

Common Types of Cancer in Children: An Overview

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Introduction

Cancer is a term used to describe a group of diseases in which cells in the body begin to grow uncontrollably. Although cancer is most often associated with adults, it can also occur in children, though it is relatively rare. Pediatric cancers are diverse, with distinct differences from those found in adults, both in terms of their biology and how they respond to treatment. Understanding the common types of cancer in children is essential for early detection, timely treatment, and improved survival rates. One of the most common types of cancer in children is leukemia, a cancer that affects the blood and bone marrow. Leukemia occurs when abnormal white blood cells are produced, crowding out the healthy cells needed for normal bodily functions. There are several forms of leukemia, with Acute Lymphoblastic Leukemia (ALL) being the most prevalent among children. ALL involves an overproduction of immature white blood cells called lymphoblasts, which interfere with the production of other blood cells. While ALL can be aggressive, it has a relatively high survival rate in children, thanks to advances in chemotherapy and bone marrow transplants. Acute Myeloid Leukemia (AML) is another type of leukemia, though it is less common in children than ALL.

Description

Brain and Central Nervous System (CNS) tumors are also among the most common cancers seen in children. These tumors arise from the cells of the brain or spinal cord and can cause a wide range of symptoms depending on the tumour's location. Medulloblastoma, a type of brain tumor, is most often found in children and typically affects the cerebellum, the part of the brain that controls movement and coordination. Medulloblastomas are fast-growing and can spread to other parts of the brain and spinal cord, but treatment, which may include surgery, radiation, and chemotherapy, can be highly effective, especially if detected early. Another common brain tumor in children is glioma, which originates in the glial cells that support neurons. Gliomas can vary in terms of aggressiveness, with low-grade gliomas being relatively slow-growing and high-grade gliomas being more aggressive and harder to treat. In some cases, surgery to remove the tumor can result in significant improvement, though there is always a risk of complications due to the sensitive location of the tumor [1,2].

Neuroblastoma is another cancer that is particularly common in younger children. It originates in the nerve tissue, usually in the adrenal glands, which are located above the kidneys, but can also develop in the abdomen, neck, chest, or pelvis. Neuroblastoma is most commonly diagnosed in children under the age of five and can range from a localized tumor that can be surgically removed to more advanced cases that have spread to other parts of the body. The prognosis of neuroblastoma depends largely on the stage at

which it is diagnosed, as well as the child's age and the specific biological characteristics of the tumor. In some cases, neuroblastoma can spontaneously regress, particularly in infants, while in others; it can be aggressive and difficult to treat [3].

Wilms tumor is a type of kidney cancer that is most commonly diagnosed in children under the age of five. It originates in the kidneys, which are responsible for filtering waste from the blood and producing urine. Wilms tumors are often discovered during routine medical exams or when a child exhibits symptoms such as a swollen abdomen or blood in the urine. Fortunately, Wilms tumor is one of the most treatable types of cancer in children, with a high survival rate, especially when detected early. Treatment often involves a combination of surgery, chemotherapy, and sometimes radiation therapy. In most cases, the affected kidney can be removed without the need for further complications, and many children go on to live long, healthy lives following treatment.

Rhabdomyosarcoma is a type of cancer that develops in the soft tissues, such as muscles, tendons, and connective tissues. It is the most common form of soft tissue sarcoma in children and can develop anywhere in the body, though it is most commonly found in the head and neck, urinary system, and arms or legs. Rhabdomyosarcoma can occur at any age but is most commonly diagnosed in children under the age of 10. Treatment typically involves surgery to remove the tumor, along with chemotherapy and sometimes radiation therapy. The prognosis for rhabdomyosarcoma depends on several factors, including the size and location of the tumor, the age of the child, and whether the cancer has spread to other parts of the body. Retinoblastoma is a cancer that affects the eyes and is most commonly diagnosed in children under the age of five. It originates in the retina, the light-sensitive tissue at the back of the eye. Retinoblastoma can be inherited or arise spontaneously, and it is often detected when parents notice unusual symptoms, such as a white or pink reflection in the child's pupil or difficulty seeing. Treatment typically involves a combination of chemotherapy, radiation therapy, and sometimes surgery to remove the affected eye. In cases where the tumor is caught early, the chances of preserving vision in the affected eye are good, though advanced cases may require the removal of the eye [4].

Hodgkin lymphoma, a cancer of the lymphatic system, is one of the less common cancers in children but still occurs with some frequency. The lymphatic system is part of the body's immune system, and when cancer develops in the lymph nodes, spleen, or bone marrow, it can interfere with the body's ability to fight infections. Hodgkin lymphoma typically presents with swollen lymph nodes, fever, weight loss, and night sweats. It is most commonly diagnosed in adolescents and young adults, but it can also affect younger children. Treatment for Hodgkin lymphoma usually involves chemotherapy, radiation therapy, or a combination of both, and the prognosis for children with this cancer is generally very good, with survival rates exceeding 90% in many cases [5].

Bone cancer is another category of cancers that can affect children, with osteosarcoma and Ewing sarcoma being the two most common types. Osteosarcoma typically develops in the long bones, such as the arms or legs, and is most commonly diagnosed in adolescents. This type of cancer is characterized by the formation of abnormal bone cells that grow rapidly and can spread to other parts of the body. Ewing sarcoma, which is more likely to develop in the bones or soft tissues, can affect children of all ages but is most common in children and adolescents. Both osteosarcoma and Ewing sarcoma are treated with a combination of surgery, chemotherapy, and sometimes radiation therapy. Despite the challenges associated with these cancers, survival rates for children with osteosarcoma and Ewing sarcoma have improved significantly with modern treatments.

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Conclusion

In conclusion, cancer in children is rare but has a significant impact on those affected. Leukemia, brain and CNS tumors, neuroblastoma, Wilms tumor, rhabdomyosarcoma, retinoblastoma, lymphoma, and bone cancers are among the most common types seen in pediatric populations. While childhood cancer presents many challenges, survival rates have improved dramatically in recent decades due to advances in medical treatments, early detection, and research. Understanding the different types of cancer that can affect children is crucial for parents, caregivers, and healthcare professionals in recognizing symptoms early and providing appropriate treatment. With ongoing research and support, the prognosis for children diagnosed with cancer continues to improve, offering hope for many families around the world.

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