

Research Finds Lung Ultrasound Best In COVID Pneumonia Screening

Ultrasound scans found better results than x-rays in preliminary detection of atypical pneumonia in possible COVID patients, researchers reported recently.

By studying possible COVID-19 patients in the emergency department, ultrasound had increased sensitivity, at 97.6%, versus 69.9% for x-ray, according to Ryan C. Gibbons, MD, of Temple University in Philadelphia. He presented this significant information at the virtual American College of Emergency Physicians' meeting.

Gibbons advocated for an ultrasound first approach to screening of this kind. Due to the emergency room's heightened stress, he found it a "valuable tool to quickly separate the lower-risk from higher-risk patients and move those lower-risk patients out," he told MedPage Today.

But there is even more reason to do ultrasounds over x-rays. Ultrasounds are more easily performed at patient's bedsides than handheld devices and are far more convenient than x-rays. Physicians can use "a handheld probe that plugs into an iPad. You can be in and out of a room in under a few minutes and sanitization is very quick. And we're not transporting a patient to and from x-ray or having to wait for a portable x-ray machine," he said.

Since COVID-19, radiologists have seen a spike of patients in the ED and less at outpatient clinics. Finding a solution to make their time manageable is a significant feat. "Our initial hypothesis based on previous data is that ultrasound is more sensitive, and that's what we found," Gibbons said. While specificity is "sacrificed," ultrasound positive findings

serve as warning signs that trigger further testing for confirmation, he said.

Laith R. Sultan, MD, MPH, of the department of radiology at the University of Pennsylvania also validated Gibbons finding with further studies, finding further accuracy. "Common findings with ultrasound in COVID-19 patients include thickened irregular pleural lines, vertical artifact (B-lines) which represent inflammatory changes in the lung, and absence of normal horizontal artifacts (A-lines)," Sultan explained.

X-ray findings may not detect signs earlier in the process of inflammation that can appear via ultrasound scans. Sultan claims x-ray findings "are more limited to opacities seen in the affected area".

But naturally, COVID brings a new level of conflict for pneumonia cases. Sultan warned that "findings from COVID-19 pneumonia can have similarities with findings from other viral causes of pneumonia. In our article, we showed that some findings are very specific to COVID-19, e.g., the skip area seen in pleural lines and B-lines and absence of blood flow on Doppler. These findings can be related to the acute inflammatory process that take place in COVID-19."

As experts caution COVID cases will triple come January, this research and its development will certainly come into play.