MEDICAL MANAGEMENT OF MALIGNANT BOWEL OBSTRUCTION

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GUIDELINE DEVELOPMENT GROUP

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CURRENT STANDARDS AND GUIDELINES

DR FAWAD AHMAD
• The term “bowel obstruction” covers a range of clinical situations and diagnosis may be difficult. Bowel obstruction may be permanent or intermittent; complete or partial; acute or chronic and may occur at any point along the gastrointestinal tract.

• Bowel obstruction may be caused by intrinsic or extrinsic mechanical obstruction or an abnormality in gut motility.
• Patients with small bowel/high intestinal obstruction are likely to experience the symptoms of vomiting and abdominal colic.

• Patients with large bowel/low intestinal obstruction are likely to experience the symptoms of abdominal distension and constipation.

• If the lumen of the gastrointestinal tract is occluded, fluid secreted by the bowel wall accumulates within the lumen. This results in bowel distention and stimulates release of further fluid from the gastrointestinal tract.

• The management of bowel obstruction in advanced cancer may be medical or surgical, or a combination of both approaches. The aim is to control symptoms including nausea, vomiting and abdominal pain.
• If the obstruction is thought to be complete, prokinetic agents and stimulant laxatives should be discontinued. If the obstruction is sub-acute or incomplete, then it may be appropriate to use prokinetic agents, rectal measures and softening laxatives providing the patient is not describing abdominal colic.

• During the medical management of bowel obstruction, the majority of patients may be adequately hydrated with small amounts of oral fluid. If a patient develops persistent thirst, parental fluids may be an option.

• Surgical intervention may involve: the formation of a stoma, bypass, resection, stenting or a venting gastrostomy.
• Self-expanding metallic stents can alleviate malignant bowel obstruction and should be considered for patients with single level obstruction distal to the splenic flexure.
GUIDELINES

Initial management

- Rectal examination should form part of the initial assessment of any patient with suspected bowel obstruction. Constipation should be excluded. If the rectum is empty an abdominal radiograph should be considered if appropriate [level 4]

- In obstruction of the small bowel, the bowel contents are liquid. In partial large bowel obstruction, the use of movicol or idrolax may be helpful. However they should be discontinued in complete obstruction. Faecal softeners/gentle stimulants such as sodium docusate should be considered for partial obstruction. Stimulant laxatives should be discontinued. (See guidelines on the management of constipation) [level 4]
• If the history is suggestive of low bowel obstruction, a trial of metaclopramide should be considered to control symptoms of nausea and vomiting. [Level 3] It should not be used if there is intestinal colic. In patients where metaclopramide is contraindicated, alternative antiemetics to be considered are cyclizine/haloperidol or levomepromazine. [Level 4]

• Hyoscine butylbromide may be used to reduce gastointestinal secretions and abdominal colic. Glycopyronuim is an alternative to hyoscine butylbromide. [Level 3]

• Octreotide may also be used to reduce gastrointestinal secretions and is recommended as a second line option. Ocreotide may have a more rapid effect than hyoscine butylbromide. [Level 3]
In a patient with a high intestinal obstruction, consider the use of an intravenous proton pump inhibitor as this may reduce the volume of gastrointestinal secretions e.g. Omeprazole 40mg intravenously once daily. Ranitidine via a continuous subcutaneous infusion has also been shown to reduce secretions. [Level 4]

Corticosteroids may also help to achieve symptom control. Consider a trial of dexamethasone 8mg subcutaneously for 5 days. Corticosteroids may have a favourable impact on the outcome of the episode of malignant bowel obstruction. [Level 2+]
GUIDELINES

- Opioid analgesia and antispasmodics should be titrated to achieve good pain relief [Level 4]

- Table 9.1 illustrates the drug options available for the management of bowel obstruction (see N&V guidelines)

- A surgical opinion should always be considered as part of the management of any patient with bowel obstruction. Factors associated with a more favourable outcome following surgery include:
  - Single level of obstruction
  - Albumin 30g/l.
  - Absence of ascites
  - No previous oncological treatments in the last 6 months [level 2+]
GUIDELINES

Management of resolving bowel obstruction

• If symptoms are controlled for 48 hours, or appear to be resolving, then medication should be reduced to the lowest dose possible to maintain good symptom control. [Level 4]

• Prokinetic agents and laxatives may be considered at this stage [Level 4]

• Laxatives are only of value in large bowel obstruction, bowel contents are liquid in small bowel obstruction [Level 4]

• Prokinetic agents such as metaclopramide may help promote gastric motility [Level 4]

• Some patients may be able to recommence oral medication if the obstruction is relieved. [Level 4]
GUIDELINES

Use of a nasogastric tube

- Consider a wide bore nasogastric tube for patients with upper gastrointestinal obstruction and/or intractable large volume vomiting [Level 4]

Venting gastrostomy

- A venting gastrostomy can improve the symptoms of malignant bowel obstruction. It should be considered in patients with intractable symptoms who have a prognosis of >2 weeks. If a nasogastric tube has helped improve symptom control it is possible that a venting gastrostomy may also be effective [Level 4]
1. The multidisciplinary notes should record:
   The finding of the rectal examination on initial assessment.
   The presence and severity of abdominal colic, nausea and vomiting.
   The number of vomiting episodes in 24 hours [Grade D]

2. Consideration of a surgical opinion and the decision should be documented in the case notes [Grade D]

3. Medication should be delivered by continuous subcutaneous infusion. Breakthrough medication can be given by stat subcutaneous injections [Grade D]

4. If a patient is experiencing abdominal colic, prokinetic drugs and stimulant laxatives should be discontinued [Grade D]

5. The frequency of vomiting should be reduced to one episode per 24 hours [Grade D]
## DRUG OPTIONS FOR THE MANAGEMENT OF BOWEL OBSTRUCTION

<table>
<thead>
<tr>
<th>Indications</th>
<th>Drug Name</th>
<th>Dose (subcutaneous via syringe driver over 24 hours)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relief of Colic</td>
<td>Hyoscine butylbromide [Level 3]</td>
<td>60mg-240mg</td>
<td>NB. Do not combine cyclizine and hyoscine butylbromide in a syringe driver as may get crystalisation</td>
</tr>
<tr>
<td></td>
<td>Or Glycopyrronium [Level 4]</td>
<td>600mcg-2.4mg</td>
<td></td>
</tr>
<tr>
<td>Reduce volume of gastrointestinal secretions</td>
<td>Octreotide [Level 3]</td>
<td>300mcg-600mcg</td>
<td>Consider compatibility with other drugs</td>
</tr>
<tr>
<td>Relief of pain</td>
<td>Diamorphine/ Morphine [Level 4]</td>
<td>Dependent on previous opioid dose</td>
<td></td>
</tr>
<tr>
<td>Reduce nausea and vomiting</td>
<td>Cyclizine [Level 4]</td>
<td>150mg</td>
<td>Do not use cyclizine in severe cardiac failure</td>
</tr>
<tr>
<td></td>
<td>Haloperidol [Level 4]</td>
<td>1.5mg-5mg</td>
<td>Contraindicated in complete obstruction. Dose may be increased to 120mg but need to watch closely for increasing abdominal colic</td>
</tr>
<tr>
<td></td>
<td>Levomepromazine [Level 4]</td>
<td>6.25mg-25mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Metaclopramide [Level 3]</td>
<td>30mg-60mg</td>
<td></td>
</tr>
<tr>
<td>Reduce tumour oedema</td>
<td>Dexamethasone [Level 2]</td>
<td>8mg</td>
<td>May be given as a stat subcutaneous injection. Discontinue if no improvement in symptom control after 5 days</td>
</tr>
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</tbody>
</table>
OUR CLINICAL QUESTIONS

In advanced cancer patients with malignant bowel obstruction:

1. What should be the medical management of
   • Colic
   • Pain
   • Nausea and vomiting
   • Constipation
   • Secretions
   • Tumour oedema?

2. What is the role for nasogastric tubes and venting gastrostomies?
LITERATURE SEARCH

Medline and EMBASE databases

Search terms:
• ‘cancer’ OR ‘malignancy’ OR ‘palliative’ OR ‘end of life
• AND ‘bowel obstruction’ OR ‘intestinal obstruction’
• AND colic OR pain OR nausea OR vomiting OR constipation OR secretions OR odema/oedema OR naso- gastric/NG/Ryles tube OR gastrostomy

• 2249 abstracts reviewed
• 184 articles identified
• X articles excluded due to: foreign language, not relevant to question, unable to obtain
• Y relevant articles
THE USE OF CORTICOSTEROIDS IN HOME PALLIATIVE CARE.
MERCADANTE ET AL (2001)\(^1\)

- Characteristics; Longitudinal study of 50 patients. Administered corticosteroids if symptom intensity that could be improved by corticosteroids were graded 2 or 3 on a scale of 0 (not at all) to 3 (severe).
- Analysis; Paired Wilcoxon signed-rank test, P-values were two sided.
- Outcome; Intensity of symptoms subsequently graded as 0 or 1 (absent or light).
- Limitations; Patients did not have to have a malignant diagnosis, Only 10/50 patients had symptomatic nausea and unclear how many of those had bowel obstruction.
A PROSPECTIVE SURVEY OF THE USE OF DEXAMETHASONE ON A PALLIATIVE CARE UNIT. HARDY ET AL (2001)²

• Characteristics; Prospective survey of 106 patients.
• Analysis; Observational only.
• Outcome; Symptom score improvement for anorexia, nausea, pain, low mood, vomiting, and weakness.
• Limitations; Only 7 patients had intestinal obstruction, results for these 7 patients were not pulled out of the data set on reporting, patients did not have to have a malignant diagnosis, study not controlled for other interventions
CORTICOSTEROIDS FOR THE RESOLUTION OF MALIGNANT BOWEL OBSTRUCTION IN ADVANCED GYNAECOLOGICAL AND GASTROINTESTINAL CANCER. COCHRANE DATABASE OF SYSTEMIC REVIEWS FEUER & BRADLEY (2009)^3

• Characteristics; Meta analysis (an update of a previous review on the same topic in 1999)
• Analysis; Nil
• Outcome; No new trials suitable for inclusion beyond these found used in the 1999 review, there is a trend for evidence that corticosteroids of dose range six to 16mg dexamethasone given intravenously may bring about the resolution of bowel obstruction (NNT 6), corticosteroids do not affect the length of survival
• Limitations; Trend is not statistically significant, based on 10 trials (3 unpublished RCTs and 7 published prospective and retrospective trials) accountable for 89 patients
THE USE OF STEROIDS IN THE MANAGEMENT OF INOPERABLE INTESTINAL OBSTRUCTION IN TERMINAL CANCER PATIENTS: DO THEY REMOVE OBSTRUCTION?

LAVAL ET AL (2000)

- Characteristics: Randomised, double-blind prospective study of 52 patients
- Analysis: Not specified
- Outcome: Symptoms of bowel obstruction were relieved in more of those patients taking steroids than in those taking the placebo
- Limitations: Outcome not statistically significant \( p=0.08 \) (except in the subgroup of patients without an NG \( p=0.047 \)), study not controlled for other interventions
IN SUMMARY....

• There is a trend for evidence that corticosteroids of dose range 6-16mg dexamethasone given intravenously may bring about the resolution of bowel obstruction.³

• The incidence of side effects is extremely low.³

• Corticosteroids do not seem to affect the length of survival.³

• Response should be assessed within four or five days with a view to discontinue if no benefit seen.⁴
REFERENCES

3. Feuer DJ, Broadley KE. Corticosteroids for the resolution of malignant bowel obstruction in advanced gynaecological and gastrointestinal cancer. *Cochrane database of systematic reviews* (Online) 2009
<table>
<thead>
<tr>
<th>Study</th>
<th>Characteristics</th>
<th>Analysis</th>
<th>Outcome</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercandante et al (2012)</td>
<td>Meta-analysis of 15 randomised controlled trial or observational reports, 281 patients in total treated with octreotide.</td>
<td>No specific analysis</td>
<td>Control of vomiting in 60% any type/level of obstruction, reduces NG aspirate volume, avoids placement of allows removal of NGT</td>
<td>Limited number of controlled studies, imprecise data regarding complete relief of symptoms</td>
</tr>
<tr>
<td>Mystakidou et al (2002)</td>
<td>Randomised double blind controlled clinical trial, 68 patients, octreotide vs conservative treatment</td>
<td></td>
<td>Administration of octreotide is effective in symptoms of inoperable bowel obstruction</td>
<td>Unable to access full results</td>
</tr>
<tr>
<td>Mercandante et al (2000)</td>
<td>Randomised controlled study comparing octreotide and hyoscine butylbromide. 18 patients with inoperable bowel obstruction</td>
<td>Chi-squared test and multi-variate analysis</td>
<td>Octreotide 0.3mg more effective than hyoscine butylbromide 60mg at relieving vomiting and nausea. (p=0.01)</td>
<td>Small number of patients recruited</td>
</tr>
<tr>
<td>Ripamonti et al (2000)</td>
<td>Prospective randomised trial of 17 patients. Comparison of effectiveness of octreotide, scopolamine butylbromide and hydration</td>
<td>Mann-Whitney U test and Wilcoxon signed-ranks test.</td>
<td>Significant reduction in secretions (p=0.016), Effect of octreotide more rapid than for SB NGT removal possible (p=0.287) Nausea intensity reduced (p=0.002)</td>
<td>Small number of patients recruited Study only lasted 3 days</td>
</tr>
</tbody>
</table>
All patients with malignant bowel obstruction should undergo anti-secretory treatment\(^1\)

Octreotide is effective in controlling vomiting in 60% of malignant bowel obstruction cases regardless of type/level of obstruction\(^2\)

Use of octreotide reduces NG aspirate volume, may avoid placement of NGT and allow removal of NGT\(^1,2\)

Octreotide should be considered where rapid reduction is necessary\(^1\)

Octreotide is more effective than hyoscine butylbromide in relieving gastrointestinal symptoms of advanced cancer and should be considered as first-choice anti-secretive drug despite the cost\(^3\)
REFERENCES


SUMMARY OF SEARCH RESULTS FOR VENTING GASTROSTOMY

46 articles identified
32 Excluded
  • Non-English language = 7
  • Duplicate = 1
  • Not PEG = 4
  • Different study population or complex intervention = 12
  • Case study/poor quality case series = 8
  • Review/Opinion 4

10 Included
  • 1 prospective cohort (5)
  • 9 Case series (1,9,10,15,16,27, 30,36)
<table>
<thead>
<tr>
<th>Study</th>
<th>Characteristics</th>
<th>Aims</th>
<th>Outcome</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannizzaro R et al 1995 Italy [Level 2+]</td>
<td>Prospective, randomised to 15 or 20Fr PEG catheters. N=22 (female) MBO Mixed primary. 1993-1994</td>
<td>Comparison of efficacy of different diameter catheters in obtaining symptomatic relief</td>
<td>1 abandoned 13% Minor complication 100% resolution of nausea and vomiting 100% tolerated soft,liquid diet 100% discharged home (17 died at home, 4 in hospital – not of bowel obstruction. No difference between tubes. 95.5% resolution of pain</td>
<td>Symptoms assessed before and after. Small numbers.</td>
</tr>
<tr>
<td>Study</td>
<td>Characteristics</td>
<td>Aims</td>
<td>Outcome</td>
<td>Comments</td>
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<tr>
<td>Kawata et al 2014 Japan [Level 3]</td>
<td>Retrospective case series n= 76 2002-2011 PEG (n=70) or PEG-J (n=6) for MBO mixed primary</td>
<td>Procedural success Elimination of NG tube Complications Survival</td>
<td>93% Procedural success 96% Elimination of NG tube 96% Symptom relief 21% Complications 63d Survival (3-444)</td>
<td>Retrospective, case series</td>
</tr>
<tr>
<td>Brooksbank et al 2002 Australia [Level 3]</td>
<td>Retrospective case series n= 51 1989 to 2007. Intractable vomiting from MBO confirmed by Xray. Referred for VG. 46 PEG. 1 radiologically, 4 cases inserted at laparoscopy.</td>
<td>Review of experience of service</td>
<td>2 abandoned Median survival 17d (1-190) 92% resolution of nausea and vomiting 92% restoration of soft diet/fluid 40% discharge home 20% minor complications</td>
<td>Retrospective, case series mixed population and mixed technique, no clear aims.</td>
</tr>
</tbody>
</table>
SUMMARY OF EVIDENCE FOR VENTING GASTROSTOMY

• Different techniques (PEG, PEJ, PTEG, also can be created at laparotomy)
• MBO from multiple primaries
• Acceptable minor complication rate
• Low major complications
• Good symptom resolution particularly nausea and vomiting
• Allow some oral diet
• Enables discharge home
# The Protocol:

## Stage 1
- NG tube
- Parenteral rehydration
- Anti-emetic
- Anti-cholinergic
- Steroids
- Analgesia

## Stage 2
- Stop or reduce steroids and anti-secretory
- Start Octreotide

## Stage 3
- Stop Octreotide
- Gastrostomy

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**Protocol for the Treatment of Malignant Inoperable Bowel Obstruction: A Prospective Case Study of 80 Cases at Grenoble University Hospital Center**

*Laval et al (2006)*

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**The Marie Curie Palliative Care Institute**

**Liverpool**
THE RESULTS

• Stage 1 (80 patients)
  – Relief of obstruction – 25
  – Acceptable symptom control – 25

• Stage 2 (25 patients)
  – Relief of obstruction – 4
  – Acceptable symptom control – 7

• Stage 3 (10 patients)
REDUCING GASTRIC SECRETIONS - A ROLE FOR H2 ANTAGONISTS OR PPIS IN MALIGNANT BOWEL OBSTRUCTION?

CLARK, LAM, CURROW (2009) ²

• Meta-analysis of 7 RCTs comparing Ranitidine and PPI (223 and 222 participants)

• Peri-operative setting

• On average, Ranitidine reduced volume of gastric aspirate by additional ml/kg compared to PPI

• Ranitidine 150-300mg PO or 50mg IV

• Basis for further studies in palliative care patients with MBO

• Level 2+
OTHER APPROACHES TO CONSIDER....
OLANZAPINE FOR THE RELIEF OF NAUSEA IN PATIENTS WITH ADVANCED CANCER AND INCOMPLETE BOWEL OBSTRUCTION

KANEISHI ET AL (2012) ³

Retrospective study of 20 patients

- Previous anti-emetic insufficient
- Excluded if potentially operable or NGT in situ

<table>
<thead>
<tr>
<th>Nausea</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>Mild</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Moderate</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Severe</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vomits per day</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

- 3 Adverse effects
AGGRESSIVE PHARMACOLOGICAL TREATMENT FOR REVERSING MALIGNANT BOWEL OBSTRUCTION

MERCADANTE ET AL (2004)^4

- 15 patients
- Daily IV infusion of:
  - Metoclopramide 60mg
  - Octreotide 300mcg
  - Dexamethasone 12mg
  with Amidotrizoato (Gastrografin) 50ml orally
- Synergistic effect
- Continued at home via elastomeric pump
- 14 patients had recovery of intestinal transit in 1-5 days
- Symptoms recurred on stopping and resolved on restarting in 3 patients
80 patients with peritoneal ca
>2 vomits per day or NGT
Previous IV steroids and PPIs - standardised
Lanreotide 30mg OD for 10 days or placebo
Primary end point: One vomit or less per day or no vomiting recurrence after NGT removal
Secondary end points included well-being
Patients receiving lanreotide more likely to respond but not statistically significant (18 of 43 vs 11 of 37)
Well-being significantly greater with Lanreotide
REFERENCES


PROPOSED NEW STANDARDS AND GUIDELINES

DR SARAH FRADSHAM
GUIDELINES FOR THE MEDICAL MANAGEMENT OF MALIGNANT BOWEL OBSTRUCTION

DR SARAH FRADSHAM
INTRODUCTION

Malignant bowel obstruction is a recognized complication of advanced pelvic or abdominal malignancy frequently occurring in the advanced stages of illness\(^1\). Suggested incidences of bowel obstruction in ovarian carcinoma range from 5.5 to 42\% and in colorectal cancer 4.4 to 24\%\(^2\).

The diagnosis of bowel obstruction is made via history, physical examination and radiological examination\(^3\) although in some cases radiological examination may not be appropriate.
These guidelines suggest a definition of malignant bowel obstruction as follows: (adapted from Anthony et al\textsuperscript{3})

- Clinical evidence of bowel obstruction (via history/physical/radiological examination)
- Intra abdominal primary cancer with incurable disease
- Non intra abdominal primary cancer with peritoneal disease.
Symptoms commonly associated with malignant bowel obstruction include$^3$:

- Abdominal pain
- Abdominal colic
- Nausea
- Vomiting
- Large volume vomits/ excessive GI secretions
SCOPE AND PURPOSE OF GUIDELINE

This guideline is aimed at practitioners in palliative care including doctors, nurses and pharmacists. The guidelines will also be of benefit to generalist providers of palliative care such as general practitioners, district nurses and those in secondary care.

The aims of the guideline are to:

• Improve the medical management of patients with malignant bowel obstruction.
• To help control the symptoms of bowel obstruction in these patients.
SCOPE AND PURPOSE OF GUIDELINE

These guidelines do not cover the surgical management of malignant bowel obstruction which may include a defunctioning stoma, bypass, resection or stenting. It is expected that the appropriateness of a surgical opinion would be considered in all patients.
ASSESSMENT

The pattern of presenting symptoms is usually determined by the level of obstruction. With high level obstruction (stomach, duodenum, pancreas, jejunum), vomiting develops early and can be frequent and large in volume [Level 4]. Distension may be minimal. In low level obstruction (large bowel), distension is more prominent and other symptoms develop progressively [Level 4]. Nausea, abdominal pain, colic and dry mouth can be present regardless of the level of obstruction [Level 4].

The diagnosis is established on clinical grounds and may be confirmed with imaging (abdominal X-ray or CT scan) [Level 4].
SYMPTOM CONTROL

Indications, doses and administration information relating to the medications cited in this section are presented in table 1.

Pain

Opioid analgesia should be titrated to control continuous abdominal pain. A syringe driver is likely to be the most reliable route of administering this, although transdermal Fentanyl could also be considered [Level 4].

Colic should initially be managed with the reduction or discontinuation of prokinetic drugs and stimulant laxatives. Followed by the addition of antispasmodic medication e.g. hyoscine butylbromide or glycopyrronium.
All patients who experience vomiting should be prescribed anti-secretory treatment.\textsuperscript{6} [Level 1]. Octreotide is effective at reducing the number of vomits, nasogastric tube volume and may avoid placement of a nasogastric tube, it should be considered as the first choice anti-secretory.\textsuperscript{6,7,8} [Level 1]. Hyoscine butylbromide\textsuperscript{6,7} [Level 1] and glycoprronium\textsuperscript{9} [Level 3] are also effective at reducing secretion volume and may be considered second line.
SYMPTOM CONTROL

Reduction of nausea and vomiting

Anti-emetics should be administered via a continuous subcutaneous infusion with additional doses administered subcutaneously for breakthrough symptoms.

One approach to anti-emetic prescribing is suggested below:

Partial bowel obstruction
Metoclopramide

Complete bowel obstruction OR partial bowel obstruction with colic
1st line - Cyclizine and/or Haloperidol
2nd line - Levomepromazine
Corticosteroids

There is a trend for evidence that corticosteroids may bring about the resolution of bowel obstruction.\textsuperscript{10} [Level 1+] Consider a trial of dexamethasone 8mg subcutaneously for five days.\textsuperscript{11} [Level 1-] Corticosteroids do not affect the length of survival.\textsuperscript{10} [Level 1+]
Venting gastrostomies or jejunostomies should be considered for patients with unresolved, symptomatic, malignant bowel obstruction with a prognosis of greater than 2 weeks [Level 4]. They can be very effective at relieving nausea and vomiting $^{13}$ [Level 2]. They are better tolerated than NG tubes $^{14}$[Level 3]. This procedure may enable patients to eat and drink and to be cared for at home $^{13,15}$ [Level 2]. It is a cost effective procedure with low morbidity and mortality $^{15}$ [Level 3].
SYMPTOM CONTROL

Use of a nasogastric tube
A wide bore nasogastric tube should be considered for patients with upper gastrointestinal obstruction and/or intractable large volume vomiting. [Level 4]
<table>
<thead>
<tr>
<th>Indication(s)</th>
<th>Drug Name</th>
<th>Dose</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relief of constant pain</td>
<td>Opioid via CSCI/24 hours or transdermal fentanyl patch [Level 4] [^5]</td>
<td>Dependent on previous dose. For choice of opioid please see CHAPTER x</td>
<td>Consider that absorption of oral formulation via gut may have been impaired, when converting from oral to CSCI</td>
</tr>
<tr>
<td>Relief of colic</td>
<td>Hyoscine butylbromide [Level 3] [^9]</td>
<td>60mg-240mg</td>
<td>Do not combine with cyclizine in CSCI as can cause crystallisation</td>
</tr>
<tr>
<td></td>
<td>Glycopyrronium [Level 3] [^9]</td>
<td>600mcg-2.4mg</td>
<td></td>
</tr>
<tr>
<td>Reduce volume of gastrointestinal secretions</td>
<td>Octreotide [Level 1] [^6,7,8]</td>
<td>300-600mcg/24hours via CSCI [Level 1] 600-1000mcg [Level 3]</td>
<td>Should be considered first line</td>
</tr>
<tr>
<td></td>
<td>Hyoscine butylbromide [Level 1] [^6,7]</td>
<td>60-240mg/24hours via CSCI</td>
<td>Do not combine with cyclizine in CSCI as can cause crystallisation</td>
</tr>
<tr>
<td></td>
<td>Glycopyrronium [Level 3] [^9]</td>
<td>600-2400mcg/24hours via CSCI</td>
<td></td>
</tr>
<tr>
<td>Reduce tumour oedema</td>
<td>Dexamethasone [Level 1-] [^11,12]</td>
<td>8mg sc</td>
<td>Given as single or divided into 2 stat doses.</td>
</tr>
<tr>
<td>Indication(s)</td>
<td>Drug Name</td>
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<tr>
<td>Reduce nausea and vomiting</td>
<td>Cyclizine</td>
<td>150mg/24hours via CSCI</td>
<td>Do not combine with hyoscine butyl bromide in CSCI as can cause crystallisation.</td>
</tr>
<tr>
<td>Reduce nausea and vomiting</td>
<td>Haloperidol</td>
<td>1.5-5mg/24hours via CSCI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Levomepromazine</td>
<td>6.25-25mg/24hours via CSCI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Metoclopramide</td>
<td>30-120mg/24hours via CSCI</td>
<td>Contraindicated in complete bowel obstruction. Dose may be increased to 120mg. Monitor for increased abdominal colic.</td>
</tr>
<tr>
<td></td>
<td>Ondansetron</td>
<td>8-32mg/24 hours via CSCI</td>
<td></td>
</tr>
</tbody>
</table>
1. A five day trial of corticosteroids should be administered unless contraindicated [Grade A].

2. Octreotide should be prescribed for all patients experiencing vomiting [Grade A].

3. Medication should be delivered by continuous subcutaneous infusion. Breakthrough medication can be given by stat subcutaneous injections [Grade D].

4. The multidisciplinary notes should record the presence and severity of abdominal colic [Grade D].

5. The multidisciplinary notes should record the presence and severity of nausea [Grade D].

6. The multidisciplinary notes should record the presence and severity of vomiting [Grade D].
DISCUSSION POINTS

Ranitidine
NG Tube
REFERENCES


11. Feuer DJ, Broadley KE. Corticosteroids for the resolution of malignant bowel obstruction in advanced gynaecological and gastrointestinal cancer. Cochrane database of systemic reviews (Online) (2009)


