

For the first time scientists have compiled the immune map of Covid-19 patients

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A team of scientists at the University of Melbourne, Australia recently published research showing the anti-Covid-19 ability of the human immune system. Specifically, they have mapped the immune responses that occur in a patient with corona virus infection in the country.

Immune reactions have shown that patients can fight off the virus and recover from infection. This is the first time that a comprehensive study of immune responses helps the human body fight Covid-19, said immunologist Dr. Nguyen Thi Hoang Oanh, one of the new study authors. .

" We have reviewed the entire immune response of this patient based on the knowledge we have accumulated over years of studying immune reactions in influenza patients, " Dr Oanh explained. .

Mapping of immune responses can ultimately help in creating a vaccine against Covid-19. It can also answer the question: Why do some patients die, which immune responses have they missed? And can recovered patients be immune to Covid-19 for life?

Picture 1 of For the first time scientists have compiled the immune map of Covid-19 patients

For the first time scientists have compiled the immune map of Covid-19 patients, many mysteries will be solved.

The new study was conducted at the Peter Doherty Institute of Infection and Immunology (Doherty Institute) - a collaborative facility between the University of Melbourne and the Royal Melbourne Hospital. In particular, scientists tested the blood of a 47-year-old woman returning to Australia from Wuhan, China, one of the first patients infected with Covid-19 in the country.

Blood samples are taken at 4 different times to check for signs of immunity. In particular, scientists have found immune cell populations including ACS antibodies, TFH cells, CD4 + T cells, and CD8 +, IgM and IgG antibodies linked to corona virus.

These immune reactions occur before the patient relieves symptoms, suggesting that the immune mechanism is already working against Covid-19. They may even allow scientists to predict the progression and recovery rate of patients with Covid-19 infection.

" Three days after the patient was hospitalized, we saw a large amount of immune cells [in their blood], often a sign of recovery when people were infected with seasonal flu ," said Dr. Oanh. " That is the basis for us to predict that patients will recover after three days, eventually it became true."



Scientists found immune cell populations including ACS antibodies, TFH cells, CD4 + T cells, and CD8 +, IgM and IgG antibodies bound to corona virus in a patient's blood sample.

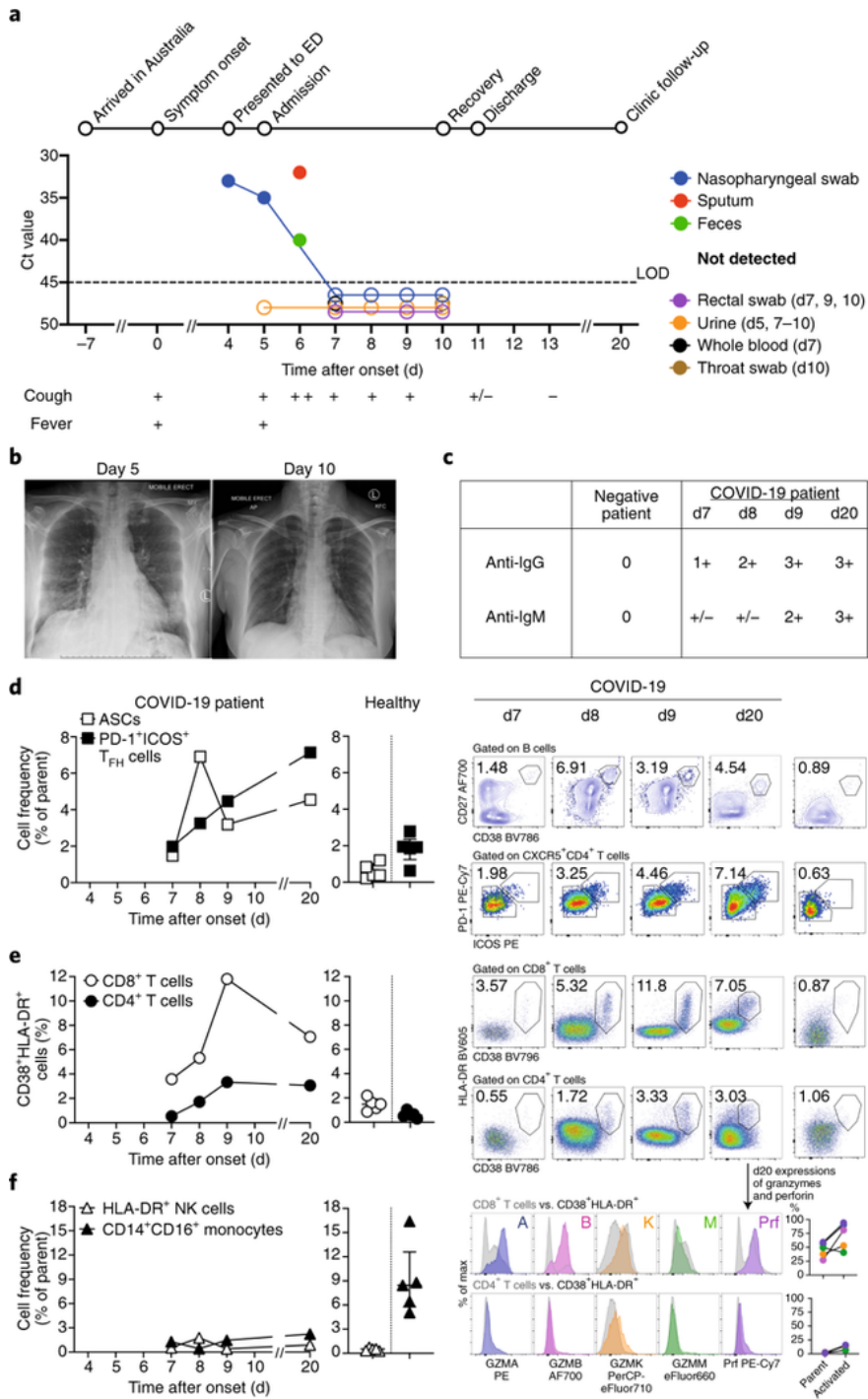
Based on these new findings, the scientists hope they can use blood markers to screen patients, see if any of them are more likely to develop more severe symptoms of Covid. -19.

"Then you can say in advance, this will be a serious case, or this will probably be a lighter case," said Dr. Irani Thevarajan, a member of the research team from the Infectious Hospital. Royal Melbourne Hospital said.

" And then, you can change treatment regimens for patients before they need it . "

The team at the Doherty Institute is led by Professor Kinda Kedzierska of the University of Melbourne, one of the world's leading influenza immunologists. He said:

" Although Covid-19 is a disease caused by an entirely new strain of virus, in a healthy person, the immune response can be strong with a combination of different cell types involved. to clinical recovery, similar to what we see in the flu. "



Immunological reactions recorded by scientists in the patient's body

Dr. Irani Thevarajan emphasized that about 80% of Covid-19 infections only exhibit mild to moderate symptoms. Understanding the immune responses that are helping these people fight the disease is a very important task.

" This study is an incredible step forward in understanding what drives the recovery of Covid-19 patients. People can use our methods to understand immune responses." in many larger Covid-19 cohorts, and find out

what immune responses were missing in fatal cases , "she said.

In addition, mapping immune responses could be a step toward helping scientists get an effective vaccine against Covid-19.

" The information gained from this study will allow us to evaluate any vaccine candidate, because in an ideal world, the vaccine will have to mimic their immune response. me, " said Professor Kinda Kedzierska.

The immune response study will also answer an important question: How long will they last? Can people with Covid-19 infection develop lifelong immunity against the disease?

" Now we hope to expand our research across Australia and internationally, to find out why some people die from Covid-19, and build deeper blocks of knowledge. help humanity respond quickly to Covid-19 as well as any other emerging virus in the future, " said Dr. Irani Thevarajan.

"And we hope to do this before the next pandemic comes . "

New research by Australian scientists has been published in the journal Nature Medicine.

Refer to *ABCNews, Doherty*

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