Artificial intelligence model can detect COVID-19 on chest CT

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(HealthDay)—Artificial intelligence allows coronavirus disease 2019 (COVID-19) to be detected and differentiated from community-acquired pneumonia (CAP) on chest computed tomography (CT), according to a study published online March 19 in *Radiology*.

Lin Li, from Wuhan Huangpi People's Hospital in China, and colleagues developed a fully automatic framework to detect COVID-19 using chest CT in a retrospective and multicenter study. To extract visual features from volumetric chest CT exams, a deep learning model COVID-19 detection neural network was developed. To test the robustness of the model, CAP and other nonpneumonia CT exams were included.

The dataset included 4,356 chest CT exams from 3,322 patients obtained from six hospitals between August 2016 and February 2020. The researchers found that in the independent test set, per-exam sensitivity and specificity for detecting COVID-19 were 90 and 96 percent, respectively, with an area under the receiver operating characteristic curve (AUC) of 0.96. For detecting CAP in the independent testing set, the per-exam sensitivity and specificity were 87 and 92 percent, respectively, with an AUC of 0.95.

"This study focuses on whether one exam is COVID-19 or not, but has not addressed categorizing the disease into different severities," the authors write. "As a next step, it would be important to not only predict the presence of COVID-19, but also the severity degree to further help monitor and treat patients."

More information: Abstract/Full Text

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