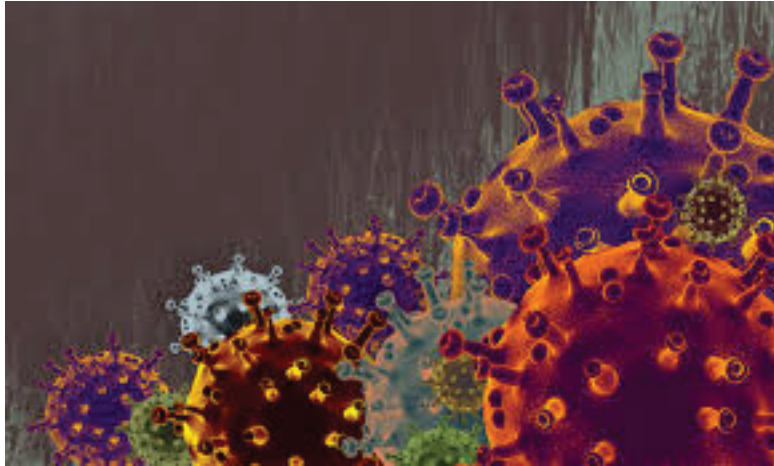


Emerging SARS-CoV-2 Variants In UK Like The B.1.1.7 Strain And The 501.V2 Strain In South Africa And Elsewhere Will Change Course Of COVID-19 Badly

SARS-CoV-2 Variants: Since the beginning of the COVID-19 pandemic, Thailand Medical News has been calling for careful monitoring of SARS-CoV-2 mutation strains emerging. However we were constantly ridiculed by certain so called 'experts' including one from the University College London who is under the payroll of numerous pharmaceutical companies and whose very own colleagues are now revolting against her, as she has always been stating to numerous mainstream media journalists (Mostly also white females with no educational background in medical or health sciences) that the SARS-CoV-2 virus is unlikely to mutate and that if it does, it will only become weaker!



To date none of these are true, for example the emerged D614G virus mutation has been proven in various studies to be more infectious and even dangerous as it can increase disease severity. <https://www.nature.com/articles/s41586-020-2895-3>

<https://www.nature.com/articles/s41467-020-19808-4>

<https://science.sciencemag.org/content/370/6523/1464>

<https://www.sciencedirect.com/science/article/pii/S0092867420308205>

It must be noted that this same female white researcher from University College London has also commented publicly that the D614G strain is not more infectious etc and she also recently made similar comments when the UK Health Secretary Matt Hancock presented to the House Of Commons a report about a new mutated virus strain that was more infectious emerging in UK.

To date, there are already a variety of mutated strains in circulation, some more dangerous as some have evolved to become antibody resistant, some have become drug resistant to certain common antivirals being used and some are new strains are being studied in detail now as it is thought that they have different routes of pathogenesis, resulting in different medical conditions manifesting in the human host.

<https://www.thailandmedical.news/news/new-mutations-exhibiting-sars-cov-2-spike-deletion-h69-v70-that-can-escape-immune-recognition-fast-becoming-prevalent>

<https://www.thailandmedical.news/news/breaking-covid-19-news-antibody-resistant-sars-cov-2-variant-emerges-in-patient-after-convalescent-plasma-therapy>

<https://www.thailandmedical.news/news/covid-19-research-university-of-california-irvine-scientists-discover-distant-residues-that-modulate-conformational-openings-in-sars-cov-2-spike-prote>

<https://www.thailandmedical.news/news/covid-19-research-taiwanese-study-finds-that-sars-cov-2-d614-and-g614-spike-variants-impair-neuronal-synapses,-causing-neurological-manifestations->

<https://www.thailandmedical.news/news/covid-19-latest-immune-evading-mutated-sars-cov-2-strains-a222v-spreads-in-italy-and-europe,-uk-approves-pzifer-s-vaccine,-america-doomed->

<https://www.thailandmedical.news/news/sars-cov-2-strains-that-spread-from-minks-to-humans-had-rbd-mutation-y453f-and-were-resistant-to-at-least-4-neutralizing-mono-clonal-antibodies>

<https://www.thailandmedical.news/news/covid-19-mutations-researchers-warn-that-new-sars-cov-2-mutation-strain-n439k-could-be-more-infectious-and-antibody-resistant-than-wuhan-strain>

<https://www.thailandmedical.news/news/breaking-covid-19-genomics-harvard-led-study-identifies-specific-sars-cov-2-genomic-mutations-associated-with-higher-covid-19-deaths>

There are also studies already showing the high possibility that mutations that can evade current vaccine candidates are already emerging but are being concealed by those with vested interests.

<https://www.thailandmedical.news/news/covid-19-alerts-study-by-university-of-pittsburgh-and-harvard-shows-that-sars-cov-2-spike-deletion-mutations-may-evade-current-vaccine-candidates>

<https://www.thailandmedical.news/news/experts-warn-that-once-vaccines-and-antibodies-are-used-frequently-in-a-population,-more-antibody-resistant-sars-cov-2-virus-strains-would-emerge>

<https://www.thailandmedical.news/news/virus-news-korean-scientist-discover-new-sars-cov-2-mutations-that-may-explain-high-pathogenicity-of-covid-19-and-warn-of-effects-on-vaccines>

The UK Strain B.1.1.7 That Has Multiple Mutations On It

Focusing back on the new emerging strain in UK called B.1.1.7 (also known as VUI-202012/01 Strain) that is taking everybody by storm all of a sudden, unlike most emerging variants that typically have a maximum of two nucleotide changes, the COG-UK (COVID-19 Genomics UK consortium) researchers have found that his new B.1.1.7 strain has accrued 14 mutations which result in a variety of amino acid changes. The COG-UK scientists call this “unprecedented” when compared to the genome data that’s been amassed during the pandemic so far.

Seven of these mutations are on the spike protein itself!, the protein that mediates entry of the virus into human cells. This is a relatively large number of changes compared to the many variants we have in circulation globally.

This new UK variant, or lineage, is defined by an unusual number and combination of mutations. One of these mutations, N501Y, has previously been shown to increase binding of the virus to receptors in our cells. N501Y was first sequenced in a virus in Brazil in April 2020 and is currently associated with a SARS-CoV-2 variant also rising in frequency in South Africa, an independent lineage from B.1.1.7 that is also warranting concern.<https://www.thailandmedical.news/news/coronavirus-news-new-sars-cov-2-variant-with-n501y-mutation-in-receptor-binding-motif-of-the-spike-protein-fast-becoming-prevalent-in-uk>

Importantly the particular deletions identified in the spike protein of B.1.1.7 have appeared in multiple other lineages of the virus at increasing frequency and are also observed in chronic infections where they may alter antigenicity - recognition by immune antibodies. These deletions may also be associated with other mutations in the binding region of the coronavirus spike protein, including those observed in infections among farmed mink and a mutation shown to play a role in the virus's ability to evade the immune system in humans. B.1.1.7 also harbors a truncated ORF8 gene, with deletions in this region previously associated with decreased disease severity.

The functional effect of these mutations and deletions, particularly when in the combination reported in B.1.1.7, are still to be determined.

Backwards tracing using the genetic evidence suggests this variant emerged in September 2020 and then circulated at very low levels in the population until mid-November.

The increase in cases linked to the new variant first came to light in late November when PHE was investigating why infection rates in Kent were not falling despite national restrictions. We then discovered a cluster linked to this variant spreading rapidly into London and Essex.

The new variant is defined by multiple spike protein mutations (deletion 69-70, deletion 144, N501Y, A570D, D614G, P681H, T716I, S982A, D1118H) present as well as mutations in other genomic regions.

It should be noted that many other countries are not doing as much genome sequencing so the data we do have isn't very representative of what's happening around the world and many such strains could be emerging elsewhere.

For this B1.1.7. strain, several of the mutations are in the spike protein. They are mutations we've seen before in other lineages, but not in combination like this. There's mutation N501Y which has been shown to increase the binding of the virus to human and mouse ACE2 which is the receptor the virus uses to enter host cells. There's also P681H which makes a change in the S1/S2 furin cleavage site which has been shown to promote entry of the virus into respiratory epithelial cells and to promote transmission in animal models of COVID-19.

New UK's B.1.1.7 Strain More Infectious

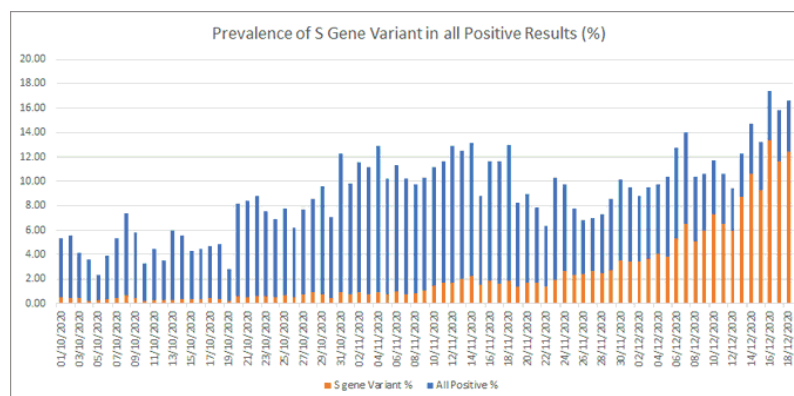
UK's chief science advisor, professor Dr Patrick Vallance, has said the new strain is more 70 % more transmissible than other circulating strains during a recent press conference. <https://khub.net/documents/135939561/338928724/SARS-CoV-2+variant+under+investigation%2C+meeting+minutes.pdf/962e866b-161f-2fd5-1030-32b6ab467896?t=1608470511452>

Although it is known and expected that viruses constantly change through mutation leading to the emergence of new variants, preliminary analysis in the UK suggests that this variant is significantly more transmissible than previously circulating variants, with an estimated potential to increase the reproductive number (R) by 0.4 or greater with an estimated increased transmissibility of up to 70%. This new variant has emerged at a time of the year when there has traditionally been increased family and social mixing. There is no indication at this point of increased infection severity associated with the new variant.

A few cases with the new variant have to date been reported by Denmark and the Netherlands and, according to media reports, in Belgium.

New UK Variant Cannot be Detected By Most Current PCR Tests!

A latest update from the Milton Keynes Lighthouse Lab, one of the UK's Covid-19 testing labs, tweeted that they used a three-gene PCR test and the new variant no longer tests positive for one of the three genes (the S gene). That's allowed them to see the rise in this new variant in the samples they test – shown in orange in his tweet below. Looks like it was pretty steady from October till late November then really started to take off.



This implies that the current PCR test is less effective. That could happen if any of the mutations are in stretches of RNA that the PCR test uses to identify the virus. That would be bad news for countries using the test-trace-isolate strategy to control COVID-19.

Need For More Vigilance

Considering that there is currently a lack of evidence to indicate the extent to which the new virus variant is spread outside the UK, timely efforts to prevent and control its spread are needed, and include the following:

-Public health authorities and laboratories are urged to analyze and sequence virus isolates in a timely manner to identify cases of the new variant. People with an epidemiological link to cases with the new variant or travel history to areas known to be affected should be identified immediately to test, isolate and follow up their contacts in order to stop the spread of the new variant.

-If cases infected with this new SARS-CoV-2 variant or other new SARS-CoV-2 variants of potential concern are identified, countries should notify through the Early Warning and Response System of the European Union.

-The importance of strict adherence to non-pharmaceutical interventions according to national policies needs to be communicated to the public, and in particular guidance on the avoidance of non-essential travel and social activities should be stressed.

-Laboratories should review the PCR performance and drop-out of the S-gene. PCR could be used as an indicator for cases with the new variant for further sequencing and investigation.

-Suspected cases of COVID-19 reinfection should be followed up, closely accompanied by sequencing respective virus isolates from these cases. Similarly, cases with treatment failures using convalescent plasma or monoclonal antibodies should be further studied.

-With the implementation of vaccination, close monitoring of COVID-19-vaccinated individuals needs to be ensured to identify possible vaccination failure and breakthrough infections. Virus isolates from these cases should be sequenced and characterized genetically and antigenically.

New Variant In South Africa As Well.

Interestingly South Africa has identified a new variant of the coronavirus that is driving a second wave of infections, the South African health minister said on Friday, days after Britain said it had also found a new variant of the virus boosting cases.

Minister of Health Zweli Mkhize told Thailand Medical news via a phone interview, "We have convened this public briefing today to announce that a variant of the SARS-COV-2 Virus - currently termed 501.V2 Variant has been identified by our genomics scientists here in South Africa. The evidence that has been collated, therefore, strongly suggests that the current second wave we are experiencing is being driven by this new variant."

The country has recorded the highest number of coronavirus infections in Africa, approaching the 900,000 mark, with over 20,000 related deaths. A resurgence in cases saw the government tighten restrictions on society this week.

The WHO (World Health Organization) said on Friday it was in touch with the South African researchers who identified the new variant.

WHO epidemiologist Dr Maria Van Kerkhove told a news conference in Geneva, "We are working with them with our SARS-COV-2 Virus evolution working group. They are growing the virus in the country and they're working with researchers to determine any changes in the behaviour of the virus itself in terms of transmission."

Health authorities in South Africa said the new variant seemed to spread faster than the previous iteration, but that it was too early to tell its severity and whether current vaccines would work against it.

Professor Dr Tulio de Oliviera, a member of government's genomics consortium in a televised briefing, "In the UK they have also identified a new variant ..there are quite a few similarities between the two lineages,ie there are also a similar number of mutations."

Variants Found In Other Parts Of World As Well.

Variants have been found in North America and well as in India but there seems to be a concerted effort as usual to downplay such news in America while in India there is a lack of funding for researchers to explore detailed studies.

<https://www.thailandmedical.news/news/covid-19-latest-more-antibody-resistant-sars-cov-2-mutated-strains-emerging-and-increasing-in-circulation>

<https://www.thailandmedical.news/news/v483g-mutation-warning-about-growing-prevalence-of-new-sars-cov-2-mutant-strain-v483g-that-is-antibody-resistant-and-even-more-infectious>

<https://www.thailandmedical.news/news/covid-19-mutations-researchers-warn-that-new-sars-cov-2-mutation-strain-n439k-could-be-more-infectious-and-antibody-resistant-than-wuhan-strain>

<https://www.thailandmedical.news/news/breaking-most-of-the-new-aggressive-sars-cov-2-strains-in-america-and-europe-contain-three-mutations-d614g,-p323l-and-c241u-on-a-single-strain>

Vaccine Effectiveness Against New Variants

Currently no one knows as to whether these new mutations will also develop antibody resistant and whether the vaccines will be able to protect against them.

Some individuals with vested interests have come forward to say that the vaccines will not have any problems with the new variants and that is nothing more than fake and non-credible information as no studies have been done yet to assess that and its very premature for anyone to say so.

The probability of the vaccines not being effective against the new strains are very high considering the number of mutations on the spike proteins alone!

Many other species of seasonal coronaviruses exhibit some ability to escape immunity over longer time periods.

The COVID-19 vaccines might need to be updated just like for influenza, to reflect the variants in circulation at the time. This will be the case now already now even before the vaccines are fully rolled out as the kinetics of the virus mutations and circulation is at a rather higher pace.

Extensive genome sequencing, data sharing, and standardized reporting of variants will be vital to inform these efforts.

Variants Going To Change The Course Of COVID-29 Pandemic Badly

Thailand Medical News Predicts that by the time the Third Wave emerges in around June ie roughly about 5 to 6 months after the mass vaccination programmes, we will witness a new level in the COVID-19 pandemic that will prove how wrong researchers and governments have been in not focusing on proper drugs and antivirals and also mutation studies initially in order to curtail the COVID-19 pandemic. The over emphasis on convalescent plasma, antibody treatments and vaccines instead of drug antivirals will eventually pay a high price. We will be elaborating more in our subsequent articles.

Please Help Donate To Sustain This Website And All Our Research Initiatives. <https://www.thailandmedical.news/p/sponsorship>

Wishing all our readers a Merry Christmas and A Great And Happy New Year 2021. But Please Stay Safe.