

## **Author Q&A: Interventions to reduce acute and late adverse gastrointestinal effects of pelvic radiotherapy for primary pelvic cancers**

Cancer treatments are significantly more effective than they used to be, with more people alive than ever before who have had cancer. This has been achieved through a huge amount of research to define effective new therapies to treat cancer. Radiotherapy (RT) remains a cornerstone of cancer treatment, and four out of every 10 people treated for cancer will receive RT. Increasingly frequently, radiotherapy is combined with other treatments, such as chemotherapy, surgery, or both.

The aim of this Cochrane Review was to determine whether there are any preventive interventions to reduce gastrointestinal (GI) side effects among people undergoing RT to treat pelvic cancers.

### **What type of interventions did you look at?**

We included studies of any interventions provided preventively to reduce GI side effects of RT evaluated within a randomized controlled trial (RCT). We included a range of interventions, from modern RT techniques designed to improve RT tumour targeting and minimize RT exposure of normal tissue; to the timing of RT treatment, patient positions, and different ways of shielding normal tissue from the radiotherapy beams; medicines that might protect the lining of the gut through various mechanisms of action; and non-medical interventions, including probiotics and dietary measures which were as varied as changing the intake of green tea.

### **What did you find?**

We found 92 relevant studies of 44 different interventions. Most people in the studies had gynaecological (usually cervical or endometrial), urological (usually prostate or bladder), or gastrointestinal (usually rectal) cancers. The evidence on RT techniques confirmed that modern three-dimensional (3-D) conformal RT techniques are associated with less GI toxicity than older RT techniques. However, short-term GI toxicity (up to three months after RT) of a moderate or severe grade was still common in the group that received modern techniques, occurring in approximately 1 in 5 people in this arm of our analysis - as was long-term GI toxicity (from six months after RT), occurring in approximately 1 in 10. From the evidence, it is uncertain whether addressing other aspects of RT delivery, including giving RT in the evening compared with the morning, reducing the dose volume of RT, changing the bladder volume, and using different types of rectal spacers to protect normal tissue from effects of irradiation are helpful in reducing GI effects. Similarly, we found no strong evidence that any of the medicines tested protected the GI tract from radiation effects. There was some weak evidence that non-pharmacological interventions, including counseling, fibre, protein supplements, and probiotics, might have a beneficial effect on GI symptoms and that some of these interventions (counseling, high-fibre diet) might improve quality of life. However, in general, quality of life was measured in very few studies.

### **What further research would you like to see, and what would this tell us?**

The review findings show that the effect of RT on GI symptoms and quality of life has been a much-neglected area of research. Most evidence of any benefit on GI symptoms was uncertain. Therefore, more research is needed to establish the usefulness of various interventions that showed potential to be beneficial. Even when treatments do not seem to work according to the current evidence, this may not be correct as the trials which have assessed this were often too small or methodologically flawed to be certain that the result they show is correct. Decision-making around new (and existing) cancer treatments largely focuses on increasing life expectancy, but now that so many effective treatments exist to treat so many cancers, much more research must go into improving quality of life for people with cancer, during and after treatment.

### **What does this mean for people with cancer?**

The emphasis on surviving cancer has overshadowed consideration for the quality of life of cancer survivors. Research into the side effects caused by cancer treatments has not been pursued with any vigour and there is little known about how to prevent one of the most common problems: difficult problems with the bowels. As a result, some people may have to stop treatment for cancer because of side effects, or receive reduced intensity treatment, and this may reduce the success of their treatment. Other people who receive ongoing RT to keep their cancer in check may experience a significant decrease in their quality of life due to bowel symptoms. In addition, people who are cured of their cancer may experience long-lasting GI effects that substantially affect their quality of life.

### **What would your message be to people receiving pelvic RT?**

Don't delay seeking help. Ensure that your clinician is aware of troubling bowel symptoms that you are experiencing so that you can receive the appropriate support. Whilst GI side effects are common during and after receiving RT, and can persist well after the cancer is cured, there are various approaches to managing them.

### **What would be your message to clinicians and policymakers?**

Inadequately or untreated GI toxicity is very costly not only to health care, but also at a personal level for the people affected and their families. With other treatment toxicities, such as nausea and vomiting, or bone marrow suppression, problems so severe that they prevented the delivery of chemotherapy, huge investment in research has significantly reduced these problems. However, other GI side effects such as severe diarrhoea, incontinence, and debilitating abdominal pain as a result of radiotherapy have largely been ignored and this needs to change, through greater awareness of the problem, and more investment in research into how to prevent these effects.