Medulloblastoma - Childhood - Latest Research

This section has been reviewed and approved by the Cancer.Net Editorial Board [1], May / 2013

Latest Research

ON THIS PAGE: You will read about the scientific research being done now to learn more about medulloblastoma and how to treat it. To see other pages in this guide, use the colored boxes on the right side of your screen, or click ?Next? at the bottom.

Doctors are working to learn more about medulloblastoma, ways to prevent it, how to best treat it, and how to provide the best care to children diagnosed with this disease. The following areas of research may include new options for patients through clinical trials. Always talk with your child?s doctor about the diagnostic and treatment options best for your child.

New staging systems. In addition to the staging criteria currently used (see Stages [2]), newer factors are being examined to help stage medulloblastoma in order to choose treatment. For example, tumors with certain features called anaplastic when examined under the microscope are being treated as high-risk tumors in some clinical trials.

Molecular testing of the tumor. Researchers are looking at laboratory tests for tumor samples to identify specific genes, proteins, and other factors unique to medulloblastoma. Results from these studies may help find new drugs that target these factors that help medulloblastoma grow and spread. Such drugs are being tested for patients whose tumors recur after initial treatment. These molecular features are also being looked at to predict how well treatment will work. Future studies will likely base patients? treatment on each tumor?s specific molecular features. Learn more about this approach, called targeted therapy [3].

Improved methods of imaging and surgery. Imaging techniques have been developed that help surgeons pinpoint the tumor?s location, which may reduce or prevent damage to the healthy parts of the brain during treatment.

- Functional MRI (fMRI) is an imaging technique that identifies the parts of the brain that control speech, hearing, vision, touch, and movement. The specific locations of these functions are slightly different in each person, so fMRI allows surgeons to plan surgery around these areas.
- Image-guided stereotaxis allows surgeons to visualize and operate on the brain using three-dimensional outlines of the brain and the tumor. Along with specialized software, these images help guide the surgeon to the tumor. A tumor that was once considered inoperable can now be removed by using this technique.

Improved methods of delivering radiation treatment. Conformal radiation therapy is a way to deliver high doses of radiation therapy more directly to a tumor and avoid healthy tissue. This technique produces detailed three-dimensional maps of the brain and tumor, so doctors know exactly where to deliver the radiation therapy.

Combination of therapies. Other areas of research include studies that examine the safety of reducing the doses of radiation therapy for children with a standard-risk tumor by using new approaches to chemotherapy. Other studies in infants and older children with high-risk tumors focus on new drugs and combinations of radiation therapy and chemotherapy to slow or stop tumor growth.

Supportive care. Clinical trials are underway to find better ways of reducing symptoms and side effects of current medulloblastoma treatments in order to improve patients? comfort and quality of life.

Looking for More about the Latest Research?

If you would like additional information about the latest areas of research regarding childhood cancer, explore these related items that take you outside of this guide.

- To find clinical trials specific to your child?s diagnosis, talk with your child?s doctor or search online clinical trial databases now [4].
- Review research announced at recent scientific meetings [5] or in ASCO?s peer-reviewed journals [6].
- Visit ASCO?s *CancerProgress.Net* [7] website to learn more about the historical pace of research for childhood cancer. Please note this link takes you to a separate ASCO website.

To continue reading this guide, choose ?Next? (below, right) to see a section about coping with the side effects of the disease or its treatment. Or, use the colored boxes located on the right side of your screen to visit any section.

Links:
[1] http://www.cancer.net/about-us
[2] http://www.cancer.net/node/19243
[3] http://www.cancer.net/node/24729
[4] http://www.cancer.net/node/24878
[5] http://www.cancer.net/cancer-news-and-meetings/asco-annual-meetings/research-summaries/childhood-cancer
[6] http://www.cancer.net/publications-and-resources/cancer-advances/news-patients-journal-clinical-oncology
[7] http://www.cancerprogress.net/timeline.html?secparam=pediatric