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New variant gains ground

An offshoot of the delta coronavirus variant, known as AY.4.2, appears to be more transmissible, but not more dangerous, says Michael Le Page

AFTER a period of relative calm in terms of the coronavirus’s evolution, further notable variants are now emerging. An offshoot of the delta variant, known as AY.4.2, appears to be slightly more infectious than the original delta, and could slowly replace it. Several other new variants are being monitored, including one that seems to have evolved undetected in Central Africa before spreading to Europe and beyond.

None of these emerging variants appear to be hugely more infectious or better at dodging immunity than delta, so aren’t expected to trigger major waves of cases around the world. But the bad news is that it may be only a matter of time before such a variant evolves.

“Something with delta-like transmissibility, but which escapes immunity better, is entirely possible, and in fact may even be inevitable eventually,” says Tom Peacock at Imperial College London.

The SARS-CoV-2 coronavirus has been constantly mutating since jumping to people from other animals, but most mutants die out. Only a few new variants have a significant advantage over other competing ones. The alpha variant was around 50 per cent more transmissible than older variants, and caused a wave of new cases as it spread worldwide early this year. Then came delta, which was around 50 per cent more transmissible than alpha, and triggered yet another global surge in cases.

Delta has been outcompeting other variants in countries after country, driving most of them to extinction. The dominance of delta temporarily slowed down the evolution of dangerous new variants by reducing the diversity of the virus – with less genetic diversity, the virus has less opportunity to evolve. But delta itself is now spawning new variants and diversifying.

One of the new variants is AY.4.2. It has been designated a “variant under investigation” by the UK Health Security Agency (UKHSA), which is monitoring it, but hasn’t yet been named a “variant of interest” by the World Health Organization, and so hasn’t been given a name from the Greek alphabet.

AY.4.2 has a couple of extra mutations in the outer spike protein of the virus. The effect of these mutations isn’t clear, but in the UK it has been slowly gaining ground and accounted for 15 per cent of all cases at the beginning of November. It appears to be slightly more infectious than delta.

Fortunately, AY.4.2 appears to be no better at dodging immunity than the original delta. “The vaccines work against all the variants we have seen emerge so far,” says Meaghan Kall at UKHSA.

“There is always the potential for that to change, though.” AY.4.2 doesn’t appear to cause more severe disease, either. In fact, one study in the UK suggests it is slightly less likely to cause symptoms. But more studies are needed to confirm this, say some virologists. “This may likely turn out to have been a ‘false positive’ finding,” tweeted Francois Balloux at University College London.

AY.4.2 has been circulating undetected for quite some time. “The reason that AY.4.2 is being very closely watched is that it may not take very much for one of these sublineages to gain mutations that do make it worse.”

There is also concern about another new variant, called B.1.640, which Peacock helped identify in October. It was first detected in the Republic of the Congo. “This is the first [non-delta variant] we’ve seen growing in a country that has a background of delta,” says Peacock.

What’s striking about B.1.640 is that it isn’t closely related to any other variants and already has a lot of genetic diversity, says Peacock. This suggests it has been circulating undetected for quite some time.

Its properties haven’t yet been studied, but it has a lot of the same mutations as the C.1.2 variant first detected in South Africa, which is very good at dodging immunity, says Peacock. C.1.2 is still around but isn’t gaining ground versus delta.

B.1.640 has now been detected in several European countries and Canada, but this apparently rapid spread might be due to a superspreader event at a school in France rather than any inherent advantage over other variants, says Peacock. It is too early still to tell if it can compete against the delta lineages.

“Pre-delta, this might have been a beast. Post-delta, I don’t really know…” Balloux tweeted.