

Colorectal Cancer

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Colorectal cancer (CRC) is a common pathology that physicians face worldwide. The incidence is slowly decreasing in developed countries but this is not the case in developing countries. Despite its decreasing incidence, colon cancer remains the second highest cause of cancer mortality in the developed countries (1). In Jamaica, CRC is the third most common cancer in both males and females (2). Colorectal cancer is preventable and there are well established screening protocols for persons who are at average and high risks (3). Most cases of CRC are adenocarcinomas. Other cancer subtypes are less common and include lymphomas, carcinoid tumours and leiomyosarcomas. Most CRCs are believed to develop through the normal mucosa → mucosa at risk → adenoma → adenocarcinoma sequence (4). A number of genetic events has been associated with the colorectal carcinogenesis.

The APC gene (referred to as the “gatekeeper”) is mutated in 85% of CRC. Mutations of DNA repair genes hMSH1, hMSH2, hMLH1, hPMS2 and hMSH6 (these genes maintain nucleic acid integrity during replication) are found in 10–15% of sporadic CRC. The k-ras gene is the most frequently activated oncogene in CRC (5).

In this issue of the Journal, Tani *et al* explored the advances in gene therapy (6). The future treatment of colorectal cancers and indeed many other cancers may be gene therapy. Over the last two decades, gene therapy has moved from preclinical to clinical studies for many diseases, ranging from single gene disorders such as cystic fibrosis to Duchenne muscular dystrophy, to more complex diseases such as cancer and cardiovascular disorders. Gene therapy for severe combined immunodeficiency (SCID) is the most significant success story to date.

Currently, surgical resection is the only curative treatment for CRC. This is achieved *via* open laparotomy, laparoscopy or infrequently *via* endoscopy. Adjuvant chemotherapy for colon cancer typically includes 5-fluorouracil (5-FU) and leucovorin; oxaliplatin may give additional benefits. Cancers lower in the rectum (0–5cm) often require preoperative chemoradiation (7). The use of computed

tomography or endoscopic ultrasound staging to assess the depth of tumour invasion or the presence of nodes will assist in decision-making for preoperative chemoradiation. In this issue of the Journal, Li Yang *et al* investigated the effect of the combination of Interferon- α and Gefitinib on human colon cancer cell lines and concluded that IFN- α promotes the antiproliferative effect of gefitinib on human colon cancer cell lines and that the mechanism may be related to upregulation expression of EGFR by IFN- α (8).

Recently, the focus of chemotherapy for solid tumours has been towards more targeted therapy, which, it is hoped, would be more effective and carry less side effects. This requires the recognition and the ability to test for specific tumour cell receptors. In the future, we may not be screening for cancers in the traditional way (*eg* colon cancer by searching for precancerous colonic polyps), instead, we may simply be searching for genetic mutations and instead of chemotherapy, we may be administering gene therapy.

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