

Researchers identify a new approach to detect the early progression of brain tumors

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Researchers at Barrow Neurological Institute at St. Joseph's Hospital and Medical Center recently participated in a pilot study with the Montreal Neurological Institute that suggests a certain type of MRI scanning can detect when a patient is failing brain tumor treatment before symptoms appear. The results of the study pave the way for a proactive treatment approach.

The study followed patients with recurring malignant brain tumors who were receiving chemotherapy. Patients received scans through an imaging device called MR spectroscopy to identify metabolic changes. The scanning technique suggested that the use of metabolic imaging identifies chemical changes earlier than structural imaging such as a conventional MRI and CT scans.

This approach allowed researchers to determine if the tumors were responding to treatment early by assessing metabolic changes in a brain tumor, which are easy to detect and appear before structural changes or symptoms. The result may give patients more time to try another treatment.

"The study has shown for the first time that metabolic response to brain tumor treatment can be detected earlier and faster by metabolic imaging instead of through structural imaging or assessment of the neurological status of a patient," says Mark C. Preul, M.D., Newsome Chair of Neurosurgery Research at St. Joseph's.

The imaging can be done often, poses no radiation hazard and is non-invasive.

"Frequent use of this type of imaging may be a useful tool to follow a patient's response to chemotherapy for malignant brain tumors," says Dr. Preul. "It gives us the ability to identify treatment failure early and more time to alter a patient's treatment plan before the disease progresses."

As a result of the pilot study, Barrow researchers are planning to conduct a second study that will use imaging in the same way to monitor the effects of brain tumor treatment. They are also developing imaging modalities that will show how brain tumors change their shape and metabolism with treatment.

Source: St. Joseph's Hospital and Medical Center

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