Antiemetics recommendations for ORAL chemotherapy

Recommendation	Grade of recommendation
We recommend for children receiving **minimal to low** emetic potential chemotherapy: *Ondansetron or granisetron* pre-treatment	Weak
We recommend for children receiving **moderate to high** emetic potential chemotherapy: *Ondansetron or granisetron* pre-treatment and as needed	Strong

Antiemetic recommendation for **low and minimal** emetic parenteral chemotherapy:

Recommendation	Grade of recommendation
• We recommend that children receiving chemotherapy agents of low emetic risk receive: *ondansetron/granisetron*	Strong
• We recommend that children receiving chemotherapy agents of minimal emetic risk receive: *no routine prophylaxis*	Weak

Antiemetic recommendations for **moderately emetic** parenteral chemotherapy

Recommendation	Grade of recommendation
We recommend that children: (less than 6 months) • receiving moderately emetic chemotherapy receive: *Ondansetron/granisetron or palonosetron + dexamethasone*	Strong
• receiving moderately emetic chemotherapy who cannot receive dexamethasone receive: *Palonosetron*	Strong
We recommend that children: (6 months and older) • receiving moderately emetic chemotherapy: *Ondansetron/granisetron or palonosetron + dexamethasone*	Strong
• receiving moderately emetic chemotherapy which is NOT known or suspected tointeract with aprepitant/fosaprepitant and who cannot receive dexamethasone receive: *palonosetron + aprepitant/fosaprepitant*	Weak
• receiving moderately emetic chemotherapy which is known or suspected to interactwith aprepitant and who cannot receive dexamethasone receive: *Palonosetron*	Weak

Antiemetic recommendations for **highly emetic** parenteral chemotherapy

Recommendation	Grade of recommendation
We recommend that children: (less than 6 months) • receiving highly emetic chemotherapy receive: *Ondansetron/granisetron or palonosetron + dexamethasone*	Strong
• receiving highly emetic chemotherapy who cannot receive dexamethasone receive: *Palonosetron*	Strong
We recommend that children: (6 months and older) • receiving highly emetic chemotherapy which is NOT known or suspected to interact with aprepitant/fosaprepitant receive: *Ondansetron/granisetron or palonosetron + dexamethasone + aprepitant/fosaprepitant*	Strong
• receiving highly emetic chemotherapy which is known or suspected to interact with aprepitant/fosaprepitant receive: *Ondansetron/granisetron or palonosertron + dexamethasone*	Strong
• receiving highly emetic chemotherapy which is NOT known or suspected to interact with aprepitant/fosaprepitant and who cannot receive dexamethasone receive: *palonosetron + aprepitant/fosaprepitant*	Weak
• receiving highly emetic chemotherapy which is known or suspected to interact with aprepitant/fosaprepitant and who cannot receive dexamethasone receive: *Palonosetron*	Weak

Antiemetic recommendations for the management of **delayed** nausea and vomiting:

Recommendation	Grade of recommendation
• We recommend that children receiving chemotherapy with agents known to cause delayed nausea and vomiting (e.g., cisplatin, carboplatin (> 600 mg/m^2), anthracyclines (> 40 mg/m^2) and (cyclophosphamide + anthracycline) should receive: *Palonosetron + aprepitant/fosaprepitant (unless contraindicated) + dexamethasone (unless contraindicated)*	Weak
• We recommend that if delayed nausea and vomiting occurs during a cycle immediately consider: 1. Adding a corticosteroid if not contraindicated (avoid in AML, brain tumor patients and patients with unhealed wounds and any protocol that steroids are contraindicated). Continue for 24 hours after the nausea and vomiting has resolved. 2. If adding corticosteroids alone fails, substitute ondansetron with palonosetron with olanzapine (unless contraindicated) OR aprepitant/fosaprepitant (unless contraindicated). 3. If corticosteroids are contraindicated give palonosetron with olanzapine (unless contraindicated) OR with aprepitant/fosaprepitant (unless contraindicated).	Weak
• We recommend for children who have experienced delayed nausea and vomiting in a previous cycle consider the following for addition of antiemetics to upfront CINV prophylaxis for subsequent cycles: 1. Addition of aprepitant/fosaprepitant upfront, if not contraindicated 2. Addition of corticosteroid, if not contraindicated. 3. Switch 5-HT3 antagonist from ondansetron/granisetron to palonosetron. 4. Consider the addition of olanzapine, if not contraindicated.	Weak

Antiemetic recommendation for anticipatory and **refractory** nausea and vomiting::

Recommendation	Grade of recommendation
• We recommend that lorazepam may be used to prevent or treat **anticipatory CINV** in children.	Weak
• We recommend for children experiencing **breakthrough CINV**: Upgrade or escalate the acute CINV prophylaxis provided to that recommended for chemotherapy of the next higher emetic risk for children receiving acute CINV prophylaxis recommended for highly emetic chemotherapy: 1. Add olanzapine if not contraindicated 2. If olanzapine contraindicated or fails to work add lorazepam and if this does not work add either methotrimeprazine or nabilone or dimenhydrinate (if not already receiving). 3. If the nausea and vomiting thought to be delayed phase change ondansetron to palonosetron.	Weak
• We recommend for children experiencing **refractory CINV** and who are receiving acute CINV prophylaxis for minimally, low, or moderately emetic chemotherapy, clinicians should upgrade or escalate the acute CINV prophylaxis provided to that recommended for chemotherapy of the next higher level of emetic risk.	Weak
• We recommend for children experiencing **refractory CINV** and who are receiving acute CINV prophylaxis for highly emetic chemotherapy and who cannot receive olanzapine, we suggest that one of the following antiemetic agents be added to guideline-consistent CINV prophylaxis: 1. Change ondansetron to palonosetron 2. Consider adding aprepitant/fosaprepitant even if contraindicated (in consultation with the oncologist/pharmacist) 3. Add any breakthrough medication e.g., methotrimeprazine (also known as levomepromazine) or nabilone 4. Consider stimulation of Nei Gaun (P6) by means of acupressure or electroacupuncture	Weak

Non-pharmacologic management of CINV

Recommendation	Grade of recommendation
• Although beyond the scope of this guideline acupuncture, guided imagery, music therapy, progressive muscle relaxation and psycho-educational support and information may be of benefit in preventing acute CINV in children receiving chemotherapy agents.	Weak
We suggest that the following dietary interventions may be effective in preventing CINV: • Advise the child not to eat for at least thirty minutes before chemotherapy starts • Several small meals a day are better tolerated than three large meals • Offering food while it is cold may help as cold food smells less • Avoid fried, fatty or spicy foods • Bland foods such as toast, crackers, potatoes, rice, vegetables, and easily digested meats (chicken) are often better tolerated • When nausea/vomiting is present, do not pressure the child to eat, they may acquire a learned aversion to certain foods • Reduce food aromas and other stimuli with strong odors	Weak