Diabetes, Lung Disease and Heart Disease Appear to Raise COVID-19 Risk

This finding, which is in keeping with initial studies out of China and Italy, is preliminary as the CDC continues to gather data.

April 1, 2020 By Benjamin Ryan

An initial analysis of a small subset of more than 120,000 COVID-19 cases reported to the Centers for Disease Control and Prevention (CDC) indicates that people with underlying health conditions, such as diabetes, chronic lung disease and cardiovascular disease, appear to be at higher risk for severe disease associated with the new coronavirus than people without these conditions.

These findings are in keeping with previous studies out of China and Italy, where the coronavirus outbreak first spread especially widely, as well as other sources.

The new coronavirus, known officially as SARS-CoV-2, can cause the potentially fatal disease known as COVID-19. In the majority of cases, COVID-19 cases are mild or asymptomatic. But some cases, especially among seniors, can lead to severe lung inflammation in particular and require hospitalization. People age 85 and older are at the greatest risk.

The CDC's COVID-19 Response Team published findings in the Morbidity and Mortality Weekly Report from a review of the 122,653 laboratory-confirmed COVID-19 cases and 2,112 deaths related to the disease reported to the federal health agency from February 12 through March 28.

The investigators excluded COVID-19 cases among people who returned to the United States from Wuhan, China, where the coronavirus outbreak began, and the Diamond Princess cruise ship, which experienced its own substantial outbreak.

The researchers had at their disposal data on the presence of underlying health conditions among 7,162 (5.8%) of the 122,653 people with COVID-19. Thirty-eight percent of these individuals had at least one underlying health condition or other risk factor. The most common such conditions were diabetes (11%), chronic lung disease (9.2%) and cardiovascular disease (9.0%). These conditions were followed by being immunocompromised (3.7%) and having chronic kidney disease (3.0%). Less than 1% had chronic liver disease.

The study authors did not report any data regarding people living with HIV. Although being immunocompromised is a COVID-19 risk factor, experts say that HIV-positive people who had a

fully suppressed viral load thanks to antiretroviral treatment do not appear to be at greater risk because of their HIV status.

The new analysis included 29 people with cancer. Some cancer chemotherapy can leave patients with a weakened immune system, which early studies of the new coronavirus have indicated is a risk factor for COVID-19.

Out of the 7,162 people, 457 (6.4%) required intensive care unit (ICU) admissions, 1,037 (14%) were hospitalized but not in the ICU and 5,143 (72%) were not hospitalized. Seventy-eight percent of those who wound up in the ICU and 71% of those who were hospitalized but not in the ICU had one or more underlying health condition, compared with just 27% of those who were not hospitalized.

To make up for missing data, the study authors estimated the proportion of people with and without chronic health conditions who fell into the respective three hospitalization categories. They also restricted this particular analysis to those people age 19 and older, given there were few cases among people 18 years old or younger.

An estimated 27% to 30% of people with COVID-19 who had underlying health conditions experienced non-ICU hospitalizations, compared with 7.2% to 7.8% of those without underlying conditions. Between 13% and 15% of those with underlying health conditions experienced an ICU admission, compared with 2.2% to 2.4% of those without such conditions.

Out of the 7,162 COVID-19 cases included in the analysis, there were 184 deaths, all of them among people age 19 and older. A total of 173 of those deaths, or 94%, were among people with at least one underlying health condition.

“These preliminary findings suggest that in the United States, persons with underlying health conditions or other recognized risk factors for severe outcomes from respiratory infections appear to be at a higher risk for severe disease from COVID-19 than are persons without these conditions,” the study authors concluded. “These results are consistent with findings from China and Italy, which suggest that patients with underlying health conditions and risk factors, including, but not limited to, [diabetes], [high blood pressure], COPD [chronic obstructive pulmonary disease], coronary artery disease, cerebrovascular disease, chronic [kidney] disease and smoking, might be at higher risk for severe disease or death from COVID-19.”

The analysis was limited by the small number of cases for which there were sufficient data on underlying health conditions and hospitalizations. The study’s findings may change as more information becomes available.

The CDC authors stressed that they were not able to determine for certain whether, and if so the degree to which, health conditions such as lung disease or cardiovascular disease actually raise the risk of severe outcomes from coronavirus infection.

The investigators noted that many of the conditions identified in the analysis are quite common in

the United States. About 10% of U.S. adults have diabetes; the age-adjusted prevalence of all types of cardiovascular disease (with the exception of high blood pressure without any other form of cardiovascular disease), is about 11%; the age-adjusted prevalence of COPD among adults is 5.9%; and some 7.9% of people of all ages have asthma.

That said, the authors stressed: “The estimated higher prevalence of these conditions among those in this early group of U.S. COVID-19 patients and the potentially higher risk for more severe disease from COVID-19 associated with the presence of underlying conditions highlight the importance of COVID-19 prevention in persons with underlying conditions.”

The study is further limited by numerous other factors. It is not possible to presume, for example, that the 94% of reported COVID-19 cases for which there were insufficient background data had the same proportions of associated underlying health conditions or hospitalizations and ICU admissions as the 5.8% of cases for which there were sufficient data. The analysis also cannot provide information about long-term outcomes from coronavirus infection.

The analysis is also likely biased toward more severe cases of coronavirus infection. Because testing capacity remains limited in the United States, people presenting with symptoms, especially severe ones, are most likely to receive testing for coronavirus.

Lastly, there were few cases of severe COVID-19 reported to the CDC among people with common health conditions, including neurologic disorders, chronic liver disease, current smoking and pregnancy; therefore, no conclusions can be drawn about the risk of COVID-19 among people in these groups.

People with underlying health conditions should strive to protect themselves against coronavirus infection by washing their hands, cleaning and disinfecting surfaces that get touched often and practicing social distancing. This includes remaining at home, avoiding crowds and travel, and refraining from contact with people who are ill.

People who are ill should remain at home except to receive health care services. They should not go in to work and should stay away from others. This recommendation is particularly important for people who work with those who have underlying health conditions or who are otherwise at high risk for COVID-19, including senior citizens.

“Community mitigation strategies, which aim to slow the spread of COVID-19, are important to protect all persons from COVID-19,” the CDC authors stated, referring to the myriad measures—such as shutting down restaurants and ordering most residents to remain at home—that a growing number of states, counties and cities across the country have rolled out in recent weeks. Such measures are especially vital for those with underlying health conditions and other persons at risk for severe COVID-19–associated disease.

To read the CDC report, click here.