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Study supports IDH gene as prognostic marker in anaplastic astrocytoma

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New findings suggest that a gene called IDH1 might be prognostic marker for a rare form of brain cancer. Patients in this study who had a mutated IDH gene lived an average of 7.9 years after diagnosis versus 2.8 years for patients with unaltered IDH.

The IDH study was done as part of the phase III clinical trial RTOG 9813, which involved 301 patients with anaplastic astrocytoma. The duel-arm trial evaluated the effectiveness of radiation therapy plus either of two chemotherapy drugs: temozolomide and nitrosourea.

"We found that IDH status is not only a significant prognostic biomarker for the classification of anaplastic gliomas, but there appears to be an interesting trend in the data which suggests that it might also be an important predictive biomarker for determining which type of chemotherapy patients should receive," says co-author Arnab Chakravarti, MD, chair and professor of Radiation Oncology and director of the Brain Tumor Program at The Ohio State University Comprehensive Cancer Center - Arthur G. James Cancer Hospital and Richard J. Solove Research Institute (OSUCCC - James).

"If this novel finding is verified, it could have a critical influence on future patient care," adds Chakravarti, who was the clinical trial's translational research national study chair.

The study was presented at the 2015 American Society of Clinical Oncology annual meeting in Chicago.

The clinical trial showed no significant difference in survival in patients taking temozolomide compared with patients taking nitrosourea after a follow up of 3.6 years on average. However, the study also suggested a trend toward better survival for patients with mutated IDH who received radiation therapy plus temozolomide compared with patients receiving radiation therapy and nitrosourea.

Astrocytomas arise from astrocytes, star-shaped cells that help nourish and support nerve and blood-vessel cells in the brain. Anaplastic astrocytomas are grade III brain tumors that can become grade IV tumors, which are also called glioblastoma.

Headaches, seizures, memory loss and behavioral change are early signs of the disease. Other symptoms can occur, depending where the tumor develops in the brain.

Treatment of anaplastic astrocytomas first requires surgery to remove as much tumor as possible. Complete removal is often impossible, however, because the tumors typically develop projections that extend into healthy brain tissue. Radiation therapy is then used to kill any remaining tumor cells. Chemotherapy is often recommended during or after radiation or both.

Provided by Ohio State University Medical Center

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