SESLHD GUIDELINE COVER SHEET

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SUMMARY	A diverse clinical syndrome in which the patient has bowel obstructive symptoms due to intra-abdominal malignancy, most commonly gynaecological or colorectal carcinomas.

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SESLHD GUIDELINE COVER SHEET

Health
South Eastern Sydney
Local Health District

BOWEL OBSTRUCTION – MEDICAL MANAGEMENT OF MALIGNANT BOWEL OBSTRUCTION

Section 1 - Background

This guideline has been established to standardise the treatment of malignant bowel obstruction across South Eastern Sydney Local Health District.

Malignant bowel obstruction is a diverse clinical syndrome in which the patient has bowel obstructive symptoms due to an intra-abdominal malignancy, most commonly gynaecological or colorectal carcinomas.

The guideline is based on best practice and aims to reduce clinical error / variation and improve patient outcomes.

Section 2 - Principles

DEFINITIONS AND PATHOPHYSIOLOGY

Malignant Bowel Obstruction may be partial or complete, single or multi-level, and involve the large bowel only, or both small and large bowel. The incidence of bowel obstruction can be as high as 42% in ovarian cancer and 28% in colorectal cancer.

Obstruction may occur:

- within the bowel itself
- within the bowel wall
- extrinsic to the bowel

In early bowel obstruction the bowel will continue normal peristaltic function with little or no through movement of content. This greater luminal content and volume causes distension and increased epithelial surface area leading to increased water and electrolyte secretion.

Formation of inflammatory oedema around the site of tumour can contribute to obstruction.

If the obstruction is irreversible, patients may experience the cumulative effects of nutritional deficits. These are caused by a combination of malabsorption and bowel malfunction, as well as the systemic effects of cancer anorexia-cachexia syndrome and metastatic organ involvement. The expected outcome of an irreversible obstruction is death. The great burden of disease common in this patient population requires comprehensive symptom assessment and early, proactive management.

Section 3 - Process

3.1. SYMPTOMS OF MALIGNANT BOWEL OBSTRUCTION

The patient may experience:

- colicky abdominal pain
- discomfort and pain due to abdominal distension
- nausea
- vomiting
- altered bowel habit
- tenesmus

3.2 DIAGNOSIS

Several physiopathologic mechanisms may be involved in the onset of gastrointestinal obstruction:

- Extrinsic occlusion of the lumen: enlargement of the primary tumours or recurrence, mesenteric and omental masses; abdominal or pelvic adhesions; postirradiation fibrosis (= mechanical)
- Intraluminal occlusion of the lumen: polypoid lesions due to primary cancer or metastases, annular tumoral dissemination (= mechanical)
- Intramural occlusion of the lumen: intestinal linitis plastica (= mechanical)
- Intestinal motility disorders (pseudo-obstruction): infiltration of the mesentery or bowel muscle and nerves, malignant involvement of the celiac plexus, paraneoplastic neuropathy in patients with lung cancer (= mechanical and functional)
- Bowel obstruction is often due to multifactorial causes. Inflammatory oedema, faecal impaction, and constipating drugs are likely to contribute to the development of intestinal obstruction (= mechanical and functional)[1]
- Malignant bowel obstruction is diagnosed by a Medical Officer, Palliative Care Nurse Practitioner or Palliative Care CNC
- The level and degree of obstruction must be ascertained as these impact management options:

➢ **Consider whether obstruction is mechanical or functional (usually due to infiltrative bowel wall disease and/ or peritoneal disease)**

➢ **Consider site:**

- **High**: expect high-volume vomiting
- **Low**: expect lesser vomiting, but may be faeculent

3.3 DECISION PATHWAY

Upon diagnosis of malignant bowel obstruction including the level and degree of obstruction, the following decisions must be made:

- What surgical or anti-cancer therapeutic options (including chemotherapy or radiotherapy) are available to the patients?

- Consider surgery if mechanical obstruction, single level only & fit for general anaesthetic. Palliative surgery should be considered first line in patients with good performance status if there is a single level or transition point.
- Consider stenting if single level obstruction at a suitable site (duodenal or low colonic). Colonic stents may be a useful option in the management of patients with large bowel obstruction due to recurrent gynaecologic malignancy. Stenting also appears to be a safe and effective addition to treatment options for colorectal obstructions.

- Is the malignant obstruction reversible with medical management alone?
  - Early and intensive treatment may not only reduce gastrointestinal symptoms, but also reverse functional malignant bowel obstruction, improving both quality of life and survival.
  - If potentially reversible, consider high-dose dexamethasone 8-16 mg daily, and prokinetics if not contraindicated.
- Is hydration required?
  - Hydration may be of benefit if the patient is clinically dehydrated.
- Is dietitian input indicated?
  - Dietitian input and provision of hydration are important considerations in patients with localised disease who are undergoing high dose therapies with curative intent, as well as for patients who are planned for debulking surgery without curative intent but who have a longer prognosis.

3.4 MANAGEMENT OF SYMPTOMS OF MALIGNANT BOWEL OBSTRUCTION

- The route of medication administration depends on clinical circumstances.
- As the oral route is unreliable in obstruction, the subcutaneous route is recommended. If there is an existing peripheral intravenous (IV) cannula, this may be used for anti- emetics, for example, such as metoclopramide.
- Bowel obstructions can be partial or complete, single to multiple and due to benign or malignant causes. In the majority of patients with advanced cancer, there appears to be a slow progression from partial to complete bowel obstruction, whereas in others the obstructive symptoms appear to be intermittent.
- Partial malignant bowel obstruction progresses to complete obstruction over several days. A hypertensive state in the lumen and damage of intestinal epithelium produces an inflammatory response and a release of prostaglandins, potent secretagogues and nociceptive mediators. Bioactive peptides, particularly vasointestinal peptide (VIP), mediate pathophysiologic alterations accompanying MBO such as hyperaemia and oedema of the intestinal wall, as well as the accumulation of fluid in the lumen. Superimposed segmental uncoordinated activity may not be sufficient to surmount the obstacle. Therefore, a mechanism may initially be functional and reversible and then become complete. An early and intensive intervention that targets different aspects of MBO may be of value.
- Consider Gastrografin (Sodium amidotrizoate) 50ml orally if not vomiting (particularly if faecal loading is contributory)

3.4.1. Nausea

If any possibility of reversible / functional obstruction

- Metoclopramide 10mg TDS – QID or via continuous subcutaneous infusion (CSCI) over 24 hours (higher doses can be used under Palliative care guidance, caution in the elderly and in renal failure). Metoclopramide should be used particularly if reversal of functional obstruction is being attempted, i.e. where there is essentially pseudo-obstruction/obstruction secondary to peritoneal,

mesenteric or omental carcinomatosis impairing peristalsis. In contrast, metoclopramide should be avoided if mechanical obstruction where cancer is mechanically blocking the bowel lumen from within or extrinsic to the bowel. If symptoms are exacerbated (e.g.: vomiting or cramping abdominal pain), metoclopramide should be discontinued, and other lines of medications considered:

In complete obstruction or if metoclopramide contraindicated.

- **First Line option:** Cyclizine subcutaneous 25-50mg TDS
- **Second Line option:** Haloperidol subcutaneous 0.5-1.0mg BD
- **Third Line option:** Levomepromazine subcutaneous 6.25-12.5mg BD -QID, Max dose 25mg/day

3.4.2 Vomiting

- Add an anti-secretory agent to reduce intestinal secretions and control vomiting as anti-nausea medications alone may be insufficient.
- Vomiting should be reduced to an acceptable level for the patient. Ideally aim for complete resolution or 1-2 times/24hrs.
- **If potentially reversible obstruction**: source Ranitidine, if available (see below).
- If likely **irreversible obstruction**, first line is Ranitidine (if available) then Octreotide or Hyoscine Butylbromide (Buscopan*)*

Ranitidine:

Ranitidine is reserved primarily for potentially reversible malignant bowel obstructions, given access to medication now limited.

- Complete Special Access Scheme (SAS) Category A form and submit to pharmacy when prescribing. **Use only on recommendation by a Palliative care specialist.**
- Prescribe 200mg/24hrs via syringe driver subcutaneously or as continuous subcutaneous infusion via IMED pump (add drug to 100mL normal saline and label bag and lines as subcutaneous and then run over 24hrs though pump).
- Ranitidine may also be administered as 50mg subcutaneously QID if using the 50mg/2mL preparation.
- If unable to source Ranitidine, Famotidine 20mg subcutaneously bd in divided dosing or 20-40mg subcutaneously via a syringe driver may be considered as a reasonable alternative (for CSCI dilute using 0.9% sodium chloride). Complete Special Access Scheme (SAS) Category A form and submit to pharmacy when prescribing. **Use only on recommendation by a Palliative care specialist.**

Octreotide:

- Somatostatin analogue which reduces the secretion of water, sodium and chloride, and increases water and electrolyte absorption. Octreotide may also produce an increase in abdominal pain via effects on small bowel. Effects on gastric and large bowel motility give net effect of overall reduced GIT motility.
- Clinical experience shows that Octreotide seems to be more effective in the control of vomiting in patients with higher bowel obstruction.
- Important to note that Octreotide **decreases peristalsis**, so ideally avoided or minimised if attempting to reverse obstruction initially. If obstruction is reversible, and octreotide is being used for symptom control, plan to administer lowest possible doses, for shortest possible duration.

- Initial dose is 100-200 mcg TDS PRN or Octreotide can be administered via continuous subcutaneous infusion between 300-600mcg over 24 hours.
- This dose should be increased by 100-200mcg each 24 hours until control of vomiting is achieved.
- Maximum dose of 1200-1600mcg per 24 hours needs to be achieved more rapidly if ongoing high-volume vomiting persists after the initial dose.
- Review efficacy at Day 3, and if no benefit in reducing volume and frequency of vomiting at maximum dose, then cease.[4]

Hyoscine Butylbromide (Buscopan)

ONLY if obstruction likely NOT reversible

- 60-80mg Subcutaneously Day 1 (20mg QID)
- If ongoing vomiting, increase to 120mg Subcutaneously via CSCI -Syringe driver Day 2
- If ongoing vomiting, increase to 240mg Subcutaneously via CSCI -Syringe driver Day 3

3.4.3 Reduction of inflammation

- Corticosteroid (dexamethasone) may be useful in reducing peri-tumour oedema in the bowel (Ripamonti et al, 2001)
- A stat dose of dexamethasone or high-dose dexamethasone dosing over 48 hours combined with the above management of nausea and vomiting, may often reverse partial obstruction.
- If no contra-indications, administer Dexamethasone, at least 4mg subcutaneously or intravenously mane and up to up to 8mg mane & midi, for first 48 hours, and then review. If patient is not vomiting, Dexamethasone may be administered orally
- Consider co-prescribing proton pump inhibitor: lansoprazole 15-30mg daily (orally dispersible tablet) or pantoprazole 40mg daily intravenously or subcutaneously or 40-80mg CSCI over 24 hours.
    - SC bolus: dilute pantoprazole 40mg in 10mL sodium chloride 0.9% and administer via deep subcutaneous bolus daily over 2 minutes (note: this volume may be better tolerated over CSCI daily over 20 minutes).
    - CSCI: dilute pantoprazole 40-80mg in 20mL of sodium chloride 0.9% administered over 24 hours (note: no compatibility data for use with other medications in a syringe driver).

3.4.4 Continuous Abdominal Pain

- For pain, administer subcutaneous opioids.
- The opioid of choice and dosing of opioids will vary depending on the individual patient and their previous opioid requirements.
- Elderly or frail opioid naïve patients with normal renal function could be started on morphine 1–2.5mg subcutaneously q4h, with 1-2.5mg subcutaneously q2h prn to a maximum of 6 doses in 24 hours.
- Younger patients with normal renal function can commence on morphine 2.5-5mg subcutaneously q4h with 2.5-5mg subcutaneously q2h prn to a maximum of 6 doses in 24 hours.
- Opioids are then titrated according to pain.

3.4.5 Cramping colic pain

- Ensure pro-kinetics are ceased (see 1.5.1) and Octreotide dose reviewed (see 1.5.2) as they can contribute to cramping abdominal pain.

- Commence Hyoscine Butylbromide 10-20mg subcutaneous q4h PRN*, maximum dose 80mg/24 hours initially.*
- Hyoscine Butylbromide can be titrated up to a maximum of 40mg subcutaneously every 4 hours depending on the severity of symptoms.

  NB this maximum dose is only used at end of life for intractable symptoms and is NOT suitable where reversibility of obstruction is expected.
- Hyoscine Butylbromide is recommended for short term management of severe colic and should be reviewed after three (3) days.
- If symptoms are resolving, wean down the Hyoscine Butylbromide dose daily.
- If symptoms of severe colic pain persist or worsen after three days of treatment with subcutaneous Hyoscine Butylbromide, consult specialist Palliative Care for advice.

3.4.6 Tenesmus

Tenesmus is the sensation of needing to urgently evacuate the bowels even when empty. Tenesmus is often accompanied by abdominal pain, cramping and straining. It can be a distressing symptom and can contribute to or worsen patient anxiety.

- Treat with PRN analgesia and short acting anxiolytics if indicated.
- An anti-neuropathic agent (Pregabalin 25mg PO nocte initially) may also be beneficial.
- Consider Nifedipine immediate release 10mg TDS as a smooth muscle relaxant, which can be given under the guidance of the Palliative Care Team. A Special Access Scheme (SAS) Category A form needs to be completed and submitted to pharmacy when prescribing only on recommendation by a Palliative Care Specialist.

3.4.7 Refractory symptoms

- Nasogastric (NG) tubes are invasive and often poorly tolerated. They should ideally be avoided in patients with malignant bowel obstruction. However, the patient may prefer NG tube insertion to intermittent or frequent vomiting, so decision making is guided by symptomatology.
- In a patient with a high bowel, small bowel, or gastric outlet obstruction, or with intractable vomiting, a venting gastrostomy may be indicated. The procedure is undertaken radiologically, making it safer for seriously ill patients.
- Either an NG or venting gastrostomy can allow patients to tolerate drinking fluids for comfort/pleasure.

3.4.8 PRN Medications

- As symptoms can change, PRN medications for pain, nausea, colicky abdominal pain and anti-secretory medications should be prescribed.
- If there is a risk of a large, catastrophic event (e.g., bowel perforation) or ongoing distressing faeculent vomiting, PRN anxiolytic or sedative should also be available. Please contact Palliative Care Service for advice
- During a catastrophic (terminal) event, subcutaneous Midazolam 2.5–5mg administered every 15 minutes (maximum three doses) can be used. Please contact Palliative Care Service for guidance.
- To manage distress in the terminal phase, administer subcutaneous Midazolam 2.5–5mg q2h PRN to an initial maximum dose of 30mg in 24 hours. See “Terminal Care/End of Life Care Supportive Medications- Powerplan” on eMeds.

3.5. MANAGEMENT OF DIET AND HYDRATION

3.5.1 Diet and oral intake

- Minimize initial intake for 24hrs (nil by mouth or ice chips) until vomiting is managed or reduced. Progress to clear and then free fluids.
- With established malignant obstruction, patients may eat, and drink as tolerated but may be more comfortable on a clear fluid diet. (Note: fluid diets are nutritionally restrictive, dietitian referral is recommended for patients on a fluid diet/nil by mouth for ≥ 3 days).
- For prolonged partial or recurrent obstruction consider a low residue diet and oral nutrition supplements (dietitian referral recommended).

3.5.2 Hydration

- **Artificial hydration is indicated for correction of dehydration related symptoms ONLY**:
  - Recommendation is normal saline 10-20ml/kg/24 hours.
- High volume IV hydration is contraindicated and may result in production of more bowel secretions. A balance between efficacy of treatment and adverse effects is necessary, with exacerbation of symptoms being the guiding parameter.
- Consider hypodermoclysis (subcutaneous fluids) as an alternative. A maximum of 1 litre of fluids intermittently overnight may alleviate dehydration-related symptoms in malignant bowel obstruction.
- Dry mouth can be improved with regular mouth care:
  - sodium bicarbonate mouth washes QID and saliva substitutes QID or as tolerated by the patient.
  - educate patient and family to administer mouth care.

3.6 RE- ESTABLISHMENT OF BOWEL FUNCTION

- Consider return to normal bowel functioning when obstruction has resolved.
- Consider Microlax or olive oil enema if low faecal loading diagnosed.
- Reintroduce regular oral aperients.

3.7 DISCHARGE PLANNING

- Refer to the Palliative Care Consult team for discharge planning and liaison.
- A care plan with comprehensive PRN medications for management of recurrent symptoms must be developed.
- Referral to the Community Palliative Care Team (CPCT) for ongoing support to patient and family may be beneficial on discharge.

3.8 TARGET AUDIENCE

- Registered Nurses
- Enrolled Nurses
- Medical Officers

Section 4 - References

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SESLHDPR/175 - Administration of subcutaneous medication in Palliative Care

NSW Health Guideline GL2021_004 - End of Life Care and Decision-Making

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Section 5 - Version Approval and History

Date	Version	Version and approval notes
5 December 2024	1.0	New document. Guideline converted from SGH/TSH CLIN289 by District Palliative Care teams. Approved by SESLHD Drug and Therapeutics Committee and SESLHD Patient Safety and Quality Committee.

Section 6 - APPENDIX A