COLORECTAL CANCER

BACKGROUNDER

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1. WHAT IS COLORECTAL CANCER?

Colorectal cancer is a cancer in the colon or rectum (parts of the large intestine). Like other cancers, colorectal cancer starts in a small area but can spread to other parts of the body to form metastatic tumours.[1] Most colorectal cancers start as a polyp – a protrusion of the colon or rectum that starts in the inner lining and grows toward the centre. Only certain types of polyps (called adenomas) can become cancer. Taking out a polyp early, when it is small, may prevent it from becoming cancerous.[2]

2. HOW COMMON IS COLORECTAL CANCER?

Colorectal cancer is the third most common cancer in men (approximately 746,000 cases), and the second in women (approximately 614,000 cases) worldwide, accounting for almost 1.4 million new cases diagnosed each year. [3]

- It is expected that, by 2035, this number will increase to more than 2.4 million cases each year (1.36 million for men; and 1.08 for women).[4]
- Colorectal cancer represents almost 10% of the global cancer incidence[3]
- Worldwide, approximately 694,000 deaths are attributable to colorectal cancer each year.[3]
- Colorectal cancer is rare in younger people. It usually occurs in men and women aged over the age of 60.[1]
- There is wide geographical variation in incidence across the world; over half (almost 55%) of colorectal cancer cases occur in more developed regions [2]
- Colorectal cancer survival is highly dependent upon stage of disease at diagnosis and survival rates decrease the later the cancer is diagnosed.[5]
- For patients diagnosed early, with localised CRC, the 5-year survival rate can be as high as 93% but for those with metastatic CRC prognosis is very poor with a 5-year survival of less than 10%. These current rates show effective screening and early diagnosis are critical to reduce the burden of disease but there is also an urgent need to improve treatment options for patients with advanced disease.[5]

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3. WHAT ARE THE RISK FACTORS FOR COLORECTAL CANCER?

The main risk factor for colorectal cancer is age; the risk increases as you get older.[6] More than 8 out of 10 colorectal cancers are diagnosed in people aged 60 or over.[6] Other factors that can increase risk of colorectal cancer include family history, the presence of polyps in the large intestine, inflammatory bowel disease (primarily ulcerative colitis), obesity, smoking, physical inactivity and red meat and alcohol consumption.[7]

4. WHAT ARE THE SIGNS AND SYMPTOMS OF COLORECTAL CANCER?

The symptoms of colorectal cancer may take several years to develop and depends on the localisation of the tumour.[8] Typical symptoms include a change in frequency of bowel movements, constipation, blood in stools, and abdominal pain or discomfort along with weight loss, cramps or bloating, and anaemia, fatigue and vomiting.[7]

5. HOW IS COLORECTAL CANCER DIAGNOSED?[9]

A number of diagnostics tests may be used to detect colorectal cancer. Initially, a physical examination and blood test will be conducted.

Physical examination

As part of the physical examination, a doctor will carefully feel the abdomen for masses or enlarged organs. The doctor may also perform a digital rectal examination (DRE), by inserting a lubricated, gloved finger into the rectum to feel for any abnormal areas in the rectum.

Blood tests

Certain blood tests can be used to determine the likelihood of colorectal cancer:

- *Faecal occult blood test* (FOBT): to test for blood in the stool
- *Complete blood count* (CBC): to check for anaemia (too few red blood cells). Some people with colorectal cancer become anaemic because of prolonged bleeding from the tumour.

If symptoms or the results of the physical examination and/or blood tests suggest that colorectal cancer might be present, more tests will be recommended which could include:

- *Liver enzymes*: to check liver function, because colorectal cancer can spread to the liver.

- *Tumour markers:* to check markers in bloodstream that may show how well treatment is working or to provide an early sign cancer has returned

Barium enema

A barium enema involves taking X-rays of the colon and the rectum, after the patient is given an enema with white, chalky liquid containing barium. The barium outlines the large intestines on the X-rays. Tumours and other abnormalities appear as dark shadows on the X-rays.

Colonoscopy

A doctor inserts a long, flexible viewing tube into the rectum for the purpose of inspecting the inside of the entire colon. If colon polyps are found, they are usually removed through the colonoscope and sent to the pathologist. The pathologist examines the polyps under the microscope to check for cancer. Colonoscopy is the best procedure to use when cancer of the colon is suspected.

Virtual colonoscopy

This colon-screening technology utilises computer graphics and CT (computed tomography) images to enable the doctor to view the entire colon to look for polyps or masses. The procedure offers the patient a greater degree of comfort in comparison to a traditional colonoscopy.

Biopsies

Usually, if a suspected colorectal cancer is found by any diagnostic test, it is biopsied during a colonoscopy. A biopsy (sample of tumour tissue) is taken for testing and is examined under a microscope by a doctor who can determine if this tissue is cancerous (malignant) or benign (not malignant). If the cells are cancerous, they may be studied further to detect the rate of growth and extent of the cancer.

Imaging tests

Imaging tests are used to help establish whether a suspicious area might be cancerous, to learn how far cancer may have spread, and to determine if a treatment has been effective. Imaging tests include: X-rays, ultrasound, CAT scans (computerised axial tomography – produces detailed cross-sectional images of the body), MRI scans (magnetic resonance imaging – provides detailed images of soft tissues in the body using radio waves), PET scans (positron emission tomography – uses small amounts of radioactive sugar in the body to detect cancer cells), and angiography (an X-ray procedure for looking at blood vessels).

6. WHAT ARE THE AVAILABLE TREATMENT OPTIONS?

In general, the main options for colorectal cancer treatment are surgery, chemotherapy, radiation therapy (for rectal cancer), and targeted therapy.[10] To determine the most appropriate treatment, cancers are 'staged' to establish how far the cancer has advanced in the body. Using the universally recognised TNM classification of malignant tumours, each case of colorectal cancer is given a score according to:

- The extent of how much surrounding tissue has been invaded (T)
- The extent to which the lymph nodes have been involved (N)
- The presence or absence of spread to other organs within the body (M)[11]

Depending on these scores, the cancer is graded stage 0, I, II, III or IV. Even in the absence of symptoms, people over the age of 50 and those known to be at high risk of colorectal cancer should undertake regular screening because treatment is much more effective the earlier cancer is found.

Surgery[10]

Surgery may be used to remove cancer from the colon or rectum; or it may be undertaken to remove cancer that has spread to other organs in the body. The type of surgery chosen will depend on the stage of the cancer.

Chemotherapy[10]

Chemotherapy drugs can be given in a variety of ways, including intravenously by injection, intravenously with a pump, or even in pill form taken by mouth. Chemotherapy can be given in different situations:

- *Palliative chemotherapy* is used when colorectal cancer is advanced and has already spread to different parts of the body. In this situation, surgery cannot eliminate the cancer, so chemotherapy may be used to shrink tumours, alleviate symptoms, and prolong life.
- *Adjuvant chemotherapy* is given after the cancer is surgically removed. The surgery may not eliminate all the cancer cells, so the adjuvant chemotherapy treatment is used to kill any that may have been missed.
- *Neoadjuvant chemotherapy* is chemotherapy given before surgery in order to shrink the tumour so that the surgeon can completely remove it with fewer complications.

Radiation therapy[10]

Radiation therapy uses high-energy rays (such as X-rays) or particles to destroy cancer cells. Radiotherapy can be used in the neoadjuvant setting (given as a first step to shrink a tumour before the main treatment, which is usually surgery) and adjuvant setting (given in addition to the primary, main or initial treatment) for some

stages of rectal cancer; it is not routinely used in colon cancer due to the sensitivity of the bowels to radiation. Chemotherapy can make radiation therapy more effective again in rectal cancer.[9]

Targeted therapy[10]

Targeted therapy is a newer type of cancer treatment that can more precisely identify and attack cancer cells. Rather than having a broad effect, many of these therapies focus on specific proteins that are involved in signalling processes. By blocking the signals that prompt cancer cells to grow and divide uncontrollably, targeted cancer therapies can help to stop the growth and division of cancer cells.

By focusing on molecular and cellular changes that are specific to colorectal cancer, these 'targeted' therapies have shown evidence to be more effective than current treatments and less harmful to normal cells, thereby reducing side effects.

Targeted therapy is a growing part of many cancer treatment regimens.

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