta analysis of randomised controlled trials	
2a at least one well-designed controlled study without randomisation	
2b at least one other type of well-designed quasi-experimental study	
3 well –designed non-experimental descriptive studies (ie comparative / correlation and case studies)	
4 expert committee reports or opinions and / or clinical experiences of respected authorities	X
5 recommended best practise based on the clinical experience of the guideline developer	

Consultation Process	CYPICS Chemotherapy Group and consultation with CYPICS medical, nursing and pharmacy staff.
Target audience	Staff working within CYPICS

This guideline has been registered with the trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the

responsibility of the individual clinician. If in doubt contact a senior colleague or expert. Caution is advised when using guidelines after the review date.

Document Control

Document Amendment Record Version	Issue Date	Author
V1	July 2014	Adam Henderson, CYPICS Network Pharmacist
V2	June 2015	Jenni Hatton, Children's Cancer Network Pharmacist
V3	June 2017	Jenni Hatton, Children's Cancer Network Pharmacist
V4	November 2020	Jenni Hatton, Children's Cancer Network Pharmacist

Statement of Compliance with Child Health Guidelines SOP
This guideline refers to activities of only one specific team and consultation has taken place with relevant members of that team. Therefore this version has not been circulated for wider review.
Maria Moran
Clinical Guideline Lead
10 Dec 2020

Vinca Alkaloid Guideline

GUIDELINES FOR THE ADMINISTRATION OF VINCA ALKALOIDS

1. INTRODUCTION

This document has been written to ensure that each child / young person will receive vinca alkaloid chemotherapy efficiently and safely with the minimum of distress to the patient and family. An RSCN/RN with oncology training and a trained oncology / haematology doctor should be available for the care of these children. The following measures reflect the National Patient Safety Agency Rapid Response Report NPSA/2008/RRR004 - Using Vinca Alkaloid Minibags. Also, the statements on the dilution of vinca alkaloids, presented in syringes are in accord with the advice from the DH current at the time of publication of this measure. In particular, following NPSA/2008/RRR04, and further discussions, it is acknowledged that paragraphs 78-80 of the ITC guidance, HSC2003/010, still apply.

Children should not be treated in adult clinical areas. In the unlikely event that this requirement should arise, then a risk assessment should be undertaken to determine the safest method of intravenous alkaloid treatment.

Vinca alkaloids block mitosis with metaphase arrest by binding tubulin and inhibiting the assembly of microtubules. Vincristine is M- phase specific. (Allwood et al 2002)

Vinca alkaloids are vesicants and can cause severe tissue damage. If extravasation occurs then the network extravasation policy should be followed.

Young people who are over the age of 16 years and cared for in a unit which includes young adults, e.g. Ward 27 at LRI should receive their vinca alkaloid chemotherapy in a 50 ml minibags and NOT in a syringe.

VinCRISTine

- The usual dose is 1.5mg/m2. The **maximum** dose must not exceed 2mg per administration unless specified in an approved protocol.

NOTTINGHAM & NORTHAMPTON

- All vincristine doses should be labelled **'For Intravenous Use Only - Fatal If Administered by Other Routes'.**
- Intravenous vincristine is diluted to concentration of 0.1mg/ml to a maximum of 20mls with 0.9% sodium chloride.
- The vincristine syringe should be given as a slow bolus intravenous injection over 3 to 5 minutes.

LEICESTER

- For children / young people **under** the age of 16 years, vincristine is diluted to 20mls with 0.9% sodium chloride.
- The vincristine syringe should be given as a slow bolus over 3 to 5 minutes.
- For young people **over** the age of 16 years, vincristine is prepared in 50ml Minibags of sodium chloride 0.9%. Children / young people who turn 16 years of age during their treatment will be switched over from 20ml syringes to 50ml Minibags during their 16th year.
- The vincristine Minibags should be infused intravenously over 10 minutes.
- All vincristine doses should be labelled **'For Intravenous Use Only - Fatal If Administered by Other Routes'.**

VinBLASTine

- The dose is 6mg/m2. The **maximum** dose must not exceed 10mg per administration unless specified in an approved protocol.

NOTTINGHAM & NORTHAMPTON

- All vinblastine doses should be labelled **'For Intravenous Use Only - Fatal If Administered by Other Routes'.**

- Intravenous vinblastine is diluted to 20mls with 0.9% sodium chloride.
- The vinblastine syringe should be given as a slow bolus intravenous injection over 3 to 5 minutes.

LEICESTER

- For children / young people **under** the age of 16 years, vinblastine is diluted to 20mls with 0.9% sodium chloride.
- The vinblastine syringe should be given as a slow bolus over 3 to 5 minutes.
- For young people **over** the age of 16 years, vinblastine is prepared in 50ml Minibags of sodium chloride 0.9%. Children / young people who turn 16 years of age during their treatment will be switched over from 20ml syringes to 50ml Minibags during their 16th year.
- The vinblastine Minibags should be infused intravenously over 10 minutes.
- All vinblastine doses should be labelled **'For Intravenous Use Only - Fatal If Administered by Other Routes'.**

VinORELBine

- The usual dose is 25mg/m2.

NOTTINGHAM & NORTHAMPTON

- All vinorelbine doses should be labelled **'For Intravenous Use Only - Fatal If Administered by Other Routes'.**
- Intravenous vinorelbine is diluted to 20mls with 0.9% sodium chloride.
- The vinorelbine syringe should be given as a slow bolus intravenous injection over 3 to 5 minutes.

LEICESTER

- For children / young people **under** the age of 16 years, vinorelbine is diluted to 20mls with 0.9% sodium chloride.
- The vinorelbine syringe should be given as a slow bolus over 3 to 5minutes.
- For young people **over** the age of 16 years, vinorelbine is prepared in 50ml Minibags of sodium chloride 0.9%. Children / young people who turn 16 years of age during their treatment will be switched over from 20ml syringes to 50ml Minibags during their 16th year.
- The vinorelbine Minibags should be infused intravenously over 10 minutes.
- All vinorelbine doses should be labelled **'For Intravenous Use Only - Fatal If Administered by Other Routes'.**

VinDESine

- The usual dose is 3mg/m2.

NOTTINGHAM & NORTHAMPTON

- All vindesine doses should be labelled **'For Intravenous Use Only - Fatal If Administered by Other Routes'.**
- Intravenous vindesine is diluted to 20mls with 0.9% sodium chloride.
- The vindesine syringe should be given as a slow bolus intravenous injection over 3 to 5 minutes.

LEICESTER

- For children / young people **under** the age of 16 years, vindesine is diluted to 20mls with 0.9% sodium chloride.
- The vindesine syringe should be given as a slow bolus over 3 to 5minutes.
- For young people **over** the age of 16 years, vindesine is prepared in 50ml Minibags of sodium chloride 0.9%. Children / young people who turn 16 years of age during their treatment will be switched over from 20ml syringes to 50ml Minibags during their 16th year.
- The vindesine Minibags should be infused intravenously over 10 minutes.
- All vindesine doses should be labelled **'For Intravenous Use Only - Fatal If Administered by Other Routes'.**

2. TRAINING

All staff working within the paediatric oncology / haematology service will receive training if they are to have any involvement with cytotoxic drugs. Support staff will receive training on collection and transportation of chemotherapy. Medical and nursing staff will receive training about prescription, collection and transportation, safe handling, administration and safe disposal of cytotoxic drugs.

2.1 Medical staff:

- Will receive cytotoxic health and safety training.
- The record of this training will be retained by the lead medical trainer and the CYPICS clinical educator.
- Once assessed as competent by the medical lead, the doctor may undertake the role of prescribing.

2.2 Nursing Staff:

- Will attend a cytotoxic study day.
- Will complete a combined theoretical learning package and a practical assessment package.
- Attendance of the study day will be recorded and the record kept by the CYPICS clinical educator.
- Once the nurse has been assessed as competent, their name will be added to the intravenous chemotherapy register and he/she can take on the role of administering cytotoxic drugs. (CYPICS NUH 2018).

3. PRESCRIPTION

- Only a doctor whose name is on the intravenous chemotherapy register will be able to prescribe chemotherapy.
- A chemotherapy register will be available at Nottingham and Leicester. This will be maintained and updated by the CYPICS Clinical Educator, Paediatric Oncologist / Haematologist and Paediatric Oncology / Haematology Pharmacist.
- ST1-3s will not be allowed to prescribe or administer chemotherapy.

4. DISPENSING AND STORING OF VINCA ALKALOIDS

- Vinca alkaloids will only be released from the pharmacy production unit for a patient on the day they are due to be administered.
- Vinca alkaloids will not be released for any patient who is due to have intrathecal chemotherapy on the same day.
- Vinca alkaloids will not be stored in Children's Oncology Day Care at Leicester and Nottingham.
- Vincristine will be stored in the chemotherapy refrigerators on wards E39 and E40 at Nottingham, Ward 27 at Leicester and Disney ward at Northampton.

5. ADMINISTRATION

Vinca alkaloids will not be administered in the Day Care Unit at Leicester and Nottingham when an anaesthetic list is in progress.
Vinca alkaloids may be administered in a separate clinical area in accordance with the Trusts' local inthrathecal policy. For example vincristine doses for patient with ALL are administered in out-patients if an intrathecal list is still ongoing.

N.B. Vincristine must not be administered to a patient on the same day as intrathecal medications. Refer to each local Trust's intrathecal policy for more details.

Most vinca alkaloids are administered via central venous catheter, but they may be given through a PICC line or a peripheral cannula if it within the competence of the individual undertaking the procedure.
ST 1-3s working within paediatrics are not allowed to administer cytotoxic medication.

6. UNTOWARD INCIDENTS

Any actual or near miss incidents will be reported via the Trusts' Incident reporting systems.

The policy and forms for incident reporting can be found in all patient areas.

If extravasation occurs then the Extravasation policy should be followed. This is found in a poster on Oncology/Haematology Daycare, E39 and E40 at NUH and on Ward 27 and Ward 27 Daycare at LRI. All staff are to familiarise themselves with location and content.

A copy of the Vinca Alkaloid Policy will be held on Children's Oncology / Haematology Day Care, E39 E40, PICU, Pharmacy and main Theatres at Nottingham. Copies will also be held on Ward 27, Ward 27 Day Care, Intrathecal Theatre room Ward 27, Main theatres and PICU at Leicester.

7. REFERENCES

Allwood M, Stanley A, Wright P (ED) (2002). The Cytotoxics Handbook Radcliffe Medical Press. 4th Edition.

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8. BIBLIOGRAPHY

DOH (2001) External Inquiry into the adverse incident that occurred at Queen's Medical Centre, Nottingham, 4th January 2001 by Professor Brian Toft.

DOH (2001) The Prevention of Intrathecal Medication Errors A report to the Chief Medical Officer Professor Kent Woods.

DOH (2003) HSC 2003/010 Updated National Guidance on the Safe Administration of Intrathecal Chemotherapy
DOH (2008) HSC 2008/001 Updated National Guidance on the Safe Administration of Intrathecal Chemotherapy

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The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.
As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

CONTACT AND REVIEW DETAILS	
SOP Lead (Name and Title) Emma Ross; Consultant Paediatric Oncologist	**Executive Lead** **Chief Medical Officer**
Details of Changes made during review: **New guideline for UHL**	