

## Pediatric oncology: Current and emerging treatment strategies for childhood cancers.

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### Introduction

Pediatric oncology is a branch of medicine that specializes in the diagnosis, treatment, and management of cancer in children. Childhood cancers are relatively rare, accounting for less than 1% of all cancer cases, but they are the leading cause of death from disease in children aged 1-14 years. In this essay, we will explore the unique features of pediatric oncology, including the types of cancers that occur in children, treatment options, and psychosocial issues [1].

Childhood cancers can occur in any part of the body, but certain types are more common than others. The most common types of childhood cancers include:

**Leukemia:** This is a cancer of the blood cells that begins in the bone marrow.

**Brain and spinal cord tumors:** These tumors can occur in any part of the brain or spinal cord and can be either benign or malignant.

**Neuroblastoma:** This is a cancer of the nervous system that most often occurs in young children.

**Wilms tumor:** This is a cancer of the kidney that typically occurs in children aged 3-4 years.

**Lymphoma:** This is a cancer of the lymphatic system, which includes the lymph nodes, spleen, and thymus gland.

**Rhabdomyosarcoma:** This is a cancer of the soft tissues, such as the muscles [2].

The treatment of childhood cancer depends on several factors, including the type and stage of cancer, the age of the child, and the child's overall health status. The most common treatments for childhood cancer include:

**Surgery:** Surgery is often used to remove tumors or other cancerous tissue. In some cases, surgery may be the only treatment needed.

**Chemotherapy:** Chemotherapy uses drugs to kill cancer cells throughout the body. Chemotherapy can be given orally, through an injection, or directly into a vein [3].

**Radiation therapy:** Radiation therapy uses high-energy radiation to kill cancer cells. Radiation can be given externally, using a machine outside the body, or internally, using radioactive materials placed directly into the tumor.

**Immunotherapy:** Immunotherapy is a type of cancer treatment that uses the body's immune system to fight cancer. Immunotherapy can include the use of immune checkpoint inhibitors, CAR T-cell therapy, and other therapies.

**Stem cell transplant:** A stem cell transplant involves replacing the patient's damaged bone marrow with healthy stem cells from a donor [4].

The diagnosis and treatment of childhood cancer can have a significant impact on the child and their family. Children with cancer may experience physical symptoms, such as pain, fatigue, and nausea, as well as emotional symptoms, such as anxiety, depression, and fear. In addition, the treatment of childhood cancer often requires significant time and resources, including frequent hospital visits and lengthy hospital stays. This can disrupt the child's education, social life, and family relationships, and can place a significant burden on the family.

Psychosocial support is an important aspect of pediatric oncology, and can include a variety of services, such as:

**Counseling:** Counseling can provide emotional support to the child and their family, and can help them cope with the challenges of cancer treatment.

**Support groups:** Support groups can provide a sense of community and shared experiences for children with cancer and their families.

**Education and advocacy:** Education and advocacy can help families understand their rights and options, and can help them navigate the complex healthcare system.

**Palliative care:** Palliative care is a type of care that focuses on relieving the symptoms of cancer and improving quality of life, rather than curing the disease.

The administration designs of COG and SIOPE have changed fundamentally to achieve hierarchical missions in spite of the fact that they share a few significant likenesses that have been significant for their nonstop tasks. In both COG and SIOPE, administrative associations are discrete from their clinical preliminary framework: COG is the pediatric malignant growth clinical preliminary arm for the NCI Cancer Therapy Evaluation Program, and SIOPE goes about as a planning society working in organization with bunch illness explicit accomplice associations. Both COG and SIOPE utilize a decentralized framework for clinical preliminary execution,

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where patients are treated at neighborhood foundations utilizing brought together cycles and conventions. Machine gear-piece's clinical preliminaries are planned inside the actual association, and COG works straightforwardly with organizations to execute preliminaries. The administrative structure for directing clinical preliminaries in Europe is profoundly complicated, which has made it hard for not-revenue driven associations, for example, SIOPE to take on the lawful, managerial, and monetary obligations to organize global clinical preliminaries. In Europe, clinical preliminaries have been effectively conveyed under the sponsorship of free clinical preliminary gatherings, which have teamed up with a scope of related scholarly foundations that address the legitimate and regulatory weights for individual preliminaries [5].

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