Sheffield Children's NHS
NHS Foundation Trust

Constipation Prophylaxis and Management For Haematology & Oncology Patients

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Intended Audience

This document contains information and clinical guidelines for management of children attending the Oncology and Haematology department. It is to be used by staff within the Trust whenever they are caring for these children either in hospital or at home.

Purpose

To provide guidance on the causes, investigations and treatment options for constipation prophylaxis and treatment for haematology and oncology patients at SCH.

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Constipation – Prophylaxis and Management

1. Introduction

Constipation is a decrease in the frequency of bowel movements, characterised by the passing of hardened stools that may be associated with straining and pain. It is common in children with cancer. Anal fissures may develop as a result, which, in the neutropenic patient, carry an increased risk of infection. Parents and patients should be advised regarding the importance of maintaining regular passing of soft stools (at least every 48 hours), throughout treatment.

2. Causes

Children receiving chemotherapy for cancer have many factors that may predispose them to constipation such as pain, reduced fluid intake, reduced fibre intake and medications that may cause constipation.

In a child with constipation, it is recommended to review any potential drug causes. Prophylactic laxatives may need to be used if the constipating drug cannot be stopped.

The following drugs are often used for symptom control in the child with cancer and can cause constipation:

- Opiates
- Diuretics
- Anti-emetics, e.g. ondansetron, aprepitant
- Anti-histamines - particularly sedating antihistamines due to anti-muscarinic side-effects, e.g. promethazine, cyclizine
- Anti-depressants - particularly tricyclics, e.g. amitriptyline
- Calcium channel blockers e.g amlodipine

Vinca alkaloid chemotherapy causes constipation by slowing GI transit time. If a child is receiving weekly vincristine or vinblastine, consider prophylactic laxative treatment.

In addition children with cancer may have other non-oncological causes of constipation. For details see Sheffield Children's NHS Foundation Trust (SCFT) SCFT Medical Guidelines for Paediatric Medicine Section 4.2, Constipation and Soiling Reg ID No 1068

3. Symptoms & Investigation

Symptoms and signs include hard stools, infrequency of defaecation, pain or bleeding on defaecation, abdominal pain, faecal soiling (overflow diarrhoea), urgency after meals, anal fissures, nausea and vomiting, abdominal distension, anorexia, headache.

Investigation requires:

- A detailed history of constipation, fluid and food intake and medication
- Abdominal examination

Abdominal X-ray – is not routine, but may be required to confirm the extent of the faecal impaction.

4. Treatment

Prophylactic treatment is recommended for children receiving weekly vinca alkaloids. This includes children with ALL during induction or delayed intensification blocks, and children with low grade glioma, Wilms tumour or soft tissue sarcomas.

Children who are prescribed short term opiates should also receive prophylactic treatment if they are able to take oral medication. Lactulose is not very effective in opioid induced constipation, so should not be used as primary prophylaxis agent.

Constipation in children receiving end of life care is multifactorial. Therefore, refer to the symptom control (constipation) section of the SCFT end of life care guideline. http://staff.sch.nhs.uk/documents/3-clinical-guidelines/390-end-of-life-care-sheffield-integrated-paediatric-guidelines-on

Treatment of existing constipation should include increasing dietary intake of fibre and ensuring adequate fluid intake. Patients on naso-gastric feeds can often have fibre-containing feeds – consult the dietitian.

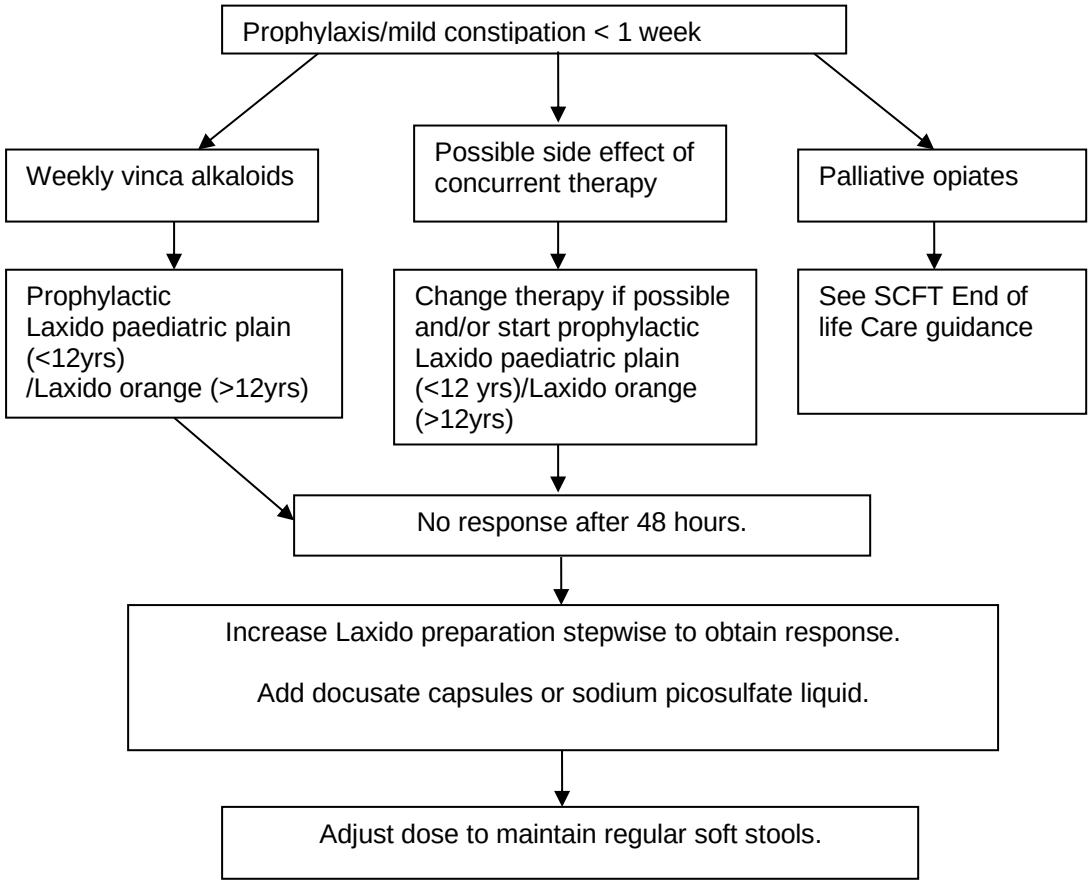
Do not give rectal laxatives without senior medical staff approval, as trauma to the anal region can result in severe infection in neutropenic patients.

It is important to include a faecal softener (see table 1), in addition to a stimulant laxative for treatment. This minimises trauma to the anus on defaecation and can be continued to maintain stool consistency after the constipation has resolved.

It is also important to ensure that the preparation chosen is palatable to the patient. Poor compliance is an issue with laxatives and causes the condition to deteriorate.

In older children where possible encourage the use of tablets/capsules that can be swallowed whole. In younger children sodium picosulfate syrup may be preferred. (N.B. This is not the same as picolax sachets.)

Flow diagram: prophylaxis/mild constipation



Children with constipation causing abdominal pain may need pain relief. Try to avoid or minimise the amount of opiates administered. Warm baths and abdominal massage may help. Topical lidocaine 2% gel containing chlorhexidine (Instillagel), can be applied around the anus to reduce the pain of defaecation. Topical glyceryl trinitrate rectal ointment 0.4% will relax the anal sphincter, relieve pain and aid healing of anal fissures. However, excessive application is associated with headache, dizziness and postural hypotension.

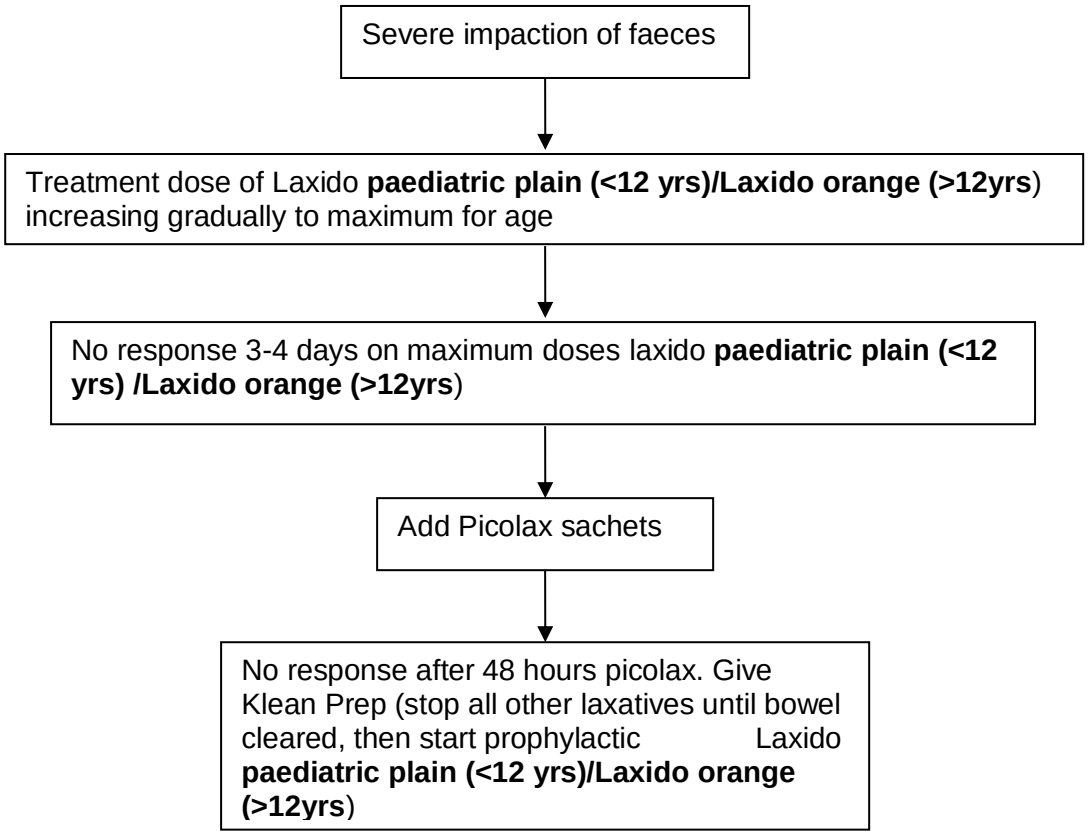
Treatment should commence with **Laxido paediatric plain (<12 yrs)/Laxido orange (>12yrs)** for mild constipation. Add a **stimulant laxative**, if there is inadequate response after increasing the dose, in 24-48 hours. Ensure that patients/parents are not reporting overflow as efficacy of laxative treatment. Adjust doses to achieve a regular soft stool. Once acute constipation has resolved, maintenance doses of laxatives may be needed to maintain regular evacuation.

If there is inadequate response then increase **Laxido paediatric plain (<12 yrs)/Laxido orange (>12yrs**) sachets to a treatment dose, which is effective in softening large faecal masses if given sufficient time (3-4 days). Increase the dose of this gradually, suspending the powder in fruit squash or water.

Picolax sachets, a strong stimulant, should only be used for a maximum of 2-3 days, and will cause abdominal discomfort and possible electrolyte imbalance.

Klean Prep bowel wash out is the final resort, usually requiring administration via a naso-gastric tube.

Flow diagram: Severe constipation (see table below for doses)



Constipation – Prophylaxis and Management

Drug	Method of Action	Preparations available		Dose and administration notes		
Laxido paediatric plain Maintenance/ prophylaxis	Polyethylene glycol Osmotic effect/ faecal softener	Sachets	dissolve each sachet in 60mls clear fluid	**1-11 months** **1- 5 years** **6-11 years**	**½ - 1 sachet daily** **1 sachet** increasing to max 4 sachets/day **2 sachets (**Max 4 sachets/day)	**Once daily**
Laxido paediatric plain **TREATMENT**				**1-11 months** **1- 4 yrs** **> 5 -11yrs**	**½ - 1 sachet daily** **2 sachets** (to max 8 sachets/day) **4 sachets** (to max 12 sachets/day)	**Once daily or in divided doses. Increase by 2 sachets every 48 hours to maximum** Reduce to maintenance once impaction is cleared.
Laxido orange maintenance/ prophylaxis		Sachets	Dissolve each sachet in 125mls clear fluid	**>12 years**	**1-3 sachets**	**Once daily** or in divided doses.
Laxido orange **TREATMENT**				**> 12 years**	**4 sachets, increasing up to 8 sachets** daily.	
Senna	Stimulant virtually colon specific	Tablets Syrup	7.5mg sennosides 7.5mg/5ml sennosides	**1 mth-3 yrs** **4 - 17 yrs**	**3.75mg – 15mg** **3.75mg – 30mg**	**Once daily** Start at lowest dose for age & Increase slowly to effect.
Docusate	Stimulant Faecal softener	Capsules Paed Solution Adult Solution	100mg 12.5mg/5mls 50mg/5mls	**6-23mths** **2-11 years** **> 12 yrs**	**12.5mg (**Use paediatric oral solution) **12.5-25mg (**Use paediatric oral solution) **up to 500mg/day**	**3 times daily.**

Constipation – Prophylaxis and Management

Drug	Method of Action	Preparations available		Dose and administration notes		
Bisacodyl	Stimulant	Tablets	5mg	**4-18 yrs**	**5mg – 20mg**	**Once daily** Start at lowest dose
Sodium picosulfate	Stimulant	Elixir	5mg in 5mls	**1month- 3yrs** **4-17yrs**	**2.5mg – 10mg** **2.5-20mg**	**Once daily** Adjusted according to response
Picolax Avoid with renal impairment (eGFR <30ml/min/1.73m2)	Stimulant	Sachets	Sodium picosulfate 10mg with magnesium citrate	**1yrs** **2-3 yrs** **4-8 yrs** **9-17 years**	**¼ sachet twice daily** **½ sachet twice daily** **1 sachet morning, ½ sachet afternoon** **1 sachet twice daily**	
Klean-Prep	Bowel cleansing solution	Sachets	Polyethylene glycol Dissolve each sachet in 1000mls water	Follow SC(NHS)T protocol for administration (appendix 1)		

5. Further guidelines:

SC(NHS)FT Medical Guidelines for Paediatric Medicine Section 4.2, Constipation and Soiling Reg ID No 1068

SC(NHS)FT (2019) The preparation and administration of bowel cleansing solutions. CG1784v2

SC(NHS)FT (2019) Sheffield integrated paediatric guidelines on end of life care, guidelines for good practice. CG1707

6. References

Paediatric Formulary Committee. BNF for Children (online) London:BMJ Group, Pharmaceutical Press, and RCPCH Publications http://www.medicinescomplete.com [Accessed May 2022]

National Institute for Health and Care Excellence (Nov 2020). Clinical Knowledge Summary: Constipation in children.

Appendix 1 - Klean Prep Administration

Klean-prep sachets, when reconstituted, produce an iso-osmotic solution for whole bowel cleansing prior to surgery, colonoscopy or radiological procedures. It is not licensed for use in children, but has been used routinely in many hundreds of children for ten years without a problem. It can also be used for bowel clearance with faecal impaction.

The Klean-Prep fluid washes out stool into a stoma bag or via the anus, so the patient needs to be prepared for continuous diarrhoea until the faecal fluid is clear.

Klean- Prep contains electrolytes so that the patient will not become metabolically upset or dehydrated. The patient can either drink the solution (which is unlikely in children) or it can be administered via a nasogastric or gastrostomy tube.

This procedure may sound unpleasant, but the entire bowel can be prepared in 3-8 hours, depending on the volume of solid content and size of the patient.

If a patient is very constipated pre-treatment with laxatives is important initially soften the stool as far as possible. For patients with stomas the bowel distal to the stoma should be washed out as before.

Klean-Prep must be prescribed on the oral prescription sheet. Pharmacy will dispense sachets to the ward which should be made up with water.

Protocol for the Administration of Klean-Prep Solution

Each Klean-Prep sachet should be reconstituted with 1 litre of water.

The resulting solution is either taken **orally** or administered via a **naso-gastric or gastrostomy tube** using an appropriate pump e.g. One litre bags and giving sets for Kangaroo pumps can be obtained from the dieticians.

Rate of oral/naso-gastric administration

Age 1-18 years	10ml/kg per hour	for first 30 minutes	then
	20ml/kg per hour	for 30 minutes	then
	25ml/kg per hour		

Maximum total dose is 100ml/kg or 4L
In each group this rate should be increased if necessary up to 25ml/kg/hr to produce diarrhoea. If the patient experiences pain or vomits the rate of administration should be slowed down to rate they can tolerate and increased when possible.

The solution is administered until faecal fluid is clear. The rate of administration is then slowed down for an hour, and if faecal fluid has been clear for at least three bowel actions or for one hour in a patient with a stoma, the solution can be discontinued.

During Klean -Prep administration small amounts of Dioralyte or water can be offered to the patient as tolerated.