Antiemetics in chemotherapy

University Hospitals of Leicester NHS Trust

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Contents

Introduction and Who this Standard Operating Procedure applies to

Guideline for the prevention and management of nausea and vomiting in children and young people receiving chemotherapy.
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:

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Dani Jones; CYPICS Clinical Educator

Title of Guideline	Guideline for the prevention and management of nausea and vomiting in children and young people receiving chemotherapy
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Directorate & Speciality	Family Health, Paediatric Haematology/Oncology
Guideline ID:	2065
Date of submission	June 2022
Date on which guideline must be reviewed (one to five years)	June 2025
Explicit definition of patient group to which it applies (e.g. inclusion and exclusion criteria, diagnosis)	This guideline applies to all children and young people under the age of 19 years.
Key Words	Paediatrics, Children, antiemetic, nausea, vomiting, chemotherapy

Statement of the evidence base of the guideline – has the guideline been peer reviewed by colleagues?		
1a	meta analysis of randomised controlled trials	See references
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	
5	recommended best practise based on the clinical experience of the guideline developer	

Consultation Process	All paediatric oncology and haematology consultants, lead nurses, pharmacists and CYPICs Educator
Target audience	All clinical staff working in paediatric oncology to include doctors, nurses and pharmacists

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

Version	Issue Date	Lead Author	Description
V1			
V2	Aug 2010	Beverly Harwood Paediatric Oncology Pharmacist	
V3	Aug 2013	Adam Henderson Paediatric Oncology Pharmacists.	Reviewed. Few changes
V4	Sept 2013	Beverly Harwood Paediatric Oncology Pharmacist	Addition information regarding EMA warning about metoclopramide
V5	May 2015	Jenni Hatton Paediatric Oncology Pharmacist Dani Jones Clinical Educator for Children & Young People CYPICS	Amended first and second line treatments to comply with MHRA guidance on metoclopramide
V6	October 2018	Lorraine Macdonald Paediatric Oncology Pharmacist	Reviewed to reflect CCLG guideline
V7	Sept 2022	Lorraine Macdonald Paediatric Oncology Pharmacist	Reviewed. Minor changes.

General Notes;
This guideline is part of the CYPICS* documentation from 2012.
*Children's and Young Peoples Integrated Cancer Service

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
15 Sept 2022

Antiemetics in chemotherapy

The Children's Cancer and Leukaemia Group (CCLG) compiled a national framework document in March 2018 with the aim of standardising the management of chemotherapy induced nausea and vomiting across all CCLG centres in the UK.

The resulting document was authored and reviewed by an experienced panel using international guidelines to support the evidence. In view of this, the CCLG guideline has been adopted almost in its entirety. The table below is a very brief summary, the full guideline is available as an open access document through the usual search online search engines, or follow the hyperlinks in the table.

Additional drugs have been added to the CCLG list to reflect local patterns of use, this is indicated by **, #, ## or ^.

Roles & responsibilities

Anti-emetics alongside any other supportive medications should be prescribed at the same time as prescribing chemotherapy to ensure optimal management. Choice of agent should be dependent upon the emetogenicity of the chemotherapy (see tables below) and the patient's previous experiences, taking into account patient specific characteristics and contra-indications.

Table 1: Emetogenicity of chemotherapy agents and recommended anti-emetic

Emetogenicity	Chemotherapy Agent	Recommended initial anti-emetic
Minimal (<10%)	Alemtuzumab Asparaginase Bevacizumab Bleomycin Chlorambucil Dasatinib Lenalidomide Mercaptopurine Methotrexate <1g/m2 Nelarabine Nivolumab^ Rituximab Sorafenib Sunitinib Temsirolimus Tioguanine Vemurafenib**	No routine anti emetics required unless history previous of emesis or nausea
Low (<30%)	Amsacrine ATG Blinatumomab**	**Step 1:** **Ondansetron** as required.

	Bortezomib Busulfan Cabozantinib# Capecitabine CH14.18 antibodies Cyclophosphamide <300mg/m2 Cytarabine <200mg/m2 Dabrafenib^^ Everolimus Fludarabine 5-fluorouracil Gemcitabine Gemtuzumab Hydroxurea Inotuzumab ozogamicin ^ Intrathecals Liposomal daunorubicin## Nilotinib Paclitaxel Regorafinib^^ Thalidomide** Trametinib^^ Topotecan Venetoclax^^ Vinblastine Vindesine Vincristine Vinorelbine	**Step 2:** **Ondansetron** oral/IV regularly For doses see CCLG guideline on the management of chemotherapy induced nausea and vomiting go to https://www.piernetwork.org/uploads/4/7/8/1/47810883/enc_c_-_cclg_cinv_guideline_march_2018.pdf
Moderate 30-90%	Aldeslukin Arsenic Trioxide Azacitidine Cladribine Clofarabine Cyclophosphamide 301mg/m2-1000mg/m2 Cytarabine 201mg/m2-3g/m2 Daunorubicin Dinutuximab^^ Docetaxel Doxorubicin Etoposide Epirubicin Idarubicin Imatinib	**Step 1:** **Ondansetron** IV pre chemo then IV/oral regularly +/- **dexamethasone***. ***Contra-indicated – brain tumour patients and those already on steroids (ALL, SCT). Caution in osteosarcoma – discuss with consultant.** If steroids contra-indicated prescribe **aprepitant** for patients ≥ 6months old. **Aprepitant:** Dose as per SPC here or go to medicines.org.uk Round dose to nearest 5mg. If aprepitant contra-indicated add **levomepromazine** or **metoclopramide if** > 1 yr old **N.B. If ≥ 2 moderately emetogenic drugs given together treat as per highly emetogenic chemotherapy.**

	Inotuzumab Irinotecan Lenvatinib^^ Lomustine Methotrexate ≥1g/m2 to 12g/m2 Mitoxantrone Oxaliplatin >75mg/m2 Procarbazine Temzolamide Treosulfan	**Step 2:** Add **levomepromazine** IV/oral if not already added. Add **dexamethasone*** (if appropriate) this will mostly happen at step 2. ***Contra-indicated – brain tumour patients and those already on steroids (ALL, SCT). Caution in osteosarcoma – discuss with consultant** Consider **dexamethasone*** IV/oral for subsequent courses IF appropriate **Delayed nausea and vomiting.** Dexamethasone* IF appropriate and metoclopramide. ***Contra-indicated – brain tumour patients and those already on steroids (ALL, SCT). Caution in osteosarcoma – discuss with consultant** For doses see CCLG guideline on the management of chemotherapy induced nausea and vomiting here or go to https://www.piernetwork.org/uploads/4/7/8/1/47810883/enc_c_-_cclg_cinv_guideline_march_2018.pdf
High >90%	Carboplatin Carmustine >250mg/m2 Cyclophosphamide 1g/m2 to 2g/m2 Cytarabine 3g/m2/dose Dacarbazine Dactinomycin Methotrexate ≥12g/m2	**Step 1:** **Ondansetron** IV pre chemotherapy then IV/oral regularly *and* **dexamethasone*** IV/oral IF appropriate (see above) *. If steroids contraindicated, prescribe **levomepromazine**.IV/oral ***Contra-indicated – brain tumour patients and those already on steroids (ALL, SCT). Caution in osteosarcoma – discuss with consultant** If steroids contra-indicated prescribe **aprepitant** for patients ≥ 6months old. **Aprepitant:** Dose as per SPC here or go to medicines.org.uk Round dose to nearest 5mg. Interaction with dexamethasone, refer to SPC. If aprepitant contraindicated, prescribe **levomepromazine**.IV/oral **Step 2:** (Ensure all doses in step 1 have been optimised before moving to step 2) Add **levomepromazine** IV/oral if not used in step 1 Subsequent cycles – add **aprepitant** if not used in step 1 for patients ≥ 6months old. **Aprepitant:** Dose as per SPC here or go medicines.org.uk Round dose to nearest 5mg. Interaction with dexamethasone, refer to SPC. **Step 3:** Consider **levomepromazine infusion**. (add **aprepitant** if not

		used in step 1 patients ≥ 6months old for subsequent cycles). **Metoclopramide** can be used instead of levomepromazine for > 1 year olds. **Delayed nausea and vomiting.** Dexamethasone* IF appropriate IV/oral and metoclopramide up to 5 days after chemotherapy completed. ***Contra-indicated – brain tumour patients and those already on steroids (ALL, SCT). Caution in osteosarcoma – discuss with consultant** For doses see CCLG guideline on the management of chemotherapy induced nausea and vomiting here or go to https://www.piernetwork.org/uploads/4/7/8/1/47810883/enc_c_-_cclg_cinv_guideline_march_2018.pdf
Very High >90%	Cisplatin Cyclophosphamide >2g/m2 Ifosfamide Melphalan Thiopeta *Combination chemotherapies:* Cyclophosphamide + anthracycline Cyclophosphamide + etoposide Etoposide + ifosfamide Doxorubicin + ifosfamide Cytarabine 300mg/m2 + etoposide Doxorubicin + methotrexate 5g/m2	**Step 1: Cisplatin based regimen, ifosfamide or melphalan** **Ondansetron** IV pre chemotherapy then IV/oral regularly *and* **Dexamethasone*** IV/oral IF appropriate (see above) ***Contra-indicated – brain tumour patients and those already on steroids (ALL, SCT). Caution in osteosarcoma – discuss with consultant** *and* **≥ 6 months of age, aprepitant:** Dose as per SPC here or go to medicines.org.uk Round dose to nearest 5mg. Interaction with dexamethasone, refer to SPC. OR **< 6 months** of age, **levomepromazine** instead of aprepitant **Step 1: For very high risk regimens without cisplatin, ifosfamide or melphalan.** **Ondansetron** IV pre chemotherapy then IV/oral regularly *and* **Dexamethasone*** IV/oral IF appropriate (see above) **+/- levomepromazine** (for <1 yr to 17yrs) ***Contra-indicated – brain tumour patients and those already on steroids (ALL, SCT). Caution in osteosarcoma – discuss with consultant** **Step 2:** (Ensure all doses in step 1 have been optimised before moving to step 2). – add **aprepitant** for 3 days if not used in step 1 patients ≥ 6months old for subsequent cycles). Add levomepromazine for breakthrough if not given upfront. **Aprepitant:** Dose as per SPC here or go to medicines.org.uk Round dose to nearest 5mg. Interaction with dexamethasone, refer to SPC. Care with ifosfamide and aprepitant – increased risk of ifosfamide mediated neurotoxicity. Add levomepromazine for breakthrough nausea and vomiting if not already commenced **Delayed nausea and vomiting.**

		Give levomepromazine **Metoclopramide** can be used instead of levomepromazine for > 1 year olds For doses see CCLG guideline on the management of chemotherapy induced nausea and vomiting here or go to https://www.piernetwork.org/uploads/4/7/8/1/47810883/enc_c_-_cclg_cinv_guideline_march_2018.pdf
Anticipatory Nausea and vomiting Oral lorazepam prior to chemotherapy.		

****ASCO guidelines 2017**
Costa et al (2015)
West Midlands SACT Advisory Group (2017)
^ ASCO Emetic risk chart 2020
^^ NCCN Clinical Practice Guidelines in Oncology 2018

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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	
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Details of Changes made during review: **Minor changes to recommended initial anti-emetic advice in table 1**	