Scientists find how 'nefarious' Ebola disables immune response

LONDON

SCIENTISTS studying the lethal Ebola virus say they have found how it blocks and disables the body's ability to battle infections in a discovery that should help the search for potential cures and vaccines.

In the largest and deadliest outbreak of the disease yet recorded, Ebola has killed more than 1,000 people in West Africa since March.

A group of scientists in the United States found that Ebola carries a protein called VP24 that interferes with a molecule called interferon, which is vital to the immune response.

"One of the key reasons that Ebola virus is so deadly is because it disrupts the body's immune response to the infection," said Chris Basler of the Icahn School of Medicine at Mount Sinai, New York, who worked on the study.

"Figuring out how VP24 promotes this disruption will suggest new ways to defeat the virus."

The team, lead by Gaya Amarasinghe from Washington University School of Medicine, found that VP24 works by stopping something called "transcription factor STAT1" - which carries interferon's antiviral message - from entering the nucleus of a cell and initiating an immune response.

"This study shows just how nefarious the Ebola virus can be," said Ben Neuman, a virologist at Britain's university of Reading who was not directly involved in this study.

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"Ebola virus carries a small tool that intercepts the cell's distress signals, and when this happens, it disables some of the most useful machinery that our bodies have for fighting Ebola. That leaves the body with only crude defences that are less effective at stopping the virus, and end up causing much of the damage that can eventually lead to death."

Ebola is one of the most deadly diseases known in humans and has a case fatality rate of up to 90 percent. In the current epidemic in West Africa, the virus has infected more than 1,800 people. So far, 1,013 of these have died, the vast majority in Guinea, Liberia and Sierra Leone.

There are no proven treatments or vaccines to prevent Ebola, although several biotech companies and research teams have potential drugs in development.

Amarasingh's team, whose work was published in the journal Cell on Wednesday, said understanding how Ebola disarms immune defences will be crucial in the development of new treatments.

A World Health Organisation-convened panel of experts said on Tuesday that patients infected with Ebola in the West African outbreak could be offered experimental drugs.

The WHO's panel of medical ethicists said several drugs had passed the laboratory and animal study phases of development and should be fast-tracked into clinical trials and made available for compassionate use.