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Colorectal Cancer - Treatment Options [1]

This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 09/2014

ON THIS PAGE: You will learn about the different ways doctors use to treat people with this type of cancer. To see other pages, use the menu on the side of your screen.

This section outlines treatments that are the standard of care, meaning the best proven treatments available, for colorectal cancer. When making treatment plan decisions, patients are also encouraged to consider clinical trials as an option. A clinical trial is a research study to test a new approach to treatment to evaluate whether it is safe, effective, and possibly better than the standard treatment. Clinical trials may test such approaches as a new drug, a new combination of standard treatments, or new doses of current therapies. Your doctor can help you review all treatment options. For more information, visit the Clinical Trials [3] and Latest Research [4] sections.

Treatment overview

In cancer care, different types of doctors often work together to create a patient?s overall treatment plan that usually includes or combines different types of treatments. This is called a multidisciplinary team [5]. For colorectal cancer, this generally includes a gastroenterologist, who is a doctor who specializes in the function and disorders of the gastrointestinal tract, surgeon, medical oncologist, and radiation oncologist.

Descriptions of the most common treatment options for colorectal cancer are listed below, followed by a brief outline of treatment options listed by stage. Treatment options and recommendations depend on several factors, including the type and stage of cancer, possible side effects, and the patient?s preferences and overall health. Your care plan may also include treatment for symptoms and side effects, an important part of cancer care. Take time to learn about all of your treatment options and be sure to ask questions about things that are unclear. Also, talk about the goals of each treatment with your doctor and what you can expect while receiving the treatment. Learn more about making treatment decisions [6].

Surgery

Surgery is the removal of the tumor and surrounding tissue during an operation. This is the most common treatment for colorectal cancer and is often called surgical resection. Part of the healthy colon or rectum and nearby lymph nodes will also be removed. While both general surgeons and

specialists may perform colorectal surgery, many people talk with specialists who have additional training and experience in colorectal surgery. A surgical oncologist is a doctor who specializes in treating cancer using surgery, and a colorectal surgeon has additional training beyond education in general surgery.

Some patients may be able to have laparoscopic colorectal cancer surgery. With this technique, several viewing scopes are passed into the abdomen while a patient is under anesthesia. The incisions are smaller and the recovery time is often shorter than with standard colon surgery. Laparoscopic surgery is as effective as conventional colon surgery in removing the cancer. Surgeons who perform laparoscopic surgery have been specially trained in that technique.

Less often, a person with rectal cancer may need to have a colostomy. This is a surgical opening, or stoma, through which the colon is connected to the abdominal surface to provide a pathway for waste to exit the body; such waste is collected in a pouch worn by the patient. Sometimes, the colostomy is only temporary to allow the rectum to heal, but it may be permanent. With modern surgical techniques and the use of radiation therapy and chemotherapy before surgery when needed, most people who receive treatment for rectal cancer do not need a permanent colostomy. Learn more about colostomies [7].

Some patients may be able to have surgery on the liver or lungs to remove tumors that have spread to those organs. Another way is to use energy in the form of radiofrequency waves to heat the tumors, called radiofrequency ablation or RFA. Not all liver or lung tumors can be treated with this approach. Sometimes, RFA can be done through the skin or during surgery. While this can spare the liver and lung tissue that might be removed in a regular surgery, there is also a chance that parts of tumor will be left behind.

In general, the side effects of surgery include pain and tenderness in the area of the operation. The operation may also cause constipation or diarrhea, which usually goes away after a while. People who have a colostomy may have irritation around the stoma. If you need to have a colostomy, the doctor, nurse, or an enterostomal therapist, who is a specialist in colostomy management, can teach you how to clean the area and prevent infection.

Many people need to retrain their bowel after surgery, which may take some time and assistance. You should talk with your doctor if you do not regain good control of bowel function.

Learn more about cancer surgery [8].

Radiation therapy

Radiation therapy is the use of high-energy x-rays to destroy cancer cells. It is commonly used for treating rectal cancer because this tumor tends to recur near where it originally started. A doctor who specializes in giving radiation therapy to treat cancer is called a radiation oncologist. A radiation therapy regimen (schedule), usually consists of a specific number of treatments given over a set period of time.

External-beam radiation therapy uses a machine to deliver x-rays to where the cancer is located. Radiation treatment is usually given five days a week for several weeks and may be given in the doctor's office or at the hospital.

For some people, specialized radiation therapy techniques, such as intraoperative radiation therapy or brachytherapy may help get rid of small areas of tumor that could not be removed with surgery. Intraoperative radiation therapy uses a high, single dose of radiation therapy given during surgery. Brachytherapy is the use of radioactive "seeds" placed inside the body. In one type of brachytherapy with a product called SIR-Spheres, tiny amounts of a radioactive substance called yttrium-90 are injected into the liver to treat colorectal cancer that has spread to the liver when surgery is not an option. While limited information is available about how effective this approach is, some studies suggest that it may help slow the growth of cancer cells.

Stereotactic radiation therapy is a type of external-bean radiation therapy that may be used if a tumor has spread to the liver or lungs. This type of radiation therapy delivers a large, precise radiation dose to a small area. This technique can help spare the liver and lung tissue that might be removed during surgery. However, not all cancers that have spread to the liver or lungs can be treated in this way.

For rectal cancer, radiation therapy may be used before surgery, called neoadjuvant therapy, to shrink the tumor so that it is easier to remove or after surgery to destroy any remaining cancer cells, as both have worked to treat this disease. Chemotherapy is often given at the same time as radiation therapy, called chemoradiation therapy, to increase the effectiveness of the radiation therapy. Chemoradiation therapy is often used in rectal cancer before surgery to avoid colostomy or reduce the chance that the cancer will recur. One recent study found that radiation therapy plus chemotherapy before surgery worked better than the same radiation therapy and chemotherapy given after surgery. The main benefits included a lower rate of the tumor coming back in the area where it started, fewer patients that needed permanent colostomies, and fewer problems with scarring of the bowel in the area where the radiation therapy was given.

Side effects from radiation therapy may include fatigue, mild skin reactions, upset stomach, and loose bowel movements. It may also cause bloody stools from bleeding through the rectum or blockage of the bowel. Most side effects go away soon after treatment is finished.

Sexual problems, as well as infertility (the inability to have a child) in both men and women, may occur after radiation therapy to the pelvis. Before treatment begins, talk with your doctor about the possible sexual and fertility-related side effects of your treatment and the available options for preserving fertility [9].

Learn more about radiation therapy [10].

Chemotherapy

Chemotherapy is the use of drugs to destroy cancer cells, usually by stopping the cancer cells? ability to grow and divide. Chemotherapy is usually given by a medical oncologist, a doctor who specializes in treating cancer with medication.

Systemic chemotherapy is delivered through the bloodstream to reach cancer cells throughout the body. Common ways to give chemotherapy include an intravenous (IV) tube placed into a vein using a needle or in a pill or capsule that is swallowed (orally). A chemotherapy regimen, or schedule, usually consists of a specific number of cycles given over a set period of time. A patient may receive one drug at a time or combinations of different drugs at the same time.

Chemotherapy may be given after surgery to eliminate any remaining cancer cells. For some people with rectal cancer, the doctor will give chemotherapy and radiation therapy before surgery to reduce the size of a rectal tumor and reduce the chance of the cancer returning.

Currently, several drugs are approved by the U.S. Food and Drug Administration (FDA) to treat colorectal cancer in the United States. Your doctor may recommend one or more of them at different times during treatment. These drugs include fluorouracil (5-FU, Adrucil), capecitabine (Xeloda), irinotecan (Camptosar), oxaliplatin (Eloxatin), bevacizumab (Avastin), cetuximab (Erbitux), panitumumab (Vectibix), and ziv-aflibercept (Zaltrap). These last four are described under ?Targeted therapy? below. Some common treatments are:

- 5-FU
- 5-FU with leucovorin (Wellcovorin), a vitamin that improves the effectiveness of 5-FU
- Capecitabine, an oral form of 5-FU
- 5-FU with leucovorin and oxaliplatin (called FOLFOX)
- 5-FU with leucovorin and irinotecan (called FOLFIRI)
- Irinotecan alone
- Capecitabine with either irinotecan or oxaliplatin
- Any of the above with either cetuximab, bevacizumab, or panitumumab
- FOLFIRI with ziv-aflibercept

Chemotherapy may cause vomiting, nausea, diarrhea, neuropathy, or mouth sores. However, medications to prevent these side effects are available [11]. Because of the way drugs are given, these side effects are less severe than they have been in the past for most patients. In addition, patients may be unusually tired, and there is an increased risk of infection. Neuropathy, tingling or numbness in feet or hands, may also occur with some drugs. Hair loss is an uncommon side effect with the drugs used to treat colorectal cancer. If side effects are particularly difficult, the dose of drug may be lowered or a treatment session may be postponed. If you are receiving chemotherapy, you should talk with your health care team to understand when to call your doctor about side effects. Read more about managing side effects [12]. The side effects from chemotherapy usually go away once treatment is finished.

Learn more about chemotherapy [13] and preparing for treatment [14]. The medications used to treat cancer are continually being evaluated. Talking with your doctor is often the best way to learn about the medications prescribed for you, their purpose, and their potential side effects or interactions with other medications. Learn more about your prescriptions by using searchable drug databases [15].

Targeted therapy

Targeted therapy is a treatment that targets the cancer?s specific genes, proteins, or the tissue

environment that contributes to cancer growth and survival. This type of treatment blocks the growth and spread of cancer cells while limiting damage to healthy cells.

Recent studies show that not all tumors have the same targets. To find the most effective treatment, your doctor may run tests to identify the genes, proteins, and other factors in your tumor. As a result, doctors can better match each patient with the most effective treatment whenever possible. In addition, many research studies are taking place now to find out more about specific molecular targets and new treatments directed at them. These drugs are becoming more important in the treatment of colorectal cancer. Learn more about targeted treatments [16].

Anti-angiogenesis therapy [17]. Anti-angiogenesis therapy is a type of targeted therapy. It is focused on stopping angiogenesis, which is the process of making new blood vessels. Because a tumor needs the nutrients delivered by blood vessels to grow and spread, the goal of anti-angiogenesis therapies is to ?starve? the tumor. Bevacizumab is a type of anti-angiogenesis therapy called a monoclonal antibody. When given with chemotherapy, bevacizumab increases the length of time patients with advanced colorectal cancer live. In 2004, the FDA approved bevacizumab along with chemotherapy as the first treatment, or first-line treatment, for advanced colorectal cancer. Recent studies have shown it is also effective as second-line therapy along with chemotherapy. Ziv-aflibercept is another type of angiogenesis therapy that is used along with FOLFIRI chemotherapy as a second-line treatment for metastatic colorectal cancer. In addition, the drug regorafenib (Stivarga) was approved in 2012 for patients with metastatic colorectal cancer who have already received certain types of chemotherapy and other targeted therapies.

Epidermal growth factor receptor (EGFR) inhibitors. An EGFR inhibitor is a type of targeted therapy. Researchers have found that drugs that block EGFR may be effective for stopping or slowing the growth of colorectal cancer. Cetuximab and panitumumab are monoclonal antibodies that block EGFR. Cetuximab is an antibody made from mouse cells that still has some of the mouse structure. Panitumumab is made entirely from human proteins and is less likely to cause an allergic reaction than cetuximab.

Recent studies show that cetuximab and panitumumab do not work as well for tumors that have specific mutations, or changes, to a gene called *RAS*. ASCO released a provisional clinical opinion [18] recommending that all patients with metastatic colorectal cancer who may receive anti-EFGR therapy, such as cetuximab and panitumumab, have their tumors tested for *RAS* gene mutations. If a patient?s tumor has a mutated form of the *RAS* gene, ASCO recommends against the use of anti-EFGR antibody therapy. Furthermore, the FDA now recommends that both cetuximab and panitumumab only be given to patients with tumors with non-mutated, sometimes called wild type, *RAS* genes.

Talk with your doctor about possible side effects for a specific medication and how they can be managed. The side effects of targeted treatments can include a rash to the face and upper body, which can be prevented or reduced with various treatments. Find out more about skin reactions to targeted therapies [19].

Getting care for symptoms and side effects

Cancer and its treatment often cause side effects. In addition to treatment to slow, stop, or

eliminate the cancer, an important part of cancer care is relieving a person?s symptoms and side effects. This approach is called palliative or supportive care, and it includes supporting the patient with his or her physical, emotional, and social needs.

Palliative care can help a person at any stage of illness. People often receive treatment for the cancer and treatment to ease side effects at the same time. In fact, patients who receive both often have less severe symptoms, better quality of life, and report they are more satisfied with treatment.

Palliative treatments vary widely and often include medication, nutritional changes, relaxation techniques, and other therapies. You may also receive palliative treatments similar to those meant to eliminate the cancer, such as chemotherapy, surgery, and radiation therapy. Talk with your doctor about the goals of each treatment in the treatment plan.

Before treatment begins, talk with your health care team about the possible side effects of your specific treatment plan and supportive care options. And during and after treatment, be sure to tell your doctor or another health care team member if you are experiencing a problem so it is addressed as quickly as possible. Learn more about palliative care [20].

Treatment options by stage

In general, stages 0, I, II, and III are curable with surgery. However, many patients with stage III colorectal cancer, and some with stage II, receive chemotherapy after surgery to increase the chance of eliminating the disease. Stage IV is not often curable, but it is treatable and the growth of the cancer and the symptoms of the disease can be managed. Clinical trials are also a treatment option for each stage.

Stage 0 colorectal cancer

The usual treatment is a polypectomy, or removal of a polyp, during a colonoscopy. There is no additional surgery unless the polyp cannot be fully removed.

Stage I colorectal cancer

Surgical removal of the tumor and lymph nodes is usually the only treatment needed.

Stage II colorectal cancer

Patients should talk with their doctor about whether more treatment is needed after surgery, as some patients receive adjuvant chemotherapy. This is treatment after surgery with chemotherapy aimed at trying to destroy any remaining cancer cells. However, cure rates for surgery alone are quite good, and there are few benefits of additional treatment for people with this stage of colon cancer. Learn more about adjuvant therapy for stage II colorectal cancer [21]. A clinical trial is also an option after surgery.

For patients with rectal cancer, radiation therapy is usually given in combination with chemotherapy, either before or after surgery.

Stage III colorectal cancer

Treatment usually involves surgical removal of the tumor followed by adjuvant chemotherapy. A clinical trial is also an option. For patients with rectal cancer, radiation therapy may be used along with chemotherapy before or after surgery.

Metastatic (stage IV) colorectal cancer

If cancer has spread to another location in the body, it is called metastatic cancer. Colorectal cancer can spread to distant organs, such as the liver, lungs, the tissue called the peritoneum that lines the abdomen, or a woman?s ovaries.

Patients with this diagnosis are encouraged to talk with doctors who are experienced in treating this stage of cancer, because there can be different opinions about the best treatment plan. Learn more about seeking a second opinion [22] before starting treatment, so you are comfortable with the treatment plan chosen. This discussion may include clinical trials [3].

Your health care team may recommend a treatment plan that includes a combination of surgery, radiation therapy, and chemotherapy, which can be used to slow the spread of the disease and often temporarily shrink a cancerous tumor. Supportive care will also be important to help relieve symptoms and side effects.

At this stage, surgery to remove the portion of the colon where the cancer started usually cannot cure the cancer, but it can help relieve blockage of the colon or other problems related to the cancer. Surgery may also be used to remove parts of other organs that contain cancer, called resection, and can cure some people if a limited amount of cancer spreads to a single organ, such as the liver or lung.

In colon cancer, if the cancer has spread only to the liver and if surgery is possible?either before or after chemotherapy?the patient has a chance of complete cure. Even when curing the cancer is not possible, surgery may add months or even years to a person?s life. Determining who can benefit from surgery for cancer that has spread to the liver is often a complicated process that involves doctors of multiple specialties working together to plan the best option.

For most patients, a diagnosis of metastatic cancer is very stressful and, at times, difficult to bear. Patients and their families are encouraged to talk about the way they are feeling with doctors, nurses, social workers, or other members of the health care team. It may also be helpful to talk with other patients, including through a support group.

Remission and the chance of recurrence

A remission is when cancer cannot be detected in the body and there are no symptoms. This may also be called ?no evidence of disease? or NED.

A remission can be temporary or permanent. This uncertainty leads to many survivors feeling worried or anxious that the cancer will come back. While many remissions are permanent, it?s important to talk with your doctor about the possibility of the cancer returning. Understanding the risk of recurrence and the treatment options may help you feel more prepared if the cancer does

return. Learn more about coping with the fear of recurrence [23].

If the cancer does return after the original treatment, it is called recurrent cancer. It may come back in the same place (called a local recurrence), nearby (regional recurrence), or in another place (distant recurrence).

When this occurs, a cycle of testing will begin again to learn as much as possible about the recurrence, including whether the cancer?s stage has changed. After testing is done, you and your doctor will talk about your treatment options. Often the treatment plan will include the therapies described above, such as surgery, chemotherapy, and radiation therapy, but they may be used in a different combination or given at a different pace. Your doctor may also suggest clinical trials that are studying new ways to treat this type of recurrent cancer. Generally, the treatment options for recurrent cancer are the same as those for metastatic cancer (see below) and include surgery, radiation therapy, and chemotherapy.

People with recurrent cancer often experience emotions such as disbelief or fear. Patients are encouraged to talk with their health care team about these feelings and ask about support services to help them cope. Learn more about dealing with cancer recurrence [24].

If treatment fails

Recovery from cancer is not always possible. If treatment is not successful, the disease may be called advanced or terminal cancer.

This diagnosis is stressful, and this is difficult to discuss for many people. However, it is important to have open and honest conversations with your doctor and health care team to express your feelings, preferences, and concerns. The health care team is there to help, and many team members have special skills, experience, and knowledge to support patients and their families. Making sure a person is physically comfortable and free from pain is extremely important.

Patients who have advanced cancer and who are expected to live less than six months may want to consider a type of palliative care called hospice care. Hospice care is designed to provide the best possible quality of life for people who are near the end of life. You and your family are encouraged to think about where you would be most comfortable: at home, in the hospital, or in a hospice environment. Nursing care and special equipment can make staying at home a workable alternative for many families. Learn more about advanced cancer care planning [25].

After the death of a loved one, many people need support to help them cope with the loss. Learn more about grief and loss [26].

The next section helps explain clinical trials, which are research studies. Use the menu on the side of your screen to select About Clinical Trials, or you can select another section, to continue reading this guide.

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