

# RAPID<sup>AI</sup>

## After his patient was delayed in traffic for hours, a physician was able to make a fast life-saving decision with help from RapidAI

It had been hours since Dr. Raghid Kikano gave the order to transfer a stroke patient to the Lebanese American University Medical Center-Rizk Hospital in Beirut, and there was still no sign of when the ambulance would arrive. The satellite hospital where the patient had been admitted, was no more than 15 minutes away by car in normal conditions, but this was January 2020. Only months earlier, the October Revolution had ignited a series of protests throughout Lebanon, and in the capital city of Beirut, continued civil unrest was still making road closures commonplace and travel times wildly unpredictable. With the window of treatment closing, Kikano, an interventional radiologist, was worried that the patient would be past the point for treatment.

The ambulance had been on the road for four and a half hours before arriving with the patient at LAU Medical Center at 4:30 pm. She was a 62-year-old woman with a history of atrial fibrillation who had stopped taking her blood-thinning medication about two weeks before her stroke. The woman had been found by her daughter in their home at around 10 am and was taken to the satellite hospital. There, a non-contrast CT (NCCT) scan revealed a dense MCA sign, indicating an occlusion of the middle cerebral artery, and prompted Kikano to order the patient transferred to the comprehensive stroke center for treatment. "These are typically the kinds of stroke that benefit enormously from mechanical thrombectomy and don't respond well to just drugs or blood thinners like tPA," he explained.

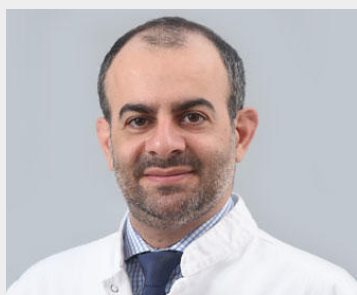


Lebanese American University Medical Center-Rizk Hospital in Beirut, home of the first comprehensive stroke center in Lebanon

At LAU Medical Center, the patient's symptoms included aphasia and lower and upper extremity weakness on her left side. Her National Institutes of Health Stroke Scale (NIHSS) score was 22, signaling a severe stroke. Kikano ordered CT angiography and CT perfusion scans but acknowledged the possibility that too much time may have passed for a thrombectomy to be helpful. "After six and a half or seven hours, there is concern that more harm or damage can be done to the patient than good through intervention," Kikano explained.

Fortunately, the hospital is equipped with RapidAI imaging technology, which uses artificial intelligence to create real-time views of brain perfusion from a patient's scans. Within minutes, the software provided Kikano with a clear map of how the patient's stroke was progressing. He was pleased to see that in this particular case, it was progressing slowly. The patient had a good system of collateral blood vessels that were helping to provide oxygen to the brain, and there was a large amount of tissue that could potentially be saved from infarction if the clot blocking blood flow through the main artery was removed.

Kikano began the procedure around 5:30 pm, and within half an hour, the clot had been removed and blood flow restored. Within two days, the patient's NIHSS score had dropped to 2, and she was discharged from the hospital three days after having her stroke. Her recovery was so quick that she was able to attend her daughter's wedding three weeks later. "I was really happy. She texted me on WhatsApp thanking us for allowing her to be at her daughter's wedding. It was really touching," Kikano said.



"The Rapid [platform] is our work horse. None of our patients come to the hospital without getting scans processed by Rapid. The software allows me to select the patients who would benefit from treatment from the patients unlikely to benefit from treatment, and by doing so, you increase the chances of success enormously. It's like going from being able to help 3 patients out of 10 to helping 8 patients out of 10. I can't imagine working without it. It's like my best friend in some cases."

**Raghid Kikano, MD**

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## Stroke Timeline



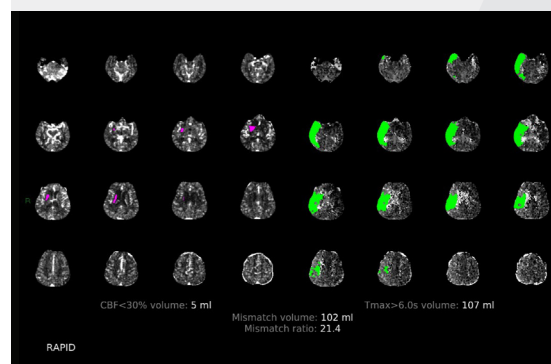
RapidAI gives stroke teams and their patients more of what they desperately need: time. By notifying the entire stroke care team—doctors, emergency personnel and logistics—at the earliest possible moment and giving them the patient images and information they need to make the best possible decisions, they can save lives.

## About RapidAI

RapidAI is the worldwide leader in advanced imaging for stroke. Based on intelligence gained over 1,000,000 scans from more than 1,600 hospitals in over 50 countries, the Rapid platform uses artificial intelligence to create high quality, advanced images from non-contrast CT, CT angiography, CT perfusion, and MRI diffusion and perfusion scans. The Rapid imaging platform includes Rapid ICH, Rapid ASPECTS, Rapid CTA, Rapid LVO, Rapid CTP, and Rapid MRI. RapidAI also offers SurgicalPreview®, a comprehensive aneurysm management platform. RapidAI empowers clinicians to make faster, more accurate diagnostic and treatment decisions for stroke and aneurysm patients using clinically-proven, data-driven technology. With our validated, trusted products developed by medical experts, clinicians worldwide are improving patient care and outcomes every day. For more information, visit [RapidAI.com](https://www.rapidai.com).

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The patient's Rapid CTP mismatch map provided Dr. Kikano with a comparison between brain regions with substantial reductions in cerebral blood flow (pink) and regions with significant hypoperfusion (green).

## If you know how to do it, it doesn't mean that you have to do it.

When deciding how to treat a stroke patient, Dr. Raghid Kikano often remembers something a former mentor told him: If you know how to do it, it doesn't mean that you have to do it. "I never forgot that sentence," said the interventional radiologist, and it's something he applies to his practice at Lebanese American University Medical Center-Rizk Hospital.

"When a patient has a big artery that is occluded, it doesn't mean that we have to [remove the clot] if the patient will not benefit from opening the artery. We might hurt them," Kikano said.

To help identify patients suitable for thrombectomy, Kikano relies on the Rapid stroke imaging platform, which has been clinically proven to aid in the selection of patients for acute stroke therapy. "The software allows me to select the patients who would benefit from treatment from the patients unlikely to benefit from treatment, and by doing so, you increase the chances of success enormously." In a country like Lebanon where new techniques like thrombectomy are typically not covered by medical insurance, expense of the procedure also adds another reason to act with certainty. "It's an expensive procedure. The patient might end up paying \$10,000 out of pocket," said Kikano who often shares the color-coded RapidAI results with a patient's family members as a way to explain whether intervention would be beneficial. "I always show them the RapidAI maps. ... It really gives me the confidence to say definitively whether we can help the patient and answer specific questions."