

# MyelomaAcademy™



## NURSING BEST PRACTICE GUIDE

# Gastrointestinal (GI) toxicities

**This document is one of the Myeloma Academy Nursing Best Practice Guides for the Management of Myeloma series. The purpose of this Guide is to enhance knowledge and inform nursing practice when caring for myeloma patients with gastrointestinal toxicity.**

After reading this, you should be able to:

- ★ Define gastrointestinal toxicity
- ★ Understand the causes, symptoms and consequences of gastrointestinal toxicity in myeloma patients
- ★ Be aware of the clinical testing and assessment tools for gastrointestinal toxicity
- ★ Understand the nurse's role in the assessment, intervention and management of gastrointestinal toxicity and in patient education about this side-effect

The information contained within this Guide should be used in conjunction with local policies, protocols and best practice guidelines in oncology.

## Background

Gastrointestinal toxicity is the term used to describe the adverse reaction of a drug on the digestive system which presents as one or more of the following<sup>[1]</sup>:

- ★ **Nausea** – a feeling of sickness and/or the urge to vomit

- ★ **Vomiting (emesis)** – the reflexive act of ejecting the contents of the stomach through the mouth
- ★ **Diarrhoea** – frequent and watery bowel movements
- ★ **Constipation** – irregular and infrequent or difficult evacuation of the bowels

### KEY FACTS

- ★ Gastrointestinal toxicity is a common side-effect of many anti-myeloma treatments and presents as nausea, vomiting, diarrhoea and/or constipation
- ★ The effects of gastrointestinal toxicity can greatly affect patients both physically and psychologically
- ★ Effective management of the symptoms of gastrointestinal toxicity prevents serious complications, improves quality of life and maximises patient outcomes

Gastrointestinal toxicity is a frequent complication in myeloma patients. It can be a symptom of hypercalcaemia but is more commonly recognised as a side-effect of anti-myeloma treatments (see Appendix I) affecting approximately 60% of patients receiving novel anti-myeloma treatments such as thalidomide, Velcade® and Revlimid®<sup>[2-4]</sup>. Up to 90% of patients receiving high-dose chemotherapy are affected<sup>[5-7]</sup>. It can also be a side-effect of opioid-based analgesia<sup>[8]</sup> and radiotherapy<sup>[9-11]</sup>.

Other factors can increase the risk of, or exacerbate, gastrointestinal toxicity including: lifestyle, diet, comorbidities such as diabetes or hypertension and a history of previous gastrointestinal disorders<sup>[12]</sup>. There may also be genetic variation in susceptibility, particularly following high-dose chemotherapy and stem cell transplantation<sup>[13]</sup>. Maladaptive coping with a cancer diagnosis and emotional distress have been reported to be associated with increased chemotherapy-induced nausea and vomiting risk<sup>[14]</sup>.

The clinical consequences of gastrointestinal toxicity are fairly predictable and generally consist of nausea, vomiting, diarrhoea and constipation. These are usually mild to moderate but in some cases they can be severe and can result in more serious clinical consequences including:

- ★ Weight loss
- ★ Dehydration
- ★ Electrolyte imbalance

#### GENERAL RECOMMENDATIONS:

- ★ Signs and symptoms of gastrointestinal toxicity should be recognised so they can be treated and managed in a timely and effective manner
- ★ Patients should be given a full clinical assessment to ascertain the cause and severity of their GI toxicity
- ★ Prophylactic treatment should be used where appropriate
- ★ Anti-myeloma treatment should be reviewed and dose modifications made where necessary

- ★ Anal fistulas
- ★ Abdominal pain
- ★ Systemic infection

Management of nausea, vomiting, diarrhoea and constipation is often inadequate because patients are reluctant to report them.

In the majority of cases, these gastrointestinal disturbances are easily treated and managed. However, if left untreated, they can become debilitating and distressing often resulting in a negative impact on patients' quality of life, non-compliance to treatment and an increase in emotional distress for both patients and their families.

It is important therefore that doctors and nurses recognise that the effects of gastrointestinal toxicity can have a significant clinical and psychological impact and that prompt intervention, and effective management is crucial to maintaining optimum outcomes for myeloma patients. This can be achieved through a multidisciplinary approach with nurses at the forefront in managing patients with gastrointestinal toxicity.

The following describes the medical approach to the treatment of gastrointestinal toxicity and provides best practice guidance for nursing interventions and nursing management of myeloma patients with gastrointestinal toxicity.

#### NURSING RECOMMENDATIONS:

- ★ Patients and their families should be informed about the symptoms of gastrointestinal toxicity and the importance of reporting their symptoms as soon as possible
- ★ Patients should be advised on taking preventative measures, making appropriate lifestyle adjustments and how best to control their symptoms
- ★ Patients should be referred to allied healthcare professionals, e.g. dietitian, where appropriate

# Medical Approach

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**GI toxicity can be effectively treated but relies on patients reporting the extent of their symptoms and on careful monitoring. The following section provides details of the general medical approach in the treatment and management of gastrointestinal toxicity in myeloma patients, which may involve referral to other members of the multidisciplinary team for more specialist assessment and intervention.**

## Assessment

The following assessment of patients is recommended:

### Medical history

- ★ Anorexia, weight loss/gain
- ★ Pattern of bowel movement
- ★ Pain, including retroperitoneal and epigastric
- ★ Onset, frequency and intensity of all symptoms
- ★ All treatment and other medication history
- ★ Comorbidities that can exacerbate symptoms
- ★ Physical assessments
- ★ Abdominal examination: Abdominal distension; Bowel obstruction
- ★ Oral examination for candidiasis
- ★ Herpes

### Other infections

- ★ Signs of dehydration, including dry mucous membranes, urinary output and colour of urine, poor skin turgor

### Other investigations

- ★ Full blood count and biochemistry
- ★ Stool cultures to rule out infection
- ★ X-rays if required to assess faecal impaction or obstruction

The severity of the nausea, vomiting, diarrhoea and constipation can be graded according to the National Cancer Institute (NCI) Common Terminology Criteria for Adverse Events (CTCAE) version 4 (see Appendix II).

## Treatment

Drug treatments may be appropriate depending on the severity of the gastrointestinal disturbances.

### Treatment for nausea and vomiting

The treatment and management of nausea and vomiting are broadly similar<sup>[15, 16]</sup>.

Acute onset nausea or vomiting should initially be treated with dopaminergic prokinetic anti-emetics such as oral domperidone, which may also be used prophylactically.

The anti-cholinergic cyclizine, although effective, is not recommended as it is associated with dry mouth and significant sedation.

If vomiting is not relieved then butyrophenone, haloperidol, or a 5HT-3 receptor antagonist e.g. granisetron or ondansetron, should be considered. However, prolonged use of 5HT-3 receptor antagonists may cause constipation and should only be given for a short period.

For patients who do not respond to any of the above, the broad spectrum phenothiazine, levomepromazine, may be used with caution as it is associated with sedation, hypotension and Parkinsonian-like side-effects.

In more severe cases of nausea and vomiting or before highly “emetogenic” chemotherapy treatment such as high-dose melphalan or anthracycline/cyclophosphamide combinations, the neurokinin-1 receptor antagonist, aprepitant (Emend), is recommended<sup>[17]</sup>.

Patients with severe vomiting may also need intravenous (IV) hydration, electrolyte replacement and, in extreme cases, parenteral nutrition. In such cases anti-emetic

treatments may need to be administered subcutaneously as opposed to orally.

Anticipatory nausea or vomiting is a common phenomenon, believed to be a learned response where patients, who previously vomited after treatment, worry that nausea and vomiting is inevitable when they re-start treatment. In such instances, an anxiolytic such as the benzodiazepine, lorazepam may be helpful.

### **Diarrhoea**

A recent review provides detailed guidelines on the management of diarrhoea during cancer chemotherapy<sup>[18]</sup>.

For mild diarrhoea persisting for more than 24 hours, anti-diarrhoeal treatments such as loperamide or Lomotil<sup>®</sup> should be given.

If a patient develops persistent diarrhoea while receiving Revlimid (lenalidomide), it is important to consider bile acid malabsorption (BAM). BAM may respond to reduction of dietary fat intake. If this is not successful then colesevelam may be effective. If in doubt a referral to a gastroenterologist may be advisable<sup>[19]</sup>.

Patients who have diarrhoea whilst on Velcade or Revlimid may require a temporary dose-reduction or for treatment to be temporarily stopped.

However, whilst diarrhoea is a common side-effect of anti-myeloma treatment, it is also a symptom of infection that must be assessed. In severe cases stool samples should be collected for culture and sensitivity (C&S) analysis.

For severe cases of diarrhoea, patients (>7 stools per day over baseline) may need aggressive fluid and electrolyte replacement and hospitalisation.

### **Constipation**

Treatment includes the use of stool softeners (Movicol<sup>®</sup>, Docusol<sup>®</sup>) and other laxatives (Fybogel<sup>®</sup>). For severe cases of constipation, rectal measures (suppositories, enemas, manual evacuation) should be considered.



# Nursing interventions and management

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**Nurses play an important role in the medical and non-medical management of the effects of gastrointestinal toxicity, especially since patients may be sensitive to some of the associated problems and may be reluctant to report them.**

Nurses can have a considerable impact on the care of myeloma patients with gastrointestinal toxicity. The following provides best practice recommendations for nursing interventions related to the assessment, treatment and monitoring of gastrointestinal toxicity and for nursing management that encompasses a more holistic approach to care for these patients.

## Interventions

- ★ Assess patients on a regular basis for gastrointestinal disturbances, particularly if they are on treatment
- ★ Be vigilant for any signs of dehydration if the patient has vomiting, diarrhoea or constipation and make sure fluids and electrolytes are replaced where necessary
- ★ Advise the multidisciplinary team of any gastrointestinal problems reported by the patient and review with them the treatments causing gastrointestinal disturbances and the possibility of modifying doses
- ★ Advise patients that certain foods and drinks that can cause gastrointestinal toxicity and advise that they should be discontinued
- ★ Advise patients of the need to comply with the treatment prescribed for gastrointestinal toxicity
- ★ Encourage patients to maintain a level of gentle exercise
- ★ Determine if the effects of gastrointestinal toxicity affect the patient's ability to perform activities of daily living or has a psychological impact, and coordinate referral to allied healthcare professionals where appropriate

## Management

### General

- ★ Inform and help patients understand the possible causes and consequences of gastrointestinal toxicity. Provide patients with written information to help with the understanding of gastrointestinal toxicity
- ★ Educate patients to recognise, detect and report symptoms of gastrointestinal toxicity
- ★ Build a relationship with patients that enables them to openly discuss their gastrointestinal problems
- ★ Ask patients if they are taking any additional medication or supplements

### Nausea and vomiting

- ★ Advise patients to eat small amounts of food throughout the day and to consume foods that minimise nausea e.g. avoid spicy and strong flavoured/tasting food
- ★ Advise patients to avoid high-fat/spicy/salty food and to make dietary modifications. Coordinate referral to dietician where necessary

- ★ Ensure patients understand the importance of maintaining fluid intake and the need to keep well-hydrated
- ★ Ensure patients comply with prophylactic treatment and take anti-emetics regularly as prescribed and not as required
- ★ Prophylaxis and laxative medication should be regularly assessed for effectiveness so that timely changes can be made if required
- ★ Engage with community nursing teams who can assist with the management of GI problems and provide continuous assessment and patient support in between hospital appointments
- ★ Discuss alternative/complementary treatment options such as relaxation methods, acupuncture, acupressure, distraction and guided imagery techniques. Coordinate referral to appropriate practitioners where necessary

### Diarrhoea

- ★ Advise patients to make dietary modifications such as eliminating dairy products, alcohol and medicines and

supplements that can cause diarrhoea (laxatives, stool softeners etc.)

- ★ Advise patients to eat frequent small meals throughout the day
- ★ Educate patients on the importance of oral rehydration with fluids containing sugar and salt to prevent hyponatremia and hypokalemia
- ★ Coordinate referral to dietician or gastroenterologist where appropriate

### Constipation

- ★ Educate patients about bowel function
- ★ Gain a clear understanding of the patient's individual bowel habits
- ★ Consider factors which may affect bowel movement e.g. does the patient require assistance to the toilet? Does the patient have sufficient privacy/comfort?
- ★ Advise patients and their families on preventative strategies e.g. increase dietary fibre and fluid intake
- ★ Discuss alternative/complementary treatment options e.g. massage, herbal remedies, with patients and coordinate referral where appropriate

## Summary

Gastrointestinal toxicity is a common side-effect of several anti-myeloma treatments affecting many myeloma patients at some point during the course of their myeloma. The associated symptoms of nausea, vomiting, diarrhoea and/or constipation can often be physically and psychologically debilitating, yet can be effectively treated provided patients report them as soon as possible to the medical team.

Nurses play a pivotal role in managing gastrointestinal toxicity in myeloma patients. Nursing interventions and management are key to reducing the impact and severity of these distressing symptoms and improving quality of life and outcomes for patients.

### Abbreviations

- ★ **ADL** Activities of daily living
- ★ **BAM** Bile acid malabsorption
- ★ **CTCAE** Common terminology criteria for adverse events

- ★ **IV** Intravenous
- ★ **NCI** National Cancer Institute
- ★ **TPN** Total Parenteral Nutrition
- ★ **5HT** Serotonin



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### ABOUT THE NURSING BEST PRACTICE GUIDES

The Nursing Best Practice Guides have been developed by Myeloma UK and an expert nursing advisory group, with input from relevant specialist healthcare professionals. They have been developed to enhance nurse knowledge, inform nursing practice and support nurses in the delivery of high quality treatment and care to myeloma patients and families.

Nursing Best Practice Guide series:

- ★ Complementary therapies
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- ★ Psychological support
- ★ Steroids
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### ABOUT THE MYELOMA ACADEMY

The Myeloma Academy provides healthcare professionals involved in the treatment and care of myeloma patients with access to comprehensive accredited learning resources and tools in an innovative online environment and through educational events.

It supports the education and continual professional development of myeloma healthcare professionals so they can provide optimum patient-centred treatment and care within the current UK health and policy environment.

For more information visit:

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### ABOUT MYELOMA UK

Myeloma UK is the only organisation in the UK dealing exclusively with myeloma.

Our mission is to provide information and support to people affected by myeloma and to improve standards of treatment and care through research, education, campaigning and raising awareness.

For more information about Myeloma UK and what we do, please visit **[www.myeloma.org.uk](http://www.myeloma.org.uk)** or contact us at **[myelomauk@myeloma.org.uk](mailto:myelomauk@myeloma.org.uk)** or **+44 (0)131 557 3332**.

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# Appendix I



## Anti-myeloma treatments with known gastrointestinal side-effects

| Treatment   | Risk of diarrhoea | Risk of constipation | Risk of nausea and vomiting |          |      |
|---|-------------------|----------------------|-----------------------------|----------|------|
|   |                   |                      | Low                         | Moderate | High |
| <b>Revlimid® (Lenalidomide)</b>                   | Yes               | Yes                  | -                           | -        | -    |
| <b>Thalidomide</b>                                | -                 | Yes                  | -                           | -        | -    |
| <b>Velcade® (Bortezomib)</b>                      | -                 | Yes                  | Yes                         | -        | -    |
| <b>Kyprolis® (Carfilzomib)</b>                    | Yes               | Yes                  | -                           | Yes      | -    |
| <b>Bisphosphonates</b>                            | Yes               | Yes                  | Yes                         | -        | -    |
| <b>Doxorubicin (Adriamycin)</b>                   | -                 | -                    | -                           | Yes      | Yes  |
| <b>Oncovin® (Vincristine)</b>                     | -                 | -                    | -                           | Yes      | -    |
| <b>Melphalan</b>                                  | Yes               | -                    | -                           | -        | Yes  |
| <b>Radiotherapy</b>                               | -                 | -                    | Yes                         | Yes      | Yes  |
| <b>Low-and intermediate-dose cyclophosphamide</b> | -                 | -                    | -                           | Yes      | -    |
| <b>High-dose cyclophosphamide</b>                 | -                 | -                    | -                           | -        | Yes  |



## Appendix II

### National Cancer Institute CTCAE: Gastrointestinal Toxicity Scale<sup>[1]</sup>

| Adverse Event       | Grade 1 (Mild)  | Grade 2 (Moderate)  | Grade 3 (Severe)   |
|---------------------|---|---|--|
| <b>Nausea</b>       | Loss of appetite without alteration in eating habits  | Oral intake decreased without significant weight loss, dehydration or malnutrition                      | Inadequate oral caloric or fluid intake; tube feeding, TPN, or hospitalization indicated   |
| <b>Vomiting</b>     | 1 - 2 episodes (separated by 5 minutes) in 24 hrs   | 3 - 5 episodes (separated by 5 minutes) in 24 hrs   | >=6 episodes (separated by 5 minutes) in 24 hrs; tube feeding, TPN or hospitalization indicated  |
| <b>Diarrhoea</b>    | Increase of <4 stools per day over baseline; mild increase in ostomy output compared to baseline                  | Increase of 4 - 6 stools per day over baseline; moderate increase in ostomy output compared to baseline | Increase of >=7 stools per day over baseline; incontinence; hospitalization indicated; severe increase in ostomy output compared to baseline; limiting self-care ADL |
| <b>Constipation</b> | Occasional or intermittent symptoms; occasional use of stool softeners, laxatives, dietary modification, or enema | Persistent symptoms with regular use of laxatives or enemas; limiting instrumental ADL                  | Obstipation with manual evacuation indicated; limiting self-care ADL   |



# Notes



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