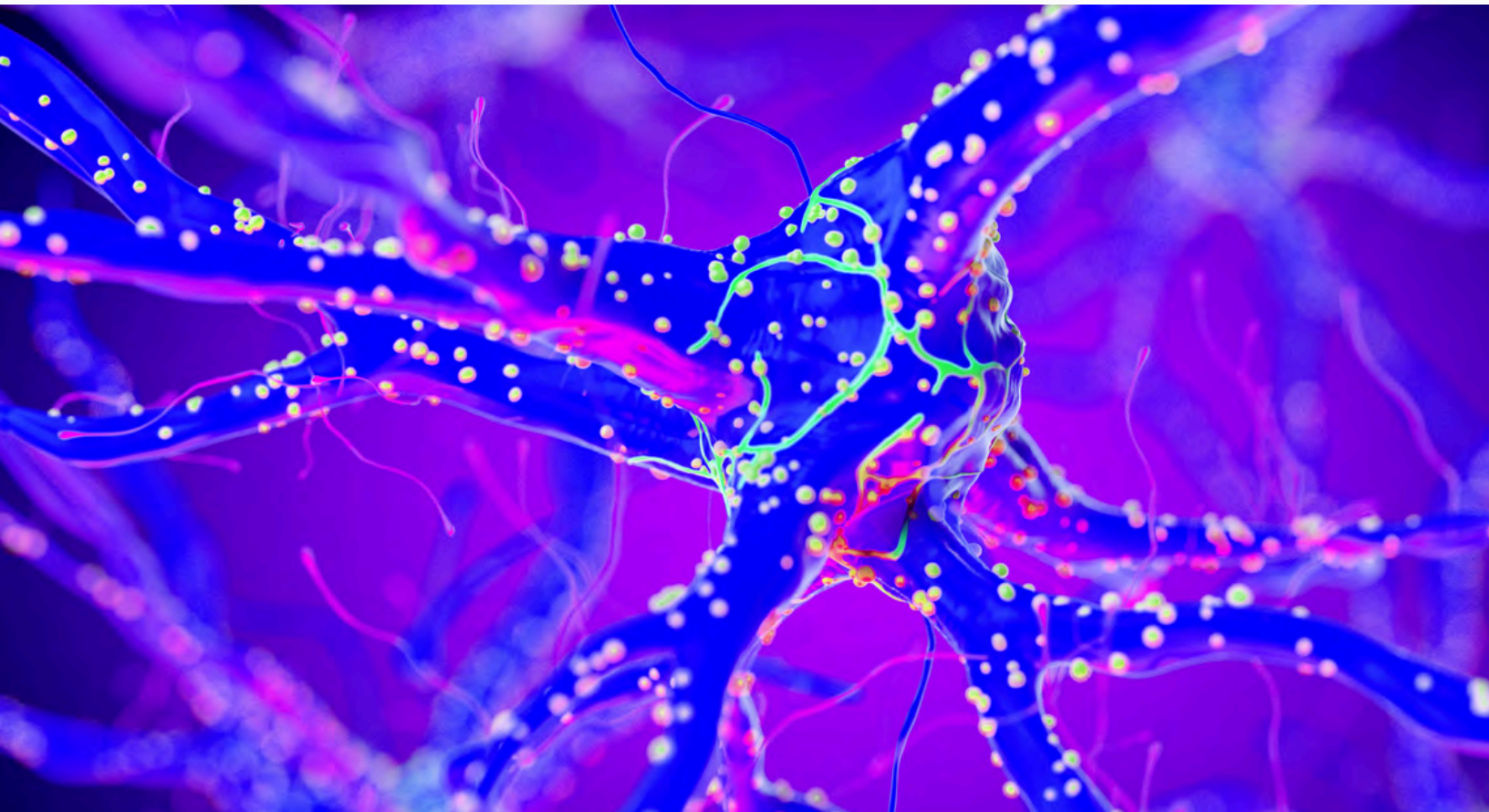


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The Clinical Neurosciences Newsletter



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A WELCOME MESSAGE

Dear Colleagues,

As the weather warms and the cherry blossoms reach their peak, I want to take a moment to wish everyone a joyful and refreshing spring. This season brings not only new beginnings in nature but also exciting developments within our department.

We are actively recruiting physicians and advanced practice providers (APPs) for Cedar Hill Hospital, a critical step in expanding our reach and ensuring we provide exceptional neurological care to more patients in our community.

I am also pleased to announce an internal search for our next Vice Chair for Education—a vital role in maintaining our department's position as a leader in neurologic education. To ensure fairness, the selection process will be blinded to applicant names, and some judges will be external. We encourage all those passionate about medical education to consider applying.

In addition, we will soon launch the search for a Vice Chair for Research, further strengthening our commitment to innovation and discovery in neurology.

Thank you all for your dedication to our department's mission. I look forward to the great strides we will continue to make together.

Warm regards,

M. Z. Koubeissi, MD
Professor and Interim Chair
GW Department of Neurology & Rehabilitation Medicine



OUR NEWS



Dr. Alexandra Eid et al. published a paper titled 'Seizure Cycle App: A Feasibility Study.' *Epilepsy and Behavior*



Dr. Mohamad Koubeissi was elected in the GW Chapter's 2025 class to the National Academy of Inventors (NAI) rank of Inventor Member.



Dr. Mohamad Koubeissi has become a member of the GW Medicine Pharmacy & Therapeutics Committee.



Dr. Ted Rothstein was invited to become a member of the Sigma Xi National Honor Scientific Research Society

Researchers at the George Washington University are looking for interested volunteers for a healthy control study to better understand an autoimmune, neuromuscular (disease affecting nerves and muscles) known as Myasthenia Gravis.

Faculty and staff are welcome to participate.

PARTICIPATION INVOLVES:
One-time blood draw (You will have either 4 teaspoons (20 milliliters) or 10 teaspoons (50 milliliters) from an arm vein.



YOU MAY QUALIFY IF YOU:

- Don't have any autoimmune diseases
- No prednisone or corticosteroid use
- No vaccinations within a month

For more information, contact goztosun@mfa.gwu.edu



WHAT'S NEW IN NEUROLOGY

WHAT'S NEW

Extending therapeutic window beyond 4.5 hour based on perfusion imaging may increase eligible acute ischemic stroke patients that can benefit from intravenous thrombolysis.

WHY IT MATTERS

Intravenous thrombolysis remains the cornerstone for treating acute ischemic stroke (AIS), yet its use is severely limited by a narrow 4.5-hour treatment window. Research suggests that some patients have “slow-evolving” strokes, with salvageable brain tissue persisting well beyond 4.5 hours—potentially for up to 24 hours. Large vessel occlusion stroke clinical trials (such as DAWN and DEFUSE3) extended the window for endovascular treatment, illustrating the importance of imaging-based patient selection.

A prospective open-label, randomized trial, HOPE (Treatment with Intravenous Alteplase in Ischemic Stroke Patients with Onset Time between 4.5 and 24 Hours), explored whether intravenous alteplase is safe and effective when administered far beyond the traditional 0 to 4.5-hour window. HOPE investigators screened adults with acute ischemic stroke 4.5–24 hours from onset (or from last known well for wake-up and unknown-onset strokes) and used CT perfusion to confirm salvageable tissue (small ischemic core ≤ 70 mL, penumbra ≥ 10 mL, mismatch $\geq 20\%$). Participants were randomized to receive either alteplase plus standard care or standard care alone. 372 participants were randomized between June 2021 and June 2024; 179 in the alteplase group and 171 in the standard-care group remained in the per-protocol analysis after excluding those who did not meet eligibility or who crossed over to other treatments. Functional Improvement: 40.3% of patients in the alteplase group achieved an excellent outcome (modified Rankin Scale score 0-1 at 90 days), compared to 26.3% of those on standard medical treatment (adjusted risk ratio: 1.52 [1.14–2.02], $p = 0.004$). Symptomatic intracranial hemorrhage within 36 hours occurred in 3.8% (7/185) of the alteplase group and 0.5% (1/182) of the standard treatment group, indicating a higher relative risk (7.34 [1.54–34.84]) without a corresponding increase in 90-day mortality.

Intravenous alteplase administered up to 24 hours after stroke onset in patients selected by perfusion imaging significantly improved recovery compared to standard therapy. The increased risk in intracerebral hemorrhage in the alteplase group did not result in higher mortality rate, supporting a potentially longer therapeutic window for some individuals.

References:

Feb 2025. Treatment with intravenous alteplase in ischaemic stroke patients with onset time between 4.5 and 24 hours (HOPE): protocol for a randomised, controlled, multicentre study. Luo, Zhongyu ; Zhou, Ying ; He, Yaode ; Yan, Shengqiang ; Chen, Zhicai ; Zhang, Xuting ; Chen, Yi ; Tong, Lu-Sha ; Zhong, Wansi ; Hu, Haitao ; Zhang, Kemeng ; Yang, Jiansheng ; Campbell, Bruce C V ; Lou, Min Stroke and vascular neurology. 2024-06. Vol.9 (3). p.318-323v

WHAT'S NEW

Role of intra-arterial (IA) Tenecteplase (TNK) for acute large vessel occlusion (LVO) after successful endovascular thrombectomy between 4.5 and 24 hours from onset.

WHY IT MATTERS

Even after successful recanalization of a large vessel occlusion stroke, nearly half of patients remain dependent or die. This disconnect between successful recanalization and clinical outcomes may be related to several factors: the evolution of cerebral infarction by the time of recanalization, patient comorbidities, or medical complications after stroke. The absence of cerebral microvascular reperfusion despite macrovascular reperfusion is known as the ‘no-reflow’ phenomenon. Microvascular occlusion arising from thrombus fragments, vascular remodeling, stalled neutrophils that impede blood flow, and downstream microvascular failure helps explain the lack of adequate perfusion. This ‘no-reflow’ phenomenon occurs in about one-third of patients with successful angiographic recanalization, contributing to suboptimal clinical results.

ANGEL-TNK (AI TNK thrombolysis after successful endovascular therapy) Study a Prospective, multicenter, randomized, open-label, blinded-endpoint trial comparing intra-arterial TNK against standard medical management. Functional Outcome: At 90 days, 40.5% of patients receiving intra-arterial TNK achieved a mRS of 0-1, compared to 26.4% of those managed medically (treatment effect 1.44 [1.06-1.95], $p = 0.02$). Mortality: No significant difference in 90-day mortality between groups (21.4% vs 21.7%, $P = 0.39$). Safety: Rates of symptomatic intracranial hemorrhage by 48 hours were similar (5.6% vs 6.2%, $p = 0.92$).

Conclusions: Intra-arterial TNK given after endovascular thrombectomy may increase the odds of excellent functional recovery at 90 days, without adding mortality or hemorrhage risk, compared to standard care alone.

References:

Intra-arterial tenecteplase after successful endovascular therapy (ANGEL-TNK): protocol of a multicentre, open-label, blinded end-point, prospective, randomised trial. Xiaochuan Huo # 1, Gang Luo # 2 3, Dapeng Sun # 2 3, Thanh Nguyen 4, Mohamad Abdalkader 4, Wenhao Chen 5, Xiaoxi Yao 6, Guangxiang Yuan 7, Tingyu Yi 8, Hongxin Han 9, Yuesong Pan 3, Tudor G Jovin 10, David S Liebeskind 11, Liping Liu 3 12, Xingquan Zhao 12, Zeguang Ren 13, Yilong Wang 3 12, Yongjun Wang 3 12, Bernard Yan 14, Zhongrong Miao 15 3



Interview with
Dr. Panagiotis Kassavetis



Interview with

Dr. Panagiotis Kassavetis

Can you start by giving us a brief overview of your role and the disorders you specialize in?

Certainly. I am a neurologist specializing in movement disorders. This means that after completing my training in neurology, I pursued additional fellowship training specifically focused on movement disorders. These are neurological conditions that affect movement due to dysfunction in specific areas of the brain. Some common movement disorders include Parkinson's disease, essential tremor, dystonia, and others.

Is there a particular movement disorder that you focus on within your practice?

In my clinic, I see a wide range of movement disorders. Broadly, movement disorders can be classified into two main categories: hypokinetic and hyperkinetic disorders. Hypokinetic disorders, such as Parkinson's disease, involve reduced movement, where patients lose their natural, spontaneous movements. On the other hand, hyperkinetic disorders cause excessive movement, such as tremors, dystonia, or muscle spasms. While the majority of my clinic patients have a hypokinetic movement disorder, hyperkinetic disorders are also a significant part of my clinical and research interests.

Can you provide an overview of the work you've been doing with deep brain stimulation (DBS)?

My work in DBS falls under the broader category of neuromodulation therapies, which include deep brain stimulation and focused ultrasound ablation therapy. These advanced therapies are designed to help patients with movement disorders who do not respond adequately to medications. DBS involves implanting electrodes into specific areas of the brain to deliver electrical stimulation, much like a pacemaker for the brain. The goal is to modulate abnormal brain activity and alleviate symptoms. The procedure requires a surgery, during which a device is implanted in the patient's body, with electrodes placed in targeted brain regions. The most common conditions we treat with DBS are Parkinson's disease and essential tremor.

At GW, we provide comprehensive, multidisciplinary care for patients undergoing DBS, from preoperative evaluations to postoperative follow-ups. Our patients that go through our neuromodulation program receive care from multiple teams, including Neurology, Neurosurgery, Radiology, Neuropsychology, and Physical therapy.



Interview with

Dr. Panagiotis Kassavetis

Could you also elaborate on focused ultrasound therapy?

Focused ultrasound therapy is a newer, incision-free technique that uses ultrasound waves to precisely ablate small areas of the brain associated with movement disorders. The concept of ablating brain regions to treat movement disorders is not new; historically, surgeons would perform open-brain procedures to burn specific areas. However, with advances in technology, we can now achieve the same outcome without incisions while the patient is awake, requiring no anesthesia and no admission or stay in the hospital.

Looking at the history of movement disorders, how do you think the field has evolved, especially regarding patient care and treatment options?

The field of movement disorders has seen several key breakthroughs over the years. One of the most significant was the discovery of levodopa, which remains the cornerstone of treatment for Parkinson's disease. This dramatically improved patients' quality of life and remains a fundamental therapy for Parkinson's disease.

Another major advancement was the development of deep brain stimulation more than 20 years ago. DBS provided an alternative for patients whose symptoms were not adequately controlled by medication. More recently, we've seen advancements in neuromodulation techniques and the introduction of focused ultrasound, as well as the development of novel drug therapies.

While these breakthroughs have been transformative, the next major goal is to find a cure for neurodegenerative movement disorders. There is extensive research underway aimed at disease modification, particularly in conditions like Parkinson's disease. My hope is that in the coming years, we will see therapies that go beyond symptom management and address the underlying causes of these disorders.

Do you see any emerging technologies playing a role in movement disorder treatment?

AI has great potential in many aspects of medicine, including neurology. It is a remarkable tool that can assist with many aspects of medicine, from delivery of care and making treatments more accessible to enhancing research and drug discovery. I think AI will transform the future of medicine, but I believe that the next breakthrough will only be possible through high-quality research.



Interview with Dr. Panagiotis Kassavetis

What does the movement disorders GW program offer to patients?

At GW, we provide a comprehensive, multidisciplinary approach to movement disorders. Our team includes movement disorder specialists, psychologists, physical therapists, and neurosurgeons, ensuring that patients receive holistic care. We offer all available neuromodulation therapies, including deep brain stimulation and focused ultrasound. In fact, GW is the only facility in the Washington, DC area that provides focused ultrasound ablation therapy. [PK1] We offer newly approved advanced therapies, such as levodopa pumps and apomorphine pumps, which were just recently FDA-approved. We also specialize in botulinum toxin injections for conditions like dystonia and spasticity, using advanced guidance techniques such as electromyography and ultrasound imaging to ensure precise treatment. [PK1] I don't think GU has FUS yet but I am not 100% sure. Dr Koubeissi should we keep this sentence or remove it?

How long have you been at GW, and what do you enjoy most about working here?

I joined GW in September 2024, and my experience so far has been fantastic. What sets GW apart is the collaborative atmosphere within the neurology department. The collegiality, support, and shared excitement for growth and innovation make it an excellent environment for both clinicians and researchers. I believe that a strong institutional environment directly impacts patient care. When physicians have access to the right resources and work in a supportive setting, they can provide the highest level of care to their patients. GW offers everything we need to deliver outstanding movement disorder care, and that's something I deeply appreciate.

Is there a message you'd like to share with our readers about the future of GW's movement disorders division?

Yes, our movement disorders division is still growing, and we are actively expanding our expertise in neuromodulation therapies, including deep brain stimulation and focused ultrasound ablation. We also plan to increase our research efforts, offering more clinical trials and studies to better understand and treat movement disorders. Additionally, we are developing a specialized Normal Pressure Hydrocephalus (NPH) clinic in collaboration with Dr Carlos Sanchez from Neurosurgery and plan to expand geographically. This is very exciting time to practice movement disorders at GW. Overall, GW is committed to advancing patient care through innovative treatments and research, and I look forward to contributing to its continued growth.





January 7, 2025
Carlos Sanchez, MD
 The George Washington University
 Title: Cellular Engineering of Autologous
 Glioblastoma Specific T cells

January 14, 2025
Mark J. Edwards, MD
 King's College London, United Kingdom
 Title: TBD

January 28, 2025
Victor Wang, MD
 Sutter East Bay Medical Group
 Title: Headache Medicine in the
 LGBTQIA Community: Sex, Drugs, and
 Everything in Between

February 4, 2025
Saleem Abdulrauf, MD
 The George Washington University
 Title: TBD

February 11, 2025
Cheryl Bushnell, MD
 Atrium Wake Forest Baptist Health
 Title: Advancing Blood Pressure
 Management after Stroke: A New Model
 of Care

February 18, 2025
Aline Herlopian, MD
 Yale University
 Title: HFO and the Epilepsy Networks

February 25, 2025
David Hafler, MD
 Yale University
 Title: The Underlying Cause of Multiple
 Sclerosis

March 4, 2025
Dimitri Sigounas, MD
 The George Washington University
 Title: TBD

March 11, 2025
Erik St. Louis, MD
 Mayo Clinic
 Title: TBD

March 18, 2025
Raman Sankar, MD, PhD
 UCLA
 Title: TBD

March 25, 2025
James Grotta, MD
 UT Houston/Memorial Hermann
 Title: TBD

April 1, 2025
Justin Kwan, MD
 National Institute of Health
 Title: TBD

April 8, 2025
Chase Foster, MD
 Johns Hopkins University
 Title: TBD

April 15, 2025
Pierre Fayad, MD
 University of Nebraska
 Title: TBD

April 22, 2025
David Auerbach, PhD
 Upstate Medical University
 Title: Looking Beyond the Classically
 Studied Organ: Bedside-to-Bench
 Approaches to Study Electrical
 Disturbances in the Brain and Heart

April 29, 2025
Simon Little, PhD
 UCSF
 Title: Closed Loop/adaptive DBS

May 6, 2025
Donald Shields, MD
 Spartanburg Regional Healthcare
 Title: TBD

May 13, 2025
Casey Albin, MD
 Emory School of Medicine
 Title: Interesting Subjects within NCC

May 20, 2025
John Schreiber, MD
 Children's National
 Title: TBD

May 27, 2025
James Mastrianni, MD, PhD
 University of Chicago
 Title: TBD

June 3, 2025
Chima Oluigbo, MD
 Children's National
 Title: TBD

June 10, 2025
Steven Zeiler, MD, PhD
 John's Hopkins University
 Title: TBD

June 17, 2025
John Stern, MD
 UCLA
 Title: TBD

June 24, 2025
Alberto Espay, MD
 University of Cincinnati
 Title: TBD



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