

Case Western & University Hospitals Researchers Validate ALGO Pump Technology in Independent Stroke Thrombectomy Study

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/EINPresswire.com/ -- Researchers at Case Western

Reserve University and University Hospitals (UH) have completed an independent, non-industry-funded pre-clinical study evaluating the ALGO Smart Pump, a novel aspiration technology for ischemic stroke thrombectomy. Published in *Interventional Neuroradiology*, the study assessed

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Dr. Yin Hu

the pump’s performance in physiologically realistic stroke conditions and found it to be highly effective in achieving clot removal with minimal distal embolization.

The study was conceived and conducted solely by UH neurointerventionalists without involvement from the device manufacturer. Using a high-pressure thrombectomy model simulating elevated systolic blood pressures (160 mmHg) typical of acute ischemic stroke patients, the team tested five commonly used aspiration catheters paired with ALGO’s Adaptive Pulsatile Aspiration (APA™) mode, a

non-continuous, cyclic aspiration method.

Across 150 thrombectomy trials, the ALGO Smart Pump achieved first-pass clot removal in 100% of cases. Complete clot ingestion occurred in over 65% of trials, while distal embolization was observed in only 3.3%.

The study directly addressed a longstanding concern in neurointervention: that cyclic aspiration might increase the risk of clot fragmentation and distal emboli. Contrary to this concern, the data suggest that ALGO’s cyclic aspiration mechanism improves clot capture and reduces clot lodging at the catheter tip, potentially offering an advantage over conventional continuous suction systems.

“This study was designed to address critical questions about the safety and effectiveness of cyclic aspiration,” said Dr. Yin Hu, senior author and Director of Endovascular Neurosurgery at University Hospitals. “Under high-pressure stroke conditions, the ALGO pump demonstrated consistent clot removal with low embolic complications, suggesting a potential benefit over

traditional static aspiration systems.”

The results highlight the value of physiologically relevant, unbiased modeling in the pre-clinical evaluation of neurovascular devices and support further clinical investigation of the ALGO Smart Pump in real-world stroke care.

Link to the publication: [Interventional Neuroradiology](#), (INR, June 2025)

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