

Transcript Details

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Investigating the Variants of the COVID-19 Virus

Dr. Wilner:

Welcome to *NeuroFrontiers* on ReachMD. I'm Dr. Andrew Wilner, and I recently had the chance to catch up with Dr. Ken Tyler from the University of Colorado School of Medicine about the neurological impacts of COVID-19. Here's a brief snippet of our conversation that focused on the virus variants we're now seeing. Here's Dr. Tyler now.

Dr. Tyler:

Well, pretty much every virus, as it replicates in a host, accumulates mutations in its genome. This is generally because the process of reproducing or replicating the genome isn't perfect and some viruses seem to make many more errors in that process than others, and I have to admit, if you had asked me before this all started where I would have placed the coronaviruses, which is the group that SARS-coronavirus-2 obviously belongs to in this process, I would've said that, you know, they were sort of lower down on the scale meaning they didn't tend to generate compared to some other viruses huge numbers of these errors. Now, obviously if you have errors in your genome and that encodes viral proteins and other things, some of those prevent you from replicating and just are, not compatible with viral replication or viral transmission, but others can have the opposite effect, which is they can actually enhance the replication or transmission of the virus. And here, of course, even though the error frequency is low, we have so many people, you know, literally tens of millions in the United States, alone, infected with the virus that even rare events of course are appearing quite frequently.

And there have been, you know, a number of these variants that have now been identified by mass-sequencing projects in the UK and elsewhere. The overwhelming majority of the, probably, thousands of these that we've seen have no biologic significance, meaning they don't seem to be linked to anything. But there's recently been three, one isolated in the UK, one in South Africa, one in Brazil, that have gotten a lot of attention recently and are kind of considered "variants of concern" is the term they use for them. And the reason is that it looks like clinically, they have an edge both in terms of the efficiency with which they are transmitted and even a slight edge over say another circulating virus operating overtime, can quickly turn one of those viruses into the dominant, circulating species in an area. And that's what's happened, for example in the UK, where the vast majority of isolates are, one of these variants of concern. I think we'd be a little bit less worried if it was just transmission, but I think there have now been some studies that suggest that, at least in some of these cases, it's possible that these viruses may also be associated with a higher frequency of more severe disease, and that of course would be a great concern if it turned out to be true.

Dr. Wilner:

That was Dr. Tyler talking about the variants of the COVID-19 virus. I'm Dr. Andrew Wilner, and to hear my full conversation with Dr. Tyler about the neurological impacts of COVID-19 along with other episodes, visit ReachMD.com/NeuroFrontiers, where you can Be Part of the Knowledge. Thanks for listening!