Neuroblastoma

Though rare, neuroblastoma is one of the most common types of cancer diagnosed in infants. The disease often begins in the nerve cells – called neuroblasts – of the adrenal glands. Neuroblastoma also may begin in the abdomen or chest, in nerve tissue near the spine, in the neck or in the spinal cord.

Neuroblastoma most often begins during early childhood, usually in children younger than 5 years. It sometimes forms before birth but is usually found later, when the tumor begins to grow and cause symptoms. In rare cases, neuroblastoma may be found before birth by fetal ultrasound. The disease can be difficult to diagnose because symptoms vary depending on the location of the tumor and because many of the symptoms mimic other childhood illnesses. By the time neuroblastoma is diagnosed, the cancer has usually metastasized, most often to the lymph nodes, bones, bone marrow, liver and skin.

Current standard treatment for neuroblastoma includes chemotherapy, surgery, bone marrow transplants, radiation and antibody therapy. Patients diagnosed with Stage 4 neuroblastoma have a less than 40 percent five-year survival rate.

Key Facts:

- Neuroblastoma is by far the most common cancer in infants (less than 1 year old). It accounts for about one in seven – or roughly 15 percent – of all childhood cancer deaths.
- There are about 650 new cases of neuroblastoma each year in the United States.
- The average age at the time of diagnosis is about 1 to 2 years. In rare cases, neuroblastoma is detected by ultrasound even before birth. Nearly 90 percent of cases are diagnosed by age 5. Neuroblastoma is extremely rare in people over the age of 10 years.
- In about two out of three cases, the disease has already spread to other parts of the body when it is diagnosed.

On the Horizon:

Personalized medicine is offering new hope to neuroblastoma patients. The Neuroblastoma and Medulloblastoma Translational Research Consortium is conducting of a first-of-its-kind genomic-based clinical trial to treat and study pediatric cancer – specifically relapsed and refractory neuroblastoma. The trial is testing the hypothesis that molecular aberrations in the tumors of individual pediatric patients with neuroblastoma can be identified in real time through genomic analysis to predict responsiveness to targeted therapies. Genomic-guided therapy leverages next generation sequencing and gene expression technologies to identify subtle differences in an individual's genetic makeup that provides a clearer picture of the disease state, and could conceivably single out an individual protein or other molecular drug target for therapy.

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