

Researchers make breakthrough on immune system and brain tumors

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In what could be a breakthrough in the treatment of deadly brain tumors, a team of researchers from Barrow Neurological Institute and Arizona State University has discovered that the immune system reacts differently to different types of brain tissue, shedding light on why cancerous brain tumors are so difficult to treat.

The large, two-part study, led by Barrow research fellow Sergiy Kushchayev, MD under the guidance of Dr. Mark Preul, Director of Neurosurgery Research, was published in the Sept. 14 issue of *Cancer Management and Research*. (Monocyte galactose/N-acetylgalactosamine-specific C-type lectin receptor stimulant immunotherapy of an experimental glioma.) The study explores the effects of immunotherapy on malignant gliomas, cancerous [brain tumors](#) that typically have a [poor prognosis](#).

What the researchers discovered was that immune cells of the brain and of the blood exhibit massive rearrangements when interacting with a [malignant glioma](#) under treatment. Essentially, the study demonstrates that the complex immune system reacts differently in different brain tissues and different regions of the brain, including tumors.

"This is the first time that researchers have conducted a regional tissue study of the brain and a malignant glioma to show that these [immune cells](#) do not aggregate or behave in the same way in their respective areas of the brain," says Dr. Preul. "This means that effective treatment in one area of the brain may not be effective in another area. In fact, it could

even cause other regions of the tumor to become worse."

The results of the study provide important insight into why clinical trials involving immunotherapies on glioma patients may not be working.

Provided by St. Joseph's Hospital and Medical Center

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