Astrocytoma - Childhood - Latest Research

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Latest Research

ON THIS PAGE: You will read about the scientific research being done now to learn more about astrocytoma and how to treat it. To see other pages, use the menu on the side of your screen.

Doctors are working to learn more about astrocytoma, 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 [2]. Always talk with your child?s doctor about the diagnostic and treatment options best for your child.

Improved methods of imaging and surgery. Imaging techniques are being developed and refined that help surgeons better pinpoint the tumor?s location to reduce or prevent damage to the healthy parts of the CNS 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 every 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. Tumors that were once considered inoperable often can be removed with this technique.

Improved ways to give radiation therapy. Conformal radiation therapy is a way to deliver high doses of radiation directly to a tumor and not healthy tissue. This technique produces detailed three-dimensional maps of the brain and tumor, so doctors know exactly where to direct the radiation treatment.

Molecular testing of the tumor. Your doctor may recommend running laboratory tests on a tumor sample to identify specific genes, proteins, and other factors unique to the tumor. Results of these tests will help decide whether your treatment options include a type of treatment called targeted therapy (see below). Recently, researchers have found genetic changes that are common in low-grade astrocytomas. Researchers are particularly interested in changes on a gene called *BRAF*. Researchers have also discovered specific patterns of genetic changes in high-grade astrocytomas, but treatments targeting these changes are not yet being studied in clinical trials.

Targeted therapy [3]. Targeted therapy is a treatment that targets the tumor?s specific genes, proteins, or the tissue environment that contributes to growth and survival. This type of treatment blocks the growth and spread of tumor cells while limiting damage to healthy cells. Specifically, researchers are studying new drugs that target changes on the *BRAF* gene as a treatment for children with recurrent astrocytoma.

Immunotherapy [4]. Immunotherapy, also called biologic therapy, is designed to boost the body?s natural defenses to fight the tumor. It uses materials made either by the body or in a laboratory to improve, target, or restore immune system function. Researchers are studying how well these drugs work and how safe they are for children with high-grade and low-grade astrocytoma.

Supportive care. Clinical trials are underway to find better ways of reducing symptoms and side effects of current astrocytoma 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 cancers, explore these related items that take you outside of this guide:

- To find clinical trials specific to the diagnosis, talk with your child?s doctor or search online clinical trial databases now [5].
- Visit ASCO?s CancerProgress.Net [6] website to learn more about the historical pace of research for childhood cancers. Please note this link takes you to a separate ASCO website.

The next section addresses how to cope with the symptoms of the disease or the side effects of its treatment. Use the menu on the side of your screen to select Coping with Side Effects, or you can select another section, to continue reading this guide.

Links:

[1] http://www.cancer.net/about-us
[2] http://www.cancer.net/node/24863
[3] http://www.cancer.net/node/24729
[4] http://www.cancer.net/node/24726
[5] http://www.cancer.net/node/24878
[6] http://www.cancerprogress.net/timeline/pediatric