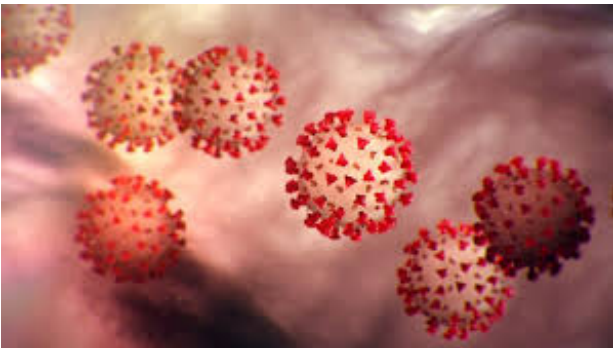




New Strain of Corona Virus

 sanskritias.com/current-affairs/new-strain-of-corona-virus

Context: A mutated corona virus has been found in UK.



Background: A mutated variant of the novel coronavirus has been associated with recent infections in England. Implications mutation means a change in the genetic sequence of the virus. In the case of SARS-CoV-2, which is an RNA virus, a mutation means a change in the sequence in which its molecules are arranged.

A mutated variant of the novel coronavirus SARS-CoV2 has been associated with recent infections in England. The question being raised is whether the mutation could affect people's response to vaccines — and scientists say this is unlikely. The virus has undergone several mutations since it first infected humans, which scientists say is neither unexpected nor a cause for panic.

Mutation: A mutation means a change in the genetic sequence of the virus. In the case of SARS-CoV-2, which is an RNA virus, a mutation means a change in the sequence in which its molecules are arranged. A mutation in an RNA virus often happens when the virus makes a mistake while it is making copies of itself. Only if the mutation results in a significant change in the protein structure can the course of a disease be altered.

New Mutation: UK researchers have identified it as N501Y. The virus carrying this mutation has caused 1,100 new infections in 60 local authority areas. The Consortium for Covid-19 genomics UK (COG-UK) has been tracking the mutation and is likely to provide a critique soon. Health Experts said that it is likely to be a

mutation in the spike protein. There has been a single nucleotide change in one portion of the spike protein, so there would be no bearing on the disease biology or even diagnostics.

Mutation in the spike protein: Researchers opines that in general, there would be more concern about a mutation in the spike region than other regions of the coronavirus genome. It is the coronavirus spike protein that binds to a human protein to initiate the process of infection. So, changes here could possibly affect how the virus behaves in terms of its ability to infect, or cause severe disease, or escape the immune response made by vaccines — but these are theoretical concerns at the moment.

Through the pandemic, over 4,000 mutations have been detected in the spike region. This one appeared initially in Brazil in April, in a small proportion of cases. Since numbers have gone up in the UK, Medical professionals stressed the need to understand why the increase and what it means. At the moment, however, there is no data to indicate severity or faster spread.

People's response to COVID19 vaccines

Several coronavirus vaccines are designed to create antibodies targeting the spike protein. But the vaccines target multiple regions on the spike, while a mutation refers to a change in a single point. So, if there is one mutation, it does not mean vaccines would not work. But changes in the virus will be tracked around the world because there is now unprecedented sequencing capacity and data sharing.

Mutated strain in India: Indian scientists have not seen this variant in India. But they are watching out for mutations as there is constantly rising in the number of cases. For the moment, it is not something to be worried about and is restricted to a few countries.

Scientists at CCMB have analysed several thousand SARS-CoV-2 genomes from India available in the public domain. Scientists said there are no indications so far that the UK mutation has more affinity to the ACE-2 receptor, the human protein with which the virus spike protein binds. Also, it is not proven that there are clinical and immunological consequences.

Conclusion: Mutations will keep happening and the new virus variants will survive or disappear depending upon our immuneresponse and their ability to multiply and transmit. But all SARS-CoV-2 strains are genetically similar to one another, and scientists do not expect these mutations to have a significant impact on their ability to cause more severe disease than what has been observed so far.

Many mutations mean nothing at all, or at least are more successful for reasons we

don't know. For instance, a different strain may be more transmissible, but cause less disease. Bottom line is that we need to monitor, but at present, there is no evidence that the new strain in UK is more transmissible nor severe nor resistant to treatment or vaccination.

Connecting the Article

Question for Prelims : Consider the following statements with reference to the mutation of COVID19:

1. COVID19 vaccines are designed to target the spike protein.
2. Many mutations mean nothing at all, or are more successful.

Which of the Statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Question for Mains : What do you understand by Mutation? Highlight the efforts done by Indian government to control the spread of mutant versions of the COVID19.

Corona Virus