

# PHILIPS

## Ultrasound

### Lumify



## Monitoring of dengue complications using Lumify

A case study by **Dr Rahajeng Tunjungputri**

Dr Rahajeng Tunjungputri, who is working as a doctor in Semarang, Indonesia, currently uses the Philips Lumify for detecting severe dengue in Indonesia.

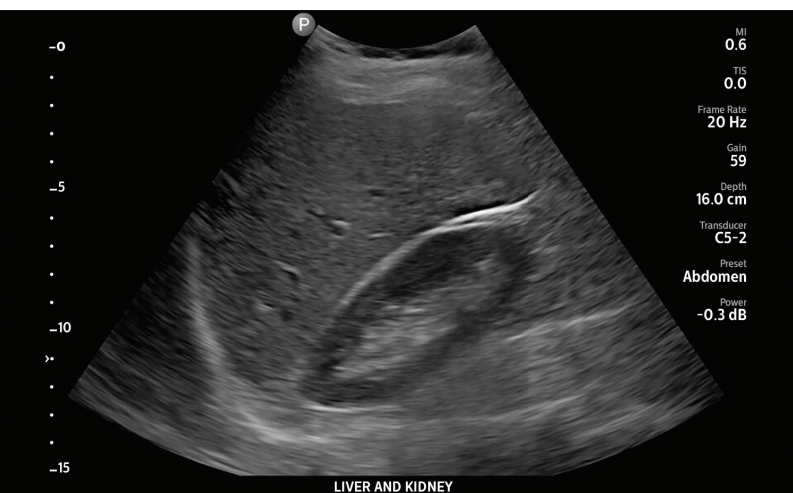


“Dengue is worldwide the most common arboviral infection with an estimated number of nearly 400 million cases yearly. It is also an important public health problem in Indonesia. During the rainy season, health facilities treat many people with suspected dengue.”

Dengue is mostly a mild disease, but sometimes severe complications occur. The most important complication is a transient vascular leakage syndrome. Hereby, plasma leaks out from blood vessels to the surrounding tissue. Patients can develop pleural fluid or ascites, but if the plasma leakage is severe, hypovolemic shock can occur. This has a high mortality when not treated properly. Severe plasma leakage usually occurs when patients are several days ill. A major challenge for clinicians is the fact that occurrence of severe plasma leakage cannot be reliably predicted.

Dr Tunjungputri says, “In clinical practice, we rely on clinical features and monitoring of the platelet count and hematocrit value. The hematocrit is the percentage volume of red blood cells and this increases during plasma leakage. However, the hematocrit is often not sensitive enough.”

An alternative method to monitor plasma leakage is ultrasonography. Hereby you look for thickening of the gall bladder wall, pleural fluid and ascites. Scientific studies have shown that daily ultrasonography better predicts the development of severe dengue than hematocrit. Dr Tunjungputri shares, “Unfortunately, ultrasonography is not routinely performed nowadays in dengue patients in Indonesia due to financial and logistical limitations.”



Abdominal ultrasound scan using Lumify

Dr Tunjungputri is currently performing a clinical trial in dengue patients in Semarang and Jepara, Central Java, Indonesia, together with researchers from the Radboud university medical center in Nijmegen, the Netherlands. The Dutch researchers have previously shown that serial bedside ultrasonography is helpful in identifying patients at risk for development of severe dengue. “We use the Philips Lumify to check all patients daily for early signs of plasma leakage,” says Dr Tunjungputri. The study team received a short training from a certified radiologist. “Our first experiences with the Lumify are positive. The ultrasound is easy to use and images are of high quality. But even beyond using it for research purposes, we are excited to introduce this technique for routine use in clinical environments.”

“In a country like Indonesia, where clinicians are often overwhelmed by the number of patients and where decisions must be made promptly, the availability of portable, bedside ultrasound device can assist greatly in clinical decision making and patient management.”

