Hyperbaric Oxygen May Help in Treating Aggressive Brain Cancer

Unique Clinical Trial at Neurological Surgery, P.C. Looks at Augmenting Standard Treatment for Malignant Glioblastoma

Rockville Centre, NY (PRWEB) September 23, 2011 -- In a unique study, researchers at The Long Island Brain Tumor Center at Neurological Surgery, P.C. are examining whether hyperbaric oxygen therapy – breathing pure oxygen while in a pressurized chamber – may prove a useful addition to the current standard of care for patients newly diagnosed with glioblastoma, an aggressive brain cancer. The Phase II study is currently enrolling participants, and is being conducted at Neurological Surgery, P.C. offices in Nassau and Suffolk Counties, New York, as well as at Winthrop University Hospital, Mineola, NY.

“Malignant glioblastoma is the most aggressive type of brain cancer, and it generally has a poor prognosis,” says neuro-oncologist J. Paul Duic, MD, principal investigator on the study and co-director of The Long Island Brain Tumor Center. “Novel treatment strategies are clearly needed.”

According to the National Cancer Institute, malignant brain tumors are the second leading cause of cancer deaths in people under 35, and the fourth leading cause of cancer death in people under 54. Glioblastoma is the most common and most aggressive primary (non-metastatic) type of brain cancer. Median survival for glioblastomas is 12-14 months, and only 26 percent of patients survive two years.

Patients enrolled in the study must be newly diagnosed with malignant glioblastoma, and have previously received brain tumor surgery, but not radiation or chemotherapy. All patients in the study will receive the current standard of care for those newly diagnosed with glioblastoma – temozolomide (Temodar®) plus radiation therapy – as well as hyperbaric oxygen therapy.

“We know that these brain tumors prefer a low-oxygen metabolic state, and there is evidence that this metabolic state may contribute to the tumors’ ability to resist the effects of radiation therapy and chemotherapy,” says Jai Grewal, MD, sub-investigator on the study and co-director of The Long Island Brain Tumor Center. “We want to see whether increasing the oxygen concentration of the tumor increases the effectiveness of standard therapy.”

Drs. Duic and Grewal are also interested in evaluating the effect of this treatment on patients’ quality of life and stress levels. Participants will be asked to complete several brief questionnaires.

Hyperbaric oxygen has shown some benefit in pre-clinical studies, and in two recent Japanese clinical trials. In the first clinical trial, published in 2006, Ogawa and colleagues found that patients who received radiation therapy immediately after hyperbaric oxygenation, combined with chemotherapy, had longer survival rates, relatively few adverse events and no late toxicities. In 2007, Kohshi and colleagues reported additional survival benefits with minimal additional toxicity for previously treated high-grade glioma patients who were given hyperbaric oxygen combined with stereotactic radiosurgery.

In the current study, which is the only one of its type underway in the U.S., patients will first receive blood and medical imaging tests. They will then be given six weeks of hyperbaric treatments combined with radiation
(Monday-Friday) and chemotherapy with temozolomide, which they will take at home daily. They will then have four weeks off treatment, then resume taking temozolomide on a monthly basis.

Study participants will receive the experimental hyperbaric therapy prior to each radiation treatment during the initial six weeks of treatment. During the hyperbaric treatment, the patient will lie on a stretcher in a hyperbaric chamber and breathe oxygen at greater than normal atmospheric pressure. Blood sugar measurements will be taken, and medical imaging tests will also be done.

Patient participation in the study lasts one year, unless the patient cannot tolerate further treatment or side effects, or shows evidence of tumor progression. Patients may also voluntarily withdraw from the study.

Study results will be compared with those from the recently published multi-center trial by Stupp and colleagues, which demonstrated that temozolomide, when added to radiation therapy, can prolong the lives of those newly diagnosed with glioblastoma. This study defined the current standard of care.

The Long Island Brain Tumor Center at Neurological Surgery, P.C. provides the most comprehensive care available on Long Island, with state-of-the-art facilities located across Nassau and Suffolk Counties. The Center offers a multi-disciplinary approach to treating brain tumors, provided by a team of more than 20 physicians and surgeons with various sub-specialties. The team works in concert with patients’ medical oncologists and other health care professionals, and treats primary brain and spinal tumors, as well as metastases and CNS lymphoma. The Center is currently conducting two clinical trials.

For more information on this or other brain tumor studies, please call Kerry McConie, RN, (516) 478-0010, or Julia Trojanowski, RN, (631) 864-3900.

About Neurological Surgery, P.C.
Neurological Surgery, P.C. is one of the New York City area’s premier neurosurgical groups, offering patients the most advanced treatments of brain and spine disorders. These include minimally invasive procedures such as stereotactic radiosurgery (Gamma Knife® and CyberKnife®), aneurysm coiling, neuro-endoscopy, spinal stimulators, carotid stents, interventional pain management, microdiscectomy, kyphoplasty, and X-STOP®. The practice’s physicians represent a range of surgical and nonsurgical specialties, combining compassionate care with highly specialized training. They are leaders in the region’s medical community, with appointments as chiefs of neurosurgery in some of Long Island’s best hospitals. NSPC offers eight convenient locations in Queens, Nassau and Suffolk Counties. For more information, call 1-800-775-7784 or visit www.NSPC.com.

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