Childhood Cancer - Treatment Options

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Treatment Options

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

In general, cancer in children is uncommon, so it can be hard for doctors to determine the best treatment unless they know what has been most effective in other children. That?s why more than 60% of children younger than 15 years old with cancer are treated as part of a clinical trial. Clinical trials [2] are research studies that compare standard treatments (the best proven treatments available) with newer approaches to treatments that may be more effective or test new treatments. Clinical trials may test such approaches as a new drug, a new combination of standard treatments, or new doses of current therapies. Studying new treatments involves careful monitoring using scientific methods, and all participants are followed closely to track their health and progress.

To take advantage of these newer treatments, all children with cancer should be treated at a specialized cancer center. Doctors at these centers have extensive experience in treating children with cancer and have access to the latest research. In many cases, a team of doctors works with a child and the family to provide care; this is called a multidisciplinary team [3].

Pediatric cancer centers often have extra support services for children and their families, such as child life specialists, nutritionists, physical and occupational therapists, social workers, counselors. Special activities and programs to help your child and family cope may also be available. As explained in the Overview [4], however, there are times when a teenager with cancer may need to be treated at an adult cancer center.

Descriptions of the most common treatment options for childhood cancer are listed below. The treatment of childhood cancer depends on several factors, including the type and stage of cancer, possible side effects, the family?s preferences, and the child?s overall health. Your child?s 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 child?s 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 to expect while receiving the treatment. The following are general descriptions of treatments that may be used as part of a child?s treatment plan. Learn more about treatments used for specific types of cancer [5] and making treatment decisions [6].

Surgery

Surgery is the removal of the tumor, either cancerous or noncancerous, and surrounding tissue during an operation. Many children with a tumor will need surgery at some point during their treatment. A surgical oncologist is a doctor who specializes in treating a tumor using surgery. The goal of surgery is to remove the entire tumor and the margin (tissue around the tumor), leaving a negative margin (no cancer in the healthy tissue). For most childhood tumors, there is microscopic tumor left after surgery, and then doctors will recommend chemotherapy, radiation therapy, or other treatments.

Side effects of surgery depend on the location and type of the tumor and whether it has metastasized. Learn more about cancer surgery [7].

Chemotherapy

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

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, muscle, spinal fluid or under the skin using a needle, or in a pill or capsule that is swallowed (orally). A chemotherapy regimen (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.

The side effects of chemotherapy depend on the individual and the dose used, but they can include fatigue, increased risk of infection, increased risk of bleeding, nausea and vomiting, hair loss, loss of appetite, and diarrhea. These side effects usually go away once treatment is finished.

Learn more about chemotherapy [8] and preparing for treatment [9]. The medications used to treat cancer are continually being evaluated. Talking with your child?s doctor is often the best way to learn about the medications prescribed for your child, their purpose, and their potential side effects or interactions with other medications. Learn more about your child?s prescriptions by using searchable drug databases [10].

Radiation therapy

Radiation therapy is the use of high-energy x-rays or other particles such as photons to destroy cancer cells. A doctor who specializes in giving radiation therapy to treat cancer is called a radiation oncologist. The most common type of radiation treatment is called external-beam radiation therapy, which is radiation given from a machine outside the body. When radiation treatment is given using implants, it is called internal radiation therapy or brachytherapy. A radiation therapy regimen usually consists of a specific number of treatments given over a set period of time.

Side effects from radiation therapy may include fatigue, mild skin reactions, nausea, and loose bowel movements, depending on the part of the body that is receiving radiation. Most side effects go away soon after treatment is finished. Learn more about radiation therapy [11].

Immunotherapy

Immunotherapy, also called biologic therapy, is designed to boost the body?s natural defenses to fight the cancer. It uses materials made either by the body or in a laboratory to improve, target, or restore immune system function. Examples of immunotherapy include cancer vaccines, monoclonal antibodies, and interferons. Learn more about immunotherapy [12].

Stem cell transplantation/bone marrow transplantation

A stem cell transplant is a medical procedure in which bone marrow that contains cancer is replaced by highly specialized cells, called hematopoietic stem cells, that develop into healthy bone marrow. Hematopoietic stem cells are blood-forming cells found both in the bloodstream and in the bone marrow. Today, this procedure is more commonly called a stem cell transplant, rather than bone marrow transplant, because it is the stem cells in the blood that are typically being transplanted, not the actual bone marrow tissue.

Before recommending transplantation, doctors will talk with the patient and family about the risks of this treatment and consider several other factors, such as the type of cancer, results of any previous treatment, and patient?s age and general health.

There are two types of stem cell transplantation depending on the source of the replacement blood stem cells: allogeneic (ALLO) and autologous (AUTO). ALLO uses donated stem cells, while AUTO uses the patient?s own stem cells. In both types, the goal is to destroy all of the cancer cells in the marrow, blood, and other parts of the body using high doses of chemotherapy and/or radiation therapy and then allow replacement blood stem cells to create healthy bone marrow.

Learn more about stem cell and bone marrow transplantation [13].

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. Your child may also receive palliative treatments similar to those meant to eliminate the cancer, such as chemotherapy, surgery, and radiation therapy. Talk with your child?s doctor about the goals of each treatment in the treatment plan.

Before treatment begins, talk with your child?s health care team about the possible side effects of the specific treatment plan and supportive care options. And during and after treatment, be sure to tell your child?s doctor or another health care team member if your child is experiencing a problem so it is addressed as quickly as possible. Learn more about palliative care [14].

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 makes many patients and families worried or anxious that the cancer will come back. While many remissions are permanent, it?s important to talk with your child?s 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 [15].

If the cancer does return after the original treatment, it is called recurrent disease. It may come back in the same place (called a local recurrence), nearby (regional recurrence), or in another place in the body (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, your child?s doctor will talk with you about 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 on a different

schedule. Your child?s doctor may also suggest clinical trials that are studying new ways to treat this type of recurrent cancer.

When cancer recurs, patients and their families often experience emotions such as disbelief or fear. Families 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 [16].

If treatment fails

Although treatment is successful for most children with cancer, sometimes it is not. If a child?s cancer cannot be cured or controlled, this is called advanced, terminal, or refractory cancer. This diagnosis is stressful, and it may be difficult to discuss. However, it is important to have open and honest conversations with your child?s doctor and health care team to express your family?s feelings, preferences, and concerns. The health care team is there to help, and many treatment centers have a palliative care service, with nurses and doctors who have special skills, experience, and knowledge to support patients and their families during this time.

Parents or guardians are encouraged to think about where the child would be most comfortable: at home, in a home-like setting elsewhere, in the hospital, or in a hospice environment. Hospice care is a type of palliative care for people who are expected to live less than six months. It is designed to provide the best possible quality of life for people who are near the end of life. Nursing care and special equipment can make staying at home a workable alternative for many families. Some children may be happier if they can attend school part-time or keep up other activities and social connections for as long as possible. The child?s health care team can help parents or guardians decide on an appropriate level of activity. Making sure a child is physically comfortable and free from pain is an extremely important part of end-of-life care. Learn more about caring for a terminally ill child [17] and advanced cancer care planning [18].

The death of a child is an enormous tragedy, and families may need support to help them cope with the loss. Pediatric cancer centers often have professional staff and support groups to help with the process of grieving. Learn more on grieving the loss of a child [19].

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.

Links:
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[2] http://www.cancer.net/node/18695
[3] http://www.cancer.net/node/25356
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