

Ivy Brain Tumor Center



Neuro-oncologist Kelly Braun, MD, is a co-investigator on the groundbreaking Ivy Brain Tumor Center Phase 0/2 clinical trials.

→ **THERE ARE 138,000 PEOPLE** in the United States living with a malignant brain tumor. The Ivy Brain Tumor Center at Barrow Neurological Institute was founded to provide hope to those patients and their families. The Ivy Center offers a bold approach to identifying effective, new investigational therapies for aggressive brain tumors, including glioblastoma. Patients receive individualized care in a fraction of the time and cost associated with traditional drug research and development. Unlike conventional clinical trials that focus on a specific drug, the accelerated Phase 0/2 clinical trials discover therapy combinations for individual patients. Short-term results are available within 10 days, rather than months, allowing patients to continue on effective treatments or enroll in another clinical trial without losing valuable time.



9 OUT OF 10

with glioblastoma
will not survive longer
than 5 years



More than

138,000

in U.S. living with
malignant brain tumors



Glioblastoma affects

MORE MEN

than women

ABOUT BARROW
NEUROLOGICAL INSTITUTE



#1 IN ARIZONA
#11 IN THE UNITED STATES
for neurology and neurosurgery



CLINICAL IMPACT

92,515

BNI Clinic visits

3,135

number of neurosurgeries

1,578

number of spine surgeries

\$2.8 MILLION

amount of charity care



GLOBAL IMPACT

54

visiting scholars, research fellows and observers from Mexico, India, Egypt, Pakistan, UK, Russia, China, Chile, Spain, Brazil, Japan, France, Italy, Kingdom of Saudi Arabia, Indonesia, Turkey, Germany, Poland, Colombia, Philippines, Israel, Argentina and Thailand.

PROGRAM ACCOMPLISHMENTS

Breakthroughs in brain cancer research require collaboration, between physicians and scientists, and with the pharmaceutical industry. The Ivy Center was designed to accommodate concerns regarding cost, safety, and speed that typically deter the industry from developing drugs for brain cancer. In less than 18 months, the Ivy Center has engaged 17 different drug combinations for brain tumor patients. These are first-in-human or first-in-class drugs that have never been tested in the brain tumor patient population. The Ivy Center recently announced three new partnerships testing targeted therapies on preclinical models to determine whether they cross the blood-brain barrier and hit their therapeutic targets. If proven successful, the Ivy Center will advance the drugs to Phase 0/2 clinical trials in 2020.

The Ivy Center actively recruits innovative, highly accomplished scientists and investigators. Artak Tovmasyan, PharmD, PhD, recently joined the team as the leader of the Pharmacokinetics Core. Dr. Tovmasyan has an extensive background in pharmaceutical chemistry and comes from Duke



Artak Tovmasyan, PharmD, PhD

Clinical and Translational Science Institute in North Carolina where he was a senior research associate. Dr. Tovmasyan will be a great asset in identifying the best therapies for brain tumor treatment.

The Ivy Center opened a new research site at Chandler Regional Medical Center. This expansion makes participation in Phase 0/2 clinical trials more convenient for patients in the East Valley. The Ivy Center's vision is to open research sites throughout the country and the world, giving all brain tumor patients, regardless of where they live, the opportunity to participate.

RESEARCH ADVANCES

Breakthroughs in the treatment of brain tumors have been few and far between over the last 40 years. The Ivy Center is dedicated to accelerating the science to extend patient lives and improve their quality of life.

The results of a new Phase 0 clinical trial identified a recently developed drug intended for aggressive breast cancer that is capable of penetrating the blood-brain barrier, unlike many other cancer drugs. The drug also undermines cancer cell division, and may be an effective backbone for

a new drug combination targeting malignant brain tumors like glioblastoma. A young man named Nick with malignant meningioma, a uniformly lethal tumor that typically recurs within four months, participated in the Ivy Center trial. Nick has been taking this drug for more than a year, and there is currently no trace of the tumor. The results of this study appear in *Clinical Cancer Research*, a journal published by the American Association of Cancer Research.

“When Nick’s recurrence happened, we already had a great deal of trust. The Ivy Brain Tumor Center goes after brain tumors with novel approaches being done in very few places. We were very blessed and lucky we lived here and he could participate.”

HARRIET MACCRACKEN

ON THE HORIZON

A new first-in-human clinical trial is just one of many that will begin enrolling patients in 2020. The trial will test a non-invasive drug-device combination for glioblastoma. A drug that binds to glioblastoma cells exclusively will be administered intravenously and then the tumor will be targeted by ultrasound creating a lethal reaction for the cells. This novel strategy shows promise in preclinical models and investigators at the Ivy Center will quickly assess whether it is safe and effective.

↓ *YuWei Chang, PhD, a postdoctoral fellow, examines a tumor tissue sample in the Pharmacodynamics Lab.*



RESEARCH

320

active research studies

839

patients enrolled in clinical trials

\$9 MILLION

in federal research grant support



DONOR IMPACT

\$3.98 MILLION

for basic and translational research

\$3.65 MILLION

for strategic initiatives including Barrow Aneurysm & AVM Research Center, Barrow Artificial Intelligence Center, neuroimaging and stroke

\$1.26 MILLION

for education and fellowship programs

\$2.52 MILLION

for community outreach programs



THANK YOU FOR YOUR SUPPORT

I am grateful for the ongoing support of Barrow donors. In order to accelerate treatment pathways and improve patients' quality of life, we rely on your generosity. We have big ideas and must quickly follow the science wherever it leads us. I am confident we will make a difference for patients with this horrible disease. I cannot thank you enough for making that possible.

With Gratitude,
Nader Sanai, MD

FRANCIS AND DIONNE NAJAFI CHAIR
FOR NEUROSURGICAL ONCOLOGY

↑ *Nader Sanai, MD, is Director of the Ivy Brain Tumor Center. Their work is giving new hope to Phase 0/2 trial participants like Lourdes Barahona.*

Barrow Neurological Foundation raises awareness and funding for patient care, medical education, community outreach and research offered at Barrow Neurological Institute. Barrow is an internationally-recognized leader in neurology, neurosurgery and neuroscience research, treating patients with a wide range of conditions, including brain and spinal tumors, concussion and brain and spinal traumas, neuromuscular diseases, stroke, cleft and craniofacial disorders, and cerebrovascular disorders. It is home to several centers of excellence, including the Ivy Brain Tumor Center, Muhammad Ali Parkinson Center and Gregory W. Fulton ALS and Neuromuscular Disease Center. www.SupportBarrow.org



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