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GYNAECOLOGICAL CANCER: DIETARY MANAGEMENT

The nutritional problems experienced by patients with gynaecological cancer are diverse and are often poorly managed for a variety of reasons. Here Sharon Becker focuses on Pelvic Radiation Disease (PRD - also known as radiation enteritis), as it is not uncommon for patients undergoing pelvic radiotherapy to develop gastrointestinal problems.

The term gynaecological oncology encompasses any cancers that start in a woman's reproductive system, i.e. cancers of the cervix, ovary, endometrium (womb), vulva and vagina.

One might assume that there would be no obvious association with these forms of cancer and developing nutritional problems (other than the usual effects of cancer treatment), but due to the close proximity of these organs to the gastrointestinal and urinary systems, there are some specific nutritional problems experienced.¹

Depending on the site and extent of the cancer, treatment options for gynaecological cancer include:

- Surgery
- Radiotherapy
- Chemotherapy
- Chemoradiation
- Biological therapy
- Hormone therapy

Adverse effects of these treatments are extremely common and can include:

- Nausea - Vomiting
- Anorexia - Malabsorption
- Constipation - Diarrhoea
- Anaemia - Fatigue
- Colitis - Intestinal obstruction
- Fistulae formation - Malnutrition
- Stricture formation - Pelvic Radiation Disease (PRD)
- Ileostomy/Colostomy procedures - Tenesmus
- Early menopause - Osteopenia

PELVIC RADIATION DISEASE (PRD)

Of particular note is PRD (also known as radiation enteritis), as up to 90% of patients undergoing pelvic radiotherapy develop gastrointestinal problems such as diarrhoea, abdominal pain, tenesmus and faecal incontinence.² This is because the radiotherapy induces long-term alterations in bowel function due to the progressive endothelial and stem cell dysfunction which leads to ischaemia and then fibrosis.³

Of the approximately 17,000 patients undergoing pelvic radiotherapy annually in the UK,⁴ 80% experience acute inflammatory changes resulting in symptoms, and about 50% then develop chronic symptoms that affect quality of life due to permanent intestinal changes.^{5,6} This is particularly the case if the patient develops diarrhoea and incontinence.⁷

It is estimated that the incidence of malnutrition in those about to commence pelvic radiotherapy is 11-33% and up to 83% lose weight during treatment.⁵ Furthermore, chemotherapy is used increasingly in conjunction with pelvic radiotherapy in curative treatment, resulting in a further increase in acute gastrointestinal symptoms.⁸ Comorbidities, such as diabetes, also appear to increase the risk of PRD,⁹ as does tobacco use, IBD, scleroderma, or a history of pelvic or abdominal surgery.¹⁰

Table 1: Treatment of common symptoms of PRD¹³

Condition	Symptoms	Diagnosis options	Treatment options
Bile Acid Malabsorption (BAM): a defect in the enteropathic circulation of bile acids.	Diarrhoea Steatorrhea	SeHCAT scan* C4 blood test Trial of bile acid sequestrant	Dietary fat reduction (to 20% of total calories) Antidiarrhoeal medication Bile acid sequestrant Consider long-term multivitamin and trace element supplementation
Exocrine Pancreatic Insufficiency (EPI): the inadequate production and secretion of pancreatic enzymes	Diarrhoea Steatorrhea Bloating/ abdominal cramps	Non-liquid stool sample for faecal elastase measurement (<200ug FE1 per 1.0g stool) replacement (i.e. Trial of pancreatic Creon)	Pancreatic replacement therapy; equivalent of 150,000iu Creon/day Optimal 30-50,000iu with each meal, 10-30,000iu with drinks and snacks (depending on size of snack) Consider long-term multivitamin and trace element supplementation Dietary advice may also be needed to optimise bowel function A proton pump inhibitor (PPI) is occasionally also needed NB: Falsely low readings may be present in patients with SIBO
Carbohydrate Malabsorption: lactose or other disaccharide intolerances, e.g. fructose	Diarrhoea Borygmi Bloating/ abdominal cramps	-Trial of exclusion of products containing specific carbohydrate for one week -Specific carbohydrate breath test	Long-term dietary exclusion of products containing the specific carbohydrate. This could require a low FODMAPs diet Dietitian assessment essential to ensure dietary adequacy, particularly with regard to lactose intolerance (i.e. calcium intake and risks to bone health)
Small Intestinal Bacterial Overgrowth (SIBO): the presence of excessive bacteria in the small intestine	Diarrhoea Borygmi Flatulence (oral or rectal) Mucous d/c Nausea + vomiting Abdominal pain Steatorrhea Bloating/ abdominal cramps	There is no gold standard for diagnosing this Glucose hydrogen/ methane breath testing +/- Duodenal (D2) aspirate via upper GI endoscopy RBC, folate and serum bile acid levels may be raised Vitamin B12 levels and faecal elastase may be low 10-15% of patients will get a false negative result	7-10 days antibiotic treatment with ciprofloxacin, doxycycline, clarithromycin, metronidazole and rifaximin -Symptoms can reoccur and require ongoing periodic treatment Risks of long-term therapy (e.g. development of Clostridium Difficile infection) must be considered

*A SeHCAT (taurine-conjugated bile acid analog) scan measures the severity of bile acid malabsorption (BAM). Results can be interpreted as follows.¹³

7-day SeHCAT retention	BAM status	
10-15%	Mild	When treating BAM, a mild BAM status might be successfully managed with dietary fat restriction and/or antidiarrhoeal medications. Moderate BAM will require a bile acid sequestrant. Severe BAM will likely require bile acid sequestrants as well as a long-term reduced fat diet (Wedlake et al 2009).
5-10%	Moderate	
<5%	Severe	

Due to the similarities in symptoms and pathologies, PRD is sometimes compared to Inflammatory Bowel Disease (IBD).¹¹ The number of PRD patients is also believed to be similar to that diagnosed yearly with IBD, but in contrast to the latter, most of these patients are not referred for gastrointestinal assessment.¹²

PRD patients are often termed 'cancer survivors', i.e. the cancer has been successfully treated, but they have to live with the long-term symptoms that their treatment has caused. They may also be troubled by the psychological effects of cancer, new GI disease, or a pre-existing underlying condition, which can all contribute to symptoms.³ As sufferers may be reluctant to report their symptoms due to their potentially embarrassing nature or an unwillingness to complain, health professionals must be proactive in identifying and treating PRD.⁷

Fortunately, recent evidence suggests that the symptoms experienced can be treated; especially if gastroenterological advice is combined with dietetic and nursing input to optimise investigations and management.³ Guidance has been developed using an algorithmic approach. The guidance identifies 22 gastrointestinal symptoms that may occur following pelvic radiotherapy.¹³ The guide is designed mainly to aid clinical nurse specialists looking after patients with PRD in conjunction with a gastroenterologist, but it may also help other professionals providing they are supported by an appropriate colleague.¹³

The publication of this guidance may result in increasing referrals of patients with PRD to the dietitian, as it identifies that specialist dietetic help is often required.¹² The common diagnoses identified for which dietetic treatment is required are listed in Table 1.

Please note that the conditions outlined in Table 1 must not be diagnosed or treated without the appropriate gastroenterological team support. In addition, a full dietary history would still be essential, and symptoms may be attributable to (or further exacerbated by) common dietary components such as:

- fibre (too much or too little)
- fluid (too much or too little)
- fizzy drinks
- caffeine
- alcohol

- sorbitol
- resistant starch

In particular, a reduction in dietary insoluble fibre is often of benefit to patients with PRD, as after pelvic radiotherapy, some are unable to tolerate the dietary recommendations for fibre (18g/day).

It is also emphasised that dietetic assessment and treatment must include the following:¹²

- a time-limited trial to any dietary change;
- routine checking for dietary adequacy for any patients with malabsorption;
- no prescribing of long-term dietary restriction(s) without an identified benefit;
- monitoring of nutritional status (i.e. weight, anthropometry, vitamin and trace element levels).

COULD DIETARY CHANGES HELP DURING RADIOTHERAPY?

Evidence is mixed regarding the appropriate diet to follow during pelvic radiotherapy, but interest is strong as it could potentially improve tolerance to the treatment and, therefore, also the outcome. A recent Cochrane review recommended that if diarrhoea was experienced during treatment, some form of dietary restriction (e.g. changes in fat, lactose and fibre) would be beneficial for a reduction in symptoms, but did not result in a weight gain.¹⁴ Elemental diets were assessed in the review, but it was concluded that problems with compliance reduced their usability.¹⁴ The form that the dietary restriction should take is unclear and, in some cases, contradictory. Further research is needed before specific recommendations can be made.

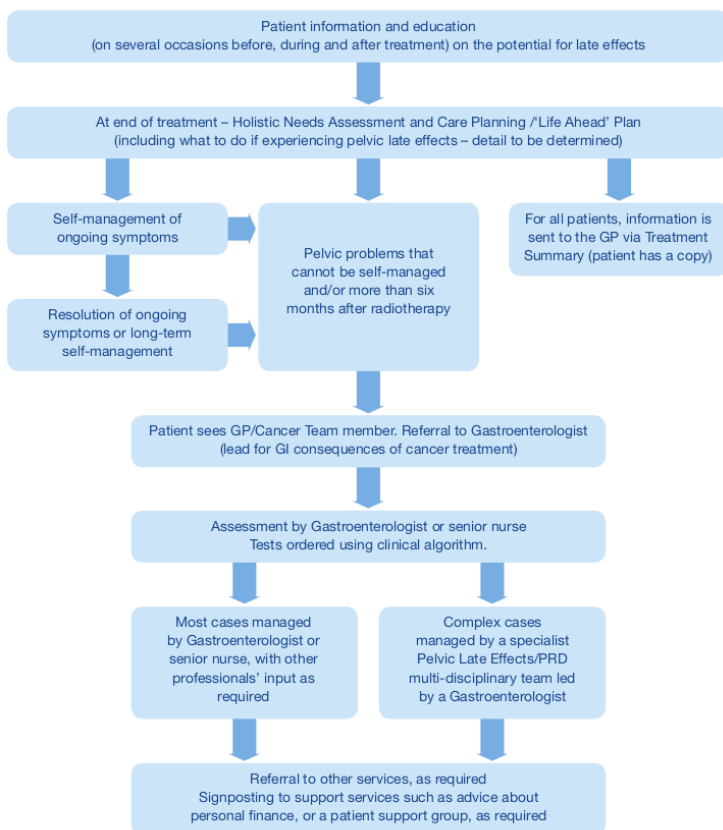
FUTURE SERVICE PROVISION

At present, service provision for patients with PRD is unevenly distributed throughout the UK. The British Society for Gastroenterology (BSG) and the National Cancer Survivorship Initiative (NCSI) suggest that the key features of successful local initiatives would be:

- gastroenterologists with interest in GI effects of cancer treatments;
- multi-professional pathway redesign with cancer care teams and primary care; and
- improved identification of patients with unmet needs.

Figure 1: Suggested approach to setting up a care pathway for PRD¹⁵

Outline generic pathway for managing consequences of pelvic cancer treatment (to be adapted for local circumstances)



Macmillan and The Royal Marsden Hospital both provide support and advice for departments seeking to improve their PRD care. A suggested approach for how to set up a care pathway has been created by the BSG and NCSI (Figure 1).¹⁵

FUTURE DEVELOPMENTS

Future improvements to the management of PRD appear to lie in a combination of improved radiotherapy techniques and new treatment options. Therapies that require more research include:¹⁶

- probiotics
- ACE inhibitors
- hyperbaric oxygen therapy
- argon plasma coagulation

In the meantime, the prevalence of PRD seems likely to increase due to a number of factors. Improved success of cancer treatment means that the number of cancer survivors and, hence, people with PRD, is ever increasing. In addition, late-onset symptoms are likely to become more common, as PRD can present 15 or even 20 years after treatment.

Practitioners should increase their vigilance for spotting this condition, particularly in patients who have recognised risk factors (e.g. underweight, diabetes), to ensure sufferers of this debilitating condition have access to comprehensive support throughout the UK.