

APRIL 2025 | ISSUE 4

THE GEORGE WASHINGTON UNIVERSITY

WASHINGTON, DC

The Clinical Neurosciences Newsletter



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OUR NEWS



GW and Children's National epilepsy teams participated in The National Walk for Epilepsy, March 15 2025.



Dr. Alexandra Eid gave grand rounds at Seattle Children's on 3/14 titled: "I Don't Belong Here" Understanding and Addressing Impostor Phenomenon.



Dr. Carlos Sanchez and Dr. Saleem Abdulrauf featured on ABC news.

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

Revolutionizing Parkinson's Disease Treatment: FDA Approval of Levodopa and Apomorphine Pumps

For patients with Parkinson's disease experiencing motor fluctuations and challenges with oral medications, a new era of treatment has arrived. The FDA recently approved two innovative continuous drug delivery systems: the levodopa pump and the apomorphine pump. These therapies aim to provide more stable and consistent symptom management by bypassing the gastrointestinal system, which often leads to erratic drug absorption.

WHY IT MATTERS

Levodopa, the gold standard for Parkinson's treatment, can now be delivered via a subcutaneous infusion pump, offering patients prolonged and steady relief from motor fluctuations. Similarly, apomorphine, a dopamine agonist traditionally used as a rescue therapy, can now be administered through a continuous pump, reducing the need for injections. Clinical trials have demonstrated significant reductions in OFF periods and improved quality of life, making these pumps a promising option for patients struggling with traditional oral medications [1-3].

Key benefits include:

- **Continuous symptom control:** Reducing fluctuations associated with oral dosing.
- **Fewer side effects:** Lower rates of dyskinesias.
- **Improved quality of life:** More independence and consistency in symptom relief.

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:

Katzenschlager, R., et al., Apomorphine subcutaneous infusion in patients with Parkinson's disease with persistent motor fluctuations (TOLEDO): a multicentre, double-blind, randomised, placebo-controlled trial. *Lancet Neurol*, 2018, 17(9): p. 749-759.

Soilleau, M.J., et al., Safety and efficacy of continuous subcutaneous foslevodopa-foscarbidopa in patients with advanced Parkinson's disease: a randomised, double-blind, active-controlled, phase 3 trial. *Lancet Neurol*, 2022, 21(12): p. 1099-1109.

Espay, A.J., et al., Safety and efficacy of continuous subcutaneous levodopa-carbidopa infusion (NDO612) for Parkinson's disease with motor fluctuations (BouNDless): a phase 3, randomised, double-blind, double-dummy, multicentre trial. *Lancet Neurol*, 2024, 23(5): p. 465-476.

WHAT'S NEW

Medtronic's Newly Approved Adaptive Deep Brain Stimulation (DBS)

Deep Brain Stimulation (DBS) has been a cornerstone treatment for Parkinson's disease and other movement disorders, but the latest breakthrough by Medtronic takes this therapy to the next level. The FDA has approved the first-ever Adaptive DBS system, which dynamically adjusts stimulation intensity in real-time based on a patient's neural signals.

WHY IT MATTERS

Traditional DBS provides continuous electrical stimulation to targeted brain regions, requiring periodic manual adjustments by clinicians and patients. However, Medtronic's Adaptive DBS system utilizes real-time brain sensing to automatically adjust the stimulation based on the patient's needs. This personalized approach aims to improve symptom control while reducing side effects like speech and cognitive impairments. Clinical trials have shown that adaptive DBS can:

- **Enhance movement control by optimizing stimulation in response to physiological feedback.**
- **Reduce power consumption, extending device battery life.**

References:

Oehr, C.R., et al., Chronic adaptive deep brain stimulation versus conventional stimulation in Parkinson's disease: a blinded randomized feasibility trial. *Nat Med*, 2024, 30(11): p. 3345-3356.

Neumann, W.J., et al., Adaptive Deep Brain Stimulation: From Experimental Evidence Toward Practical Implementation. *Mov Disord*, 2023, 38(6): p. 937-948.



Interview with **Dr. Asish Gulati**



Interview with

Dr. Asish Gulati

Please provide a brief overview of your specialty.

I specialize in neurology at GW and serve as the Associate Program Director of the Vascular Neurology Fellowship. My primary focus is stroke, which includes ischemic stroke, caused by a blockage in blood flow to the brain, and hemorrhagic stroke, which results from arterial rupture leading to bleeding in the brain.

Describe the work being done at the stroke center on both the inpatient and outpatient sides.

On the inpatient side, we manage patients in the acute phase of stroke. This includes individuals presenting with symptoms such as sudden-onset numbness or weakness on one side, speech difficulties, facial drooping, or sudden dizziness and balance issues.

When patients arrive at the emergency department with stroke symptoms, a dedicated stroke team is activated. If I am on-site, I respond alongside the residents. We assess the patient and conduct imaging to determine if they are eligible for clot-dissolving medication. At our facility, we primarily use Tenecteplase (TNK). If the imaging reveals a significant blockage, we may proceed with an interventional procedure, such as thrombectomy, to physically remove the clot using a catheter. Once stabilized, patients undergo further evaluation to determine the cause of their stroke and develop strategies for prevention.

On the outpatient side, we follow up with patients to ensure they are on the appropriate medications, receiving necessary rehabilitation, and managing risk factors effectively. We also evaluate new patients with suspected stroke-related symptoms or incidental findings on imaging. We have a specialized multidisciplinary clinic in collaboration with Dr. Saleem Abdulrauf that focuses on moyamoya disease, a condition involving narrowing of the brain's arteries. In these cases, we assess whether patients would benefit from surgical bypass to improve blood flow.

While inpatient care is fast-paced and focused on rapid decision-making, outpatient care allows us to provide longitudinal follow-up, ensuring that patients receive ongoing support in their recovery and stroke prevention.

One of my research interests is examining stroke risk factors in different communities within the D.C. area. We recently received IRB approval to investigate disparities in stroke incidence and outcomes based on demographic and socioeconomic factors. The goal is to identify patterns and improve targeted prevention efforts.



Interview with

Dr. Asish Gulati

The field of stroke treatment has evolved rapidly. What are some key advancements?

Absolutely. The first major clinical trial for stroke treatment involving thrombolytic therapy (tPA) was in 1995. In the past 30 years, we have made significant progress. One of the biggest breakthroughs was in 2018 with trials like DAWN and DEFUSE 3, which expanded the treatment window for mechanical thrombectomy to 24 hours in select patients.

We have also seen advancements in thrombolytic agents. While alteplase (tPA) has been the standard, tenecteplase (TNK) has shown higher clot affinity and is increasingly used in acute stroke management. Just recently, I had a patient with a basilar artery occlusion who responded remarkably well to TNK without needing thrombectomy.

Ongoing research continues to refine stroke treatment. Large core infarct trials are exploring whether patients with extensive strokes could still benefit from clot removal. Studies like TIMELESS are investigating whether thrombolytics can be administered beyond the standard 4.5-hour window based on advanced imaging criteria.

What role do emerging technologies, particularly AI, play in stroke care?

AI is increasingly integrated into stroke care, particularly in imaging analysis. At GW, we use RAPID software, which employs AI to assist in detecting large vessel occlusions and intracranial hemorrhages. While it is not yet perfect and sometimes over- or under-calls findings, it provides a useful early assessment that helps prioritize cases. As AI technology improves, we anticipate even greater precision in stroke detection and management.

What distinguishes the GW's stroke program?

One of our key strengths is the integration of inpatient rehabilitation within our neurology service. Our collaboration with the physical medicine and rehabilitation team facilitates a seamless transition to inpatient rehab, which is crucial for optimizing recovery.

Another advantage is our cutting-edge interventional radiology equipment, which will be upgraded in the coming weeks. This will enhance our ability to perform high-quality diagnostic angiograms and thrombectomies, ensuring that patients receive state-of-the-art care.

On the outpatient side, we have a strong focus on post-stroke rehabilitation, including access to Botox therapy for spasticity management. Our multidisciplinary approach, such as the specialized moyamoya clinic, also sets us apart, allowing for comprehensive care tailored to complex vascular disorders.

Additionally, the collegial environment at GW makes interdisciplinary collaboration seamless. Whether consulting with cardiology, hematology, or rheumatology, our ability to work closely across specialties enhances patient outcomes.



Interview with

Dr. Asish Gulati

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

I've been at GW for about a year and a half. What I appreciate most is the collegial atmosphere. As a new attending, it has been invaluable to have approachable colleagues who are always willing to collaborate and share insights. The support from administration in fostering professional growth has also been instrumental in helping me establish my career.

Is there any message you'd like to share with our readers?

The most important takeaway is recognizing the signs of stroke and seeking immediate medical attention. The acronym BE FAST is a helpful guide:

- B for Balance (sudden loss of balance)
- E for Eyes (vision changes)
- F for Face (facial drooping)
- A for Arm (sudden weakness)
- S for Speech (difficulty speaking)
- T for Time (call 911 immediately)

Many people delay seeking care, thinking symptoms will resolve on their own. However, stroke treatment is time-sensitive, and the sooner we intervene, the better the outcomes. With the advancements we have today, stroke is no longer an untreatable condition, there are effective therapies that can significantly improve recovery.



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



Connect with us



Thank you

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