Malignant bowel obstruction symptoms: subcutaneous bolus esomeprazole—retrospective case series

INTRODUCTION

Malignant bowel obstruction (MBO) is relatively common, with up to 15% of patients with malignancy suffering from an MBO during their cancer journey.[1 2] The management of an MBO in palliative care for patients who are not for surgical intervention may involve medication to decrease secretory load in the gastrointestinal (GI) tract, treating nausea, pain and acid-reflux symptoms. Medications used often include an anticholinergic such as hyoscine butylbromide or glycopyrronium, a somatostatin analogue such as octreotide, a steroid such as dexamethasone and until recently, the histamine-2 receptor antagonist ranitidine.[1]

There is conflicting evidence around the efficacy of many of these interventions. The use of octreotide has been questioned by a well-run randomised control trial,[3] although limitations in the study timeframe and maximum dose have been raised. The use of ranitidine has also a questionable evidence base, being drawn primarily from meta-analysis of the anaesthetic literature.[4] There is however biological plausibility for the usage of medicines that decrease gastric secretions, and both ranitidine and glycopyrronium have evidence for a substantial decrease.[4] There is evidence that proton pump inhibitors (PPIs) decrease gastric secretions, although the provision of PPIs in the palliative setting has been traditionally challenging due to the requirement for oral or intravenous administration. In palliative care, the subcutaneous (SC) route is preferred, as it minimises the need for recurrent cannulation or injection, provides near-equivalent bioavailability to intravenous agents and requires less complexity of care.

Esomeprazole, the s-enantiomer of omeprazole, has been well tolerated as an SC infusion when suspended in 50 mL of normal saline over 1 hour per case report data.[5] When administered intravenously, esomeprazole is mixed with diluent to a volume of 40 mg in 5 mL, which is able to be administered in divided injections to avoid discomfort.

The aim of this retrospective case series was to evaluate the clinical experience of SC bolus esomeprazole in an inpatient palliative care unit for the management of symptoms of MBO.

METHODS

Dispensing data for esomeprazole vials were obtained from the hospital pharmacy for a single inpatient palliative care unit in Australia from 2018 to 2020 and were matched to patient electronic records. A total of 11 patients across 13 admitted episodes were diagnosed as having an MBO either radiologically or clinically.

A retrospective review of the electronic patient record was undertaken for all 13 patient episodes. Using electronic medical records, the dose prescribed, duration of treatment and rationale for prescription were collected. Efficacy as documented by clinical staff was collected, as were side effects and duration of treatment.

Response categories (complete, partial, no, unknown) were devised for the study, focussing on documented symptom resolution and use of concomitant known treatments for MBO. Complete response (CR) was defined when symptoms (particularly, nausea, vomiting and gastric discomfort) were documented as controlled in the context of stable or no doses of anticholinergic or somatostatin analogue

Table 1 Response rates to subcutaneous bolus esomeprazole

Patient number	Malignancy	Episode	Days per episode	Average dose (mg)	Unknown response		No response		Partial response		Complete response	
					Days	%	Days	%	Days	%	Days	%
1 (female)	Ovarian	1	8	40	3	37.5	0	0	1	12.5	4	50
2 (female)	Ovarian	1	14	40	11	78.6	0	0	3	21	0	0
3 (female)	Adrenal	1	4	20	0	0	0	0	0	0	4	100
4 (female)	Colorectal	1	12	70	5	42	0	0	0	0	7	58
5 (female)	Ovarian	1	4	40	2	50	0	0	0	0	2	50
6 (female)	Ovarian	1	3	40	0	0	0	0	0	0	3	100
6 (female)	Ovarian	2	8	40	2	25	0	0	0	0	6	75
7 (male)	Gastric	1	16	40	8	50	0	0	2	12.5	6	37.5
8 (female)	Colorectal	1	6	40	0	0	0	0	0	0	6	100
8 (female)	Colorectal	2	1	40	0	0	0	0	1	100	0	0
9 (female)	Bladder	1	1	20	0	0	1	100	0	0	0	0
10 (female)	Bladder	1	2	40	0	0	0	0	0	0	2	100
11 (female)	Lung	1	1	40	0	0	0	0	1	100	0	0
Mean %		1	6.2	39.23		21		8		19		52

medications post commencement of esomeprazole. Partial response (PR) was defined if symptoms were controlled in the context of increasing doses of anticholinergic or somatostatin analogue medications. No response (NR) was defined as patients with no control of symptoms evident. Unknown response (UR) was recorded when there was inadequate documentation in the clinical record to make a determination.

RESULTS

A total of 11 patients, 1 male and 10 females, were prescribed SC bolus esomeprazole across 13 treatment episodes (two patients treated twice). Mean age at time of treatment was 74.4 years. The most common underlying diagnosis was ovarian cancer (n=5, 45%), followed by other GI malignancy (n=4, 36%).

The results of each treatment episode for each patient and response rates across the group are summarised in table 1. There was a response on approximately 70% of treatment days, with CR documented on a mean of 52% and PR on a mean of 19% treatment days. There was an UR or NR on a combined 29% of treatment days, with NR evident 8% of treatment days. The median dose of esomeprazole given was 40 mg daily, with the mean dose being 39.23 mg.

Concurrent treatments for symptoms of MBO included octreotide (n=10), hyoscine butylbromide (n=6) and dexamethasone (n=13). Nasogastric tube was used in three patients. The mean dose of octreotide was 570 µg per 24 hours and of hyoscine butylbromide 72 mg per 24 hours.

The only side effect of SC bolus esomeprazole noted was local site irritation in one patient. Two patients were discharged home and re-presented with recurrent symptoms of MBO. All patients died during their palliative care unit admissions, and were expected to die due to deterioration in the context of advanced malignant disease.

CONCLUSION

The evidence base for the treatment of MBO symptoms in palliative care is yet to be robustly developed.[1 3] Much of the evidence is extrapolated from the anaesthetic literature or from biological plausibility.[4] Randomised controlled trials have not found significant benefit.[3] Despite this, medications such as ranitidine have gained acceptance and are widely referenced in the literature.[2] The use of PPIs in this patient group is not widely reported.

There have been recent issues with access to ranitidine leading to off-label use of medications such as esomeprazole. Given that PPIs are known to decrease gastric acid load and are in common use,[2 4] the ability to use esomeprazole may provide flexibility for the management of MBO.

These results are limited by the retrospective nature of data collection, the lack of systematic validated documentation of symptoms of MBO and the multiple other interventions used alongside SC bolus esomeprazole. It would be ideal to conduct a randomised clinical trial; however, a prospective case series using validated predefined assessment measurements with standardised patient selection may be a practical next step in the assessment of SC PPIs in the treatment of MBO.

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