

3 August 2020

## **BRIEF19**

*A daily review of covid-19 research and policy.*

### **RESEARCH BRIEFING**

#### **Do patients with covid-19 have increased risk for blood clots in the lung?**

In an article [published](#) in *Academic Emergency Medicine*, researchers studied the association between covid-19 and the presence of abnormal and potentially dangerous blood clots in the lungs (“pulmonary embolisms”). This topic has been of particular interest to researchers, given previous reports that SARS-CoV-2 stimulates blood clot formation (“hypercoagulable” states), as many serious infections can.

This study was a large, multicenter, retrospective study across 26 emergency departments (ED) from 6 countries. Patients were included if they had undergone computed tomographic pulmonary angiograms (CT scans of the chest with intravenous contrast injected precisely so that radiologists may look for clotted blood vessels, abbreviated as CTPA). The primary outcome the researchers assessed was incidence of pulmonary embolisms on CTPA during the peak months of the early pandemic, as well as any association with patients diagnosed with covid-19 either by the presence of telltale signs of covid-19 pneumonia in the lungs on the CT scans or by regular SARS-CoV-2 swabs (RT-PCR tests which detect the viral genetic material).

A total of 3,523 patients were included in the study. Of these, 30 percent were found to have covid-19 and 15 percent were diagnosed with a pulmonary embolism. The incidence of pulmonary embolisms among patients who had undergone a CTPA was similar in patients diagnosed with and without covid-19 at approximately 15 percent in both groups. After adjusting for known risk factors for developing a pulmonary embolism (i.e. risk factors as described by a validated checklist used by healthcare providers known as the Wells Score), the odds of having a pulmonary embolism in patients who had concurrent covid-19 was not significantly different (odds ratio, 1.01; with a 95 percent chance that the ratio lies between 0.81 and 1.27).

As with all retrospective studies, however, there are several important limitations worth noting. The act of ordering a CT scan on any patient is a “nonrandom event” based not only on known risks for developing pulmonary embolisms, but also on physician “impression,” and individual practice patterns. Additionally, patients were excluded from the analysis if they did not receive a blood test (“d-dimer”) that triages patients into various categories of risk of abnormal blood clot formation, or if the test was done but the results were normal (i.e. the patients were determined to be very low risk.) Finally, this study only applies to patients presenting to emergency departments. The risk of pulmonary embolism may be different in this patient population, some of whom are still at the beginning of their covid-19 illnesses. So these findings may not hold in patients who go on to be hospitalized and who spend substantial time on the wards or in intensive care units, both of which increase the risk of blood clot formation due to the sedentary lifestyle of hospital-based medicine. Nevertheless, and despite its numerous limitations, this study provides some evidence that clinical decision frameworks that healthcare providers relied on in the pre-covid-19 era for assessing risk of pulmonary embolism—such as the Wells Score or other options such as the modified Geneva Score for pulmonary embolism in addition to d-dimer—may still be applicable in guiding the decision to order CT scans for patients during the covid-19 pandemic who are under consideration for this particular condition.

—Joshua Niforatos, MD

## **POLICY BRIEFING**

### **Fourth Coronavirus relief bill plods forward. Will Congress fund testing and contact tracing? Unemployment benefits also hang in the balance.**

Last week the US Senate passed the Health, Economic Assistance, Liability Protection, and Schools (HEALS) Act, intended to be the fourth relief package in the ongoing coronavirus pandemic. Aside from the unrelated components of the bill, like \$1.75 billion for a new [FBI building](#) or almost \$30 billion in military vehicle spending, there are eight separate bills rolled into this round with funds aimed at everything from supporting employers to reopening schools. Let's go through some of the target of the relief.

-For healthcare entities: additional funding has been provided to the Provider Relief Fund, partial liability coverage for medical providers, extension of telehealth reimbursement through 2021, extension of the repayment timeline for the Medicare Accelerated and Advanced Payment Program to 270 days.

-For businesses: expanding the Payment Protection Program to 501(c)(6), opportunities for second loans, liability protections for employers.

-For Federal programs: \$16 billion for contact tracing and testing supplies, provisions for National Stockpile supplies to be produced domestically whenever possible.

Other provisions include guidance for states as well as Indian tribes on how assts of the Strategic National Stockpile might be obtained and funding for epidemiologic efforts including funding for the modernizing of how data on infectious diseases are collected. Additional funding may also go to the Centers for Disease Control and Prevention, The National Institutes of Health, and to the Substance Abuse and Mental Health Services Administration (which regulates opioid treatment programs).

While these allocations merely scratch the [surface](#) of the bill's components, no consensus was reached between the House and Senate by Friday, allowing many of the existing protections under current relief packages, including \$600 weekly unemployment benefits, to [expire](#) without a replacement. While Congress was set to begin their August recess, leaders have said they will remain in session until a vote is taken on the proposed aid. *Various*

—Joshua Lesko, MD

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*Brief19* is a daily executive summary of covid-19-related medical research, news, and public policy. It was founded and created by frontline emergency medicine physicians with expertise in medical research critique, health policy, and public policy.