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## Commentary

# Neutralising antibodies and virus isolation: The keys to control covert COVID-19 spread?

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As the second wave is spreading through Europe, a more infectious SARS-CoV-2 variant has recently been identified in the U.K.. The fight against the COVID-19 pandemic seems to have reached another level as populations go weary of suppression strategies, such as quarantine, isolation, and social distancing [9].

Luckily, new means in the fight against COVID-19 became available as the first vaccines received approval from national health agencies with hope to regain normality [5]. Recent reports from non-mitigated environment have however shown a three quarter attack rate from SARS-CoV-2 [2], meanwhile European serologic studies indicated after the first wave a seroprevalence of ~10–15% [3], underlying the yet long way to go to control the disease.

In this issue of Lancet Regional Health- Europe, an article by Taylor et al. provides several important insights in the fight against COVID-19 [7]. Their study focusses on adults from a military environment, which is a relevant group to ensure any subsidiary engagement in supporting civil institutions and hospitals [1]. To some extent, their findings may apply to other essential workers group with fairly young and healthy populations, such as healthcare professionals, police force, or firefighters, that are crucial for adequate response to the challenges COVID-19 pandemic.

Performed in the closed community and high-density population of a military barracks of London, U.K., Taylor et al. reported a high seroprevalence for SARS-CoV-2 at the start of their observational study, consistent with the fact that, when uncontrolled, the virus can spread swiftly among a particular population. On the other hand,

after implementing appropriate measures, they were able to control the spread of the disease better than in open environment of the surrounding London.

The study found high rates (64%) of asymptomatic SARS-CoV-2 infections among a young and healthy population (median age 28 years old, interquartile range 23–36). Interestingly, the study separately analysed and reported positive nasopharyngeal swab by RT-PCR – the “common” COVID-19 test – and proof of infective virus determined by cytopathic effect [7]. The former being only of proof of presence of viral RNA [4], it is important to realize that only one third of positive SARS-CoV-2 nasopharyngeal swabs by RT-PCR had infective virus.

They also identified individuals simultaneously positive for SARS-CoV-2 nasopharyngeal swabs by RT-PCR and serologic testing for antibodies. However, infective virus was never recovered in nasopharyngeal swab RT-PCR-positive patients that had *neutralising* antibodies, that is, antibodies that don't necessarily require cellular interaction to neutralise the pathogen. Neutralising antibodies may be a key to distinguish individuals with a protective immunity to self and to others, from those yet to eradicate the virus from their body and potential covert spreader of the infection [1].

In the study by Taylor et al., more than 60% of seroconverters had neutralising antibodies. In another recent large scale study, the rate of seroconverters with neutralising antibodies against the spike protein was above 90% [8]. Different rates may be explained by different target antigens (nucleoprotein vs. spike) and by different study populations. Importantly, evidence from other reports show that neutralising antibodies are thought to last for months with low antibody waning [8] and being built irrespective of symptoms [6].

In conclusion, Taylor *et al.* should be complimented for their study. Investigations of young and healthy populations may seem less relevant in the fight against COVID-19. However, a better understanding of how to distinguish asymptomatic covert spreaders from individuals with protective immunity to self and others is crucial to protect the populations at risk.

## List of abbreviations

COVID-19: coronavirus disease

RNA: ribonucleic acid

RT-PCR: reverse transcriptase polymerase chain reaction

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SARS-CoV-2: severe acute respiratory syndrome corona virus  
U.K: United Kingdom

#### Authors contributions

GBM wrote, edited and reviewed this commentary.

#### Declaration of Competing Interest

GBM has nothing to disclose.

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