

Scientists find why men are more vulnerable to Covid-19

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NEWDELHI: Being male is a significant risk factor for severe illness and death from the coronavirus disease (Covid-19) regardless of age, according to a new study that identified higher concentrations of a key enzyme in men's blood as the reason for the increased risk of death they face compared to women.



Men have higher levels of the angiotensin-converting enzyme 2 (ACE2), a protein in the blood that Sars-CoV2, the virus that causes Covid-19, uses to enter human cells, according to the study published in the European Heart Journal on Monday.

Sars-CoV2 causes infection by using its crown-like spike protein, which gives the virus its name (corona is Latin for crown) to bind to ACE2 on the surface of human cells, from where it invades the air sacs in the lungs, leading to respiratory distress.

ACE2 is also found in the heart, kidneys and tissues lining blood vessels, and there are particularly high levels in the testes, which may partially explain higher ACE2 concentrations in men, according to the study.

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ACE2 is found not only in lungs, but also the heart, kidneys and tissues lining blood vessels, and there are particularly high levels in the testes.

Its regulation in the testes may partially explain higher ACE2 concentrations in men, and why men are more vulnerable to Covid-19, according to the study.

“ACE2 is a receptor on the surface of cells. It binds to the coronavirus and allows it to enter and infect healthy cells after it has been modified by another protein on the surface of the cell, called TMPRSS2. High levels of ACE2 are present in the lungs and, therefore, it is thought to play a crucial role in the progression of lung disorders related to Covid-19,” Dr Adriaan Voors, professor of cardiology, diology at the University Medical Center Groningen in the Netherlands, said in a statement.

For the study, the researchers measured ACE2 concentrations in blood samples taken from 3,720 heart failure patients from 11 European countries and found that ACE2 was much higher in men than in women.

Data from across the world shows that though men and women are equally likely to get infected, severe disease and death is significantly higher in men. Men are 2.4 times more likely to die from Covid-19 than women, found a recent study published in the journal *Frontiers in Public Health* on April 29. This study also listed older age and underlying diseases, such as heart disease, diabetes and respiratory conditions, among others, high number of comorbidities with disease severity and deaths.

Age was comparable between men and women in all data sets.

In China, where Covid-19 originated, men accounted for close to two-thirds (64%) of deaths as compared to women, who accounted for 36% of all deaths.

A similar gender gap in mortality rates has emerged from Italy, Spain, South Korea, France and Germany, with men accounting for 71% of the Covid-19 deaths in Italy.

There were also disproportionately high deaths among men in other coronavirus outbreaks caused by the Middle East Respiratory Syndrome (Mers) and Severe Acute Respiratory Syndrome (Sars), with data from Hong Kong showing deaths among men were 50% higher even though more women got infected.

Older age, hypertension, diachronic obstructive pulmonary disease and heart disease are associated with greater risk of death from Covid-19, according to an analysis six retrospective studies with 22,350 Covid-19 infected patients and 741 cases of death published ... the preprint server for health sciences, medRxiv, on April 11.

“The early explosion of underlying comorbidities such as heart disease, uncontrolled diabetes and lung problems in Indians raises their risk of severe disease and death at younger ages as compared to other countries,” said Dr G Khilnani, chairman of PSRI Institute of Pulmonary and Critical Care, and a member of the Delhi government’s Covid-19 response committee. “That’s why continuing prescription medication for existing conditions is as important as washing hands and wearing masks,” he said.

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