

Missing chromosome predicts brain tumor patients' response to treatment

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People with a highly aggressive type of brain tumor who are missing a specific chromosome live longer and respond better to the chemotherapy drug temozolomide than people without this genetic abnormality, according to research published in the February 19, 2008, issue of *Neurology*, the medical journal of the American Academy of Neurology. Gliomatosis cerebri is a rare type of brain tumor that is difficult to diagnosis, cannot be operated on, and has an extremely variable prognosis.

“Our findings will help doctors better predict who will respond best to temozolomide, which has recently been proposed as a new treatment for gliomatosis cerebri,” said Marc Sanson, MD, PhD, with INSERM, the French government health agency, in Paris, France. “Before now, we weren’t sure which factors influenced how well a person with this type of brain tumor would respond to the treatment.”

For the study, 25 people with gliomatosis cerebri underwent genetic testing and received monthly treatments of temozolomide for up to two years.

The study found nearly all of the participants who were missing chromosome 1p and 19q had a higher response rate to temozolomide and lived longer.

“Eighty-eight percent of those people with this genetic signature responded well to temozolomide compared to only 25 percent of those

people without the genetic abnormality,” said Sanson. “In addition, those without 1p and 19q survived an average five and half years compared to only 15 months for the group with intact 1p and 19q. Those missing 1p and 19q also had more months without the tumor further progressing. Therefore, temozolomide is now our first choice of treatment for patients with gliomatosis cerebri, especially when missing chromosomes 1p and 19q.”

Source: American Academy of Neurology

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