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## **Combination of Two Over-the-Counter Drugs Reduces COVID-19 Inpatient Death Rate**

Birmingham, Ala. – Treating severe and critical hospitalized COVID-19 patients using two common over-the-counter (OTC) drugs reduced the inpatient death rates down to 15.5%, compared to published inpatient fatality rates of 21 or 23.6% in New York City and Louisiana. They also reduced the intubation rate down to only 16.4% in these high acuity inpatients. The research manuscript has been submitted for peer review for publication; a preprint is available - https://www.medrxiv.org/content/10.1101/2020.06.30.20137752v1.

The drug combination included an antihistamine and an antacid, commonly found on shelves, and safely used for decades. These two medications, cetirizine (Zyrtec) and famotidine (Pepcid), work to block H1 and H2 histamine receptors, producing a one-two punch against inflammation and presumably blocking the cytokine storm, according to Reed Hogan, II MD, of GI Associates in Jackson, Mississippi. Hogan initiated this collaboration with pulmonologists from Jackson Pulmonary Associates. "I wanted to see if we blunt the cytokine storm with medications anyone in the world can find and afford," said Hogan.

The physician-sponsored cohort study analyzed a large group of 110 severe and critical inpatients. The ages skewed towards 60-plus in age. Based in Mississippi, where general health is often compromised due to socio-economic issues, these very ill patients averaged a high 2.7 in co-morbidities, most notably hypertension, obesity, and diabetes. Of those patients, 59 percent were African-American and 59 percent female.

While many of the other current medical treatments for COVID-19 require expensive drugs or biologics, this protocol uses affordable drugs already on hospital pharmacy shelves. The savings potential could reduce treatment to less than \$50 in drug costs, a boon for people without health insurance.

"The two OTC drugs are historically safe, inexpensive, and are readily accessible within both affluent and impoverished countries across the globe. Blocking histamine to reduce inflammation in COVID-19 patients is logical," said Thomas P. Dooley, Ph.D. a Birmingham, Ala.-based drug developer and collaborator in the study.

The two histamine-blocking drugs are already approved for other medical indications by the Food and Drug Administration (FDA), therefore physicians may choose to use this new approach off-label. Testing on a larger scale in controlled randomized trials is warranted by these initial favorable results, according to Hogan.

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