



# Miller School Neurologist Points to Wide Disparities in Stroke Interventions Highlighted in Global Study

A new global study shows that greater use of interventional procedures to remove large brain blood clots causing stroke paralysis could potentially benefit millions of patients a year, according to Dileep R. Yavagal, M.D., professor of clinical neurology and neurosurgery at the University of Miami Miller School of Medicine.



Dileep R. Yavagal, M.D.



Dr. Yavagal was the corresponding author of a new analysis, “Mechanical Thrombectomy Global Access For Stroke (MT-GLASS): A Mission Thrombectomy (MT-2020 Plus) Study,” published March 8 in the journal *Circulation* with 36 co-authors from U.S. and international academic institutions. He noted that the study lays the foundation for quantifying the significant gaps and disparities in access to thrombectomies on global and national levels.

Acute ischemic strokes caused by arterial blood clots account for approximately half of the 5.5 million global stroke deaths each year. With smaller ischemic strokes, “clot-busting” medications can restore normal blood flow to the brain when administered rapidly. But in patients with highly dangerous large vessel occlusions (LVOs), mechanical thrombectomies, which use interventional catheters and stents to remove the clot, can provide much better outcomes, Dr. Yavagal said.

## Uneven Distribution of Resources

“Thrombectomy procedures can be highly effective in patients with large blockages,” said Dr. Yavagal, who is also director of interventional neurology, co-director of endovascular neurosurgery, and director of the Miller School’s neurological stem cell platform. “However, the resources needed for these procedures – including equipment, training and community organizational support, also known as stroke systems of care – are unevenly distributed around the world.”

To determine the availability of mechanical thrombectomies for patients in different regions, the study’s authors conducted a survey of 75 countries on six continents through the global network of Mission Thrombectomy 2020 Plus – a global



initiative of the Society of Vascular and Interventional Neurology that was founded by Dr. Yavagal in 2016. “I was inspired by the late Dr. Ralph Sacco, a leading Miller School neurologist whose work led to the formation of the Florida Stroke Registry,” Dr. Yavagal said. “Having adequate data is crucial for making care-related decisions on a regional, national and global basis.”

The initiative takes a public health approach on a global scale to identify local and regional needs, and intervene to accelerate access to emergency stroke care.

## **Disparities Based on Income Levels**

The Mission Thrombectomy 2020 Plus survey found that mechanical thrombectomies were only available to 2.8% of ischemic stroke patients worldwide in 2019, with severe disparities based on income levels among different countries. The main determinants of access were a country’s per-capita gross national income, the availability of qualified stroke centers and operators, and the presence of regional protocols to bypass hospitals that don’t perform thrombectomy during pre-hospital transport.

Dr. Yavagal added that the inadequate use of available stroke care resources was evident in the lower volumes of procedures performed in low- and middle-income countries compared to high-income countries. Underutilization could be caused by delays in reaching a stroke center that provides mechanical thrombectomy procedures, lack of public awareness about stroke and stroke centers, lack of physician training, and lack of prehospital ambulance system and EMS training.

“Global cooperation is needed to rapidly increase access to



this lifesaving and disability-reversing treatment,” the study’s authors wrote, noting the importance of stroke center certification by national or international bodies. “All stakeholders, including health care providers, patients, caregivers, hospitals, device manufacturers, regulatory agencies, health policymakers, and payers must come together to optimize stroke systems of care and decrease access disparities.”

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