

Attomarker Long Covid Antibody Spectrum Test (AMVAIS)

Introduction

We have been developing a new test for Long Covid (LC) based on the persistent virus hypothesis. That is, following an infection, a patient does not develop good quality antibodies in sufficient quantity to clear the virus from the body – a sterilising serum. We have observed in more than 40 patients that many Long Covid patients tend to develop poor antibodies to the variant in the infection that triggered the onset of their Long Covid symptoms; others have multiple gaps in their spectra.

We measure the antibody quality and quantity to the spike protein for 11 variants. For example, the antibody immunity spectrum of a Long Covid patient is shown below, Figure 1. The patient was probably exposed to Omicron BA.1 or BA.2, the circulating variants in the UK in March 2022. There is a very low concentration of the antibodies and none are of good quality.

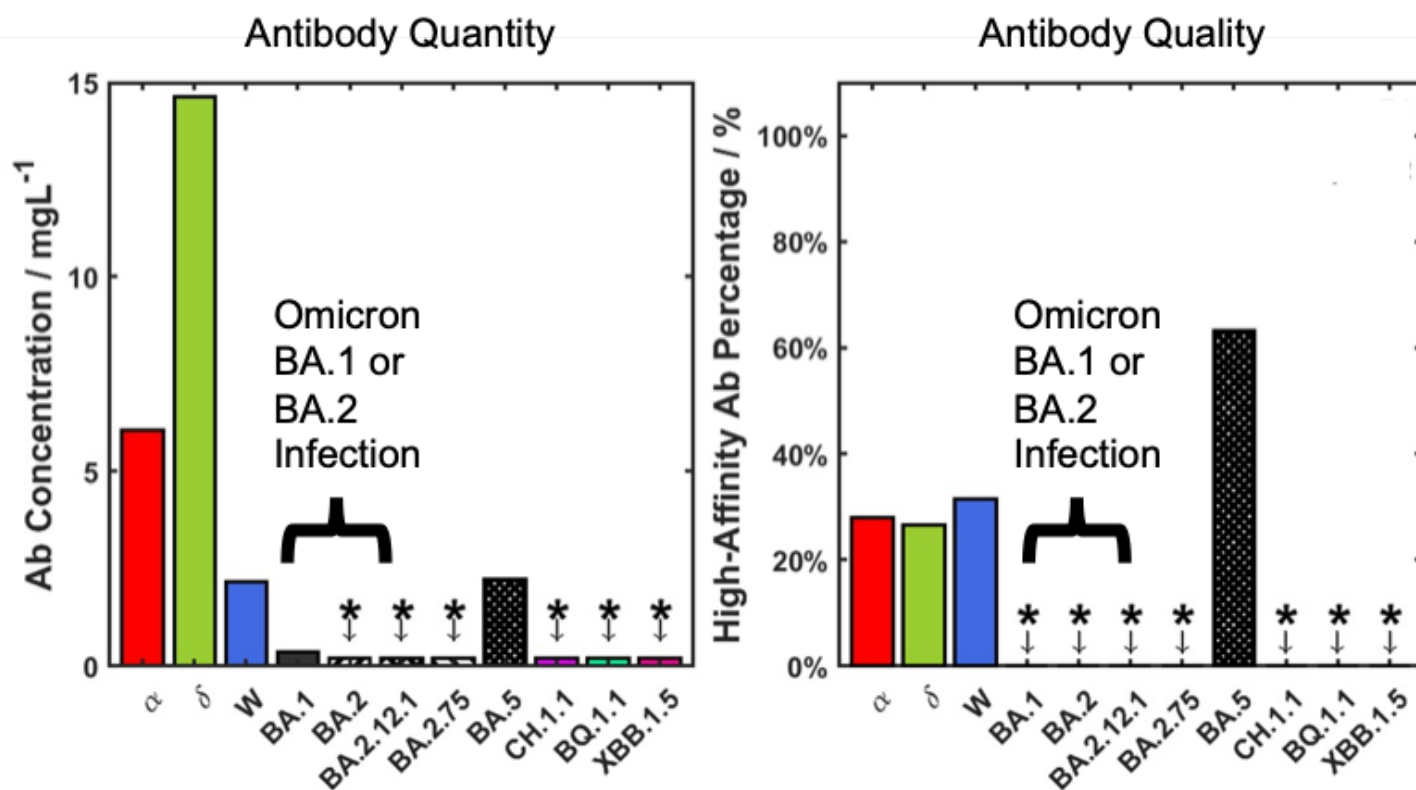


Figure 1 Long Covid patient Antibody Spectrum for an infection in March 2022 when BA.1 or BA.2 were the circulating variants.

In May 2023, the patient contracted Covid again when the circulating variant was an Omicron XBB sub-variant. Following initial refusal by the prescribing hospital Consultant, they were able to get the antiviral Molnupiravir on day 4 of the infection for a period of 5 days upon presentation of the Attomarker antibody spectrum above indicating they were immuno-compromised. Recovery from the infection was underway

within 2 days and the new antibody spectrum is shown below, Figure 2. The spectrum now shows a changed pattern with antibodies of a higher concentration and quality for the XBB.1.5 variant and the BA.1/2 variants. The patient's Long Covid symptoms were alleviated and over a 4-week period the patient has made a steady recovery from Long Covid.

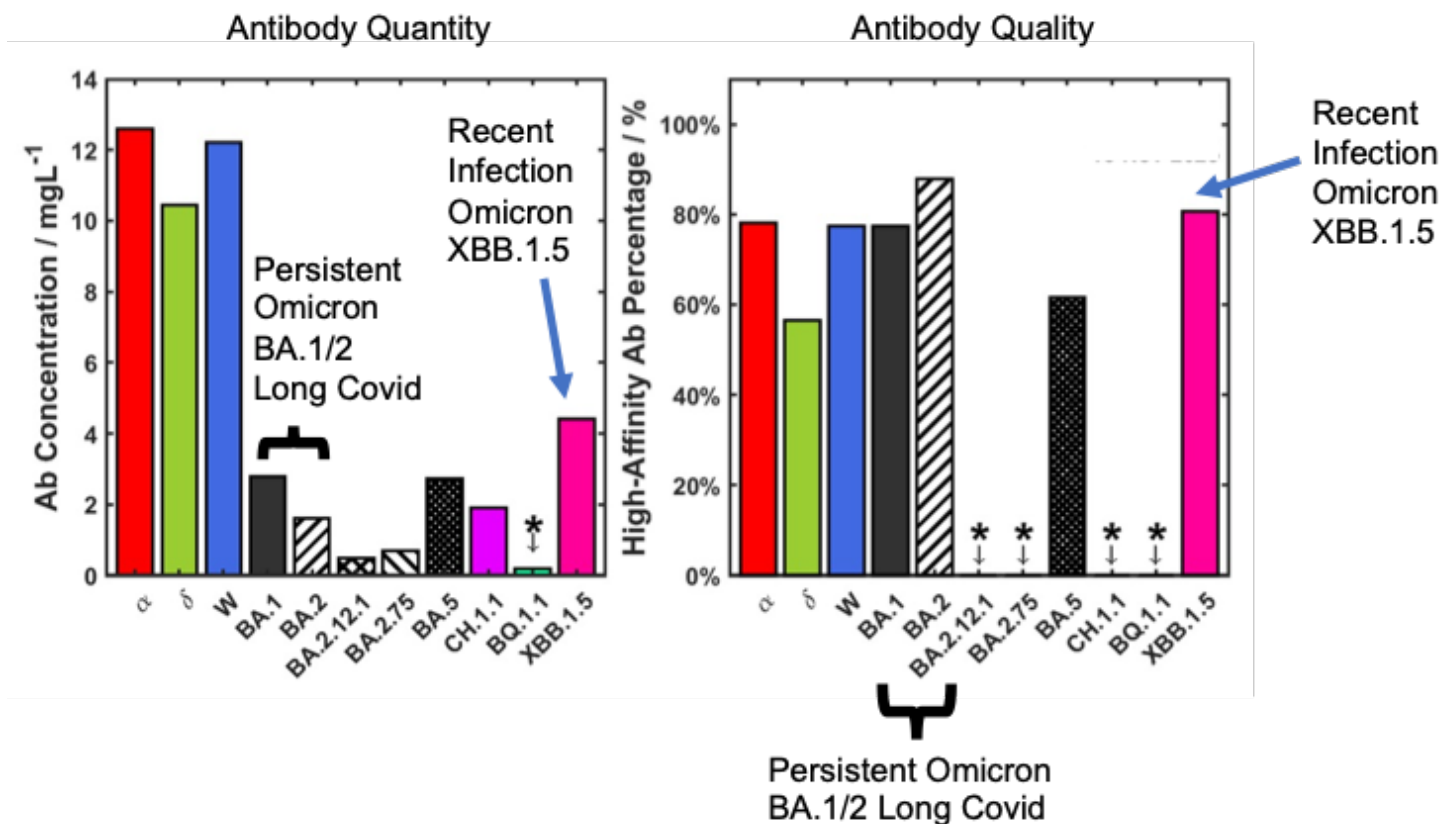


Figure 2 The patient's antibody spectrum following an infection in May 2023, when the XBB.1.5 variant was in circulation.

Based on the persistent virus hypothesis, with the support of the prescribed antivirals, the patient has developed a sterilising serum during the response to the latest infection, which appears to

have cleared the the persistent BA.1/2 infection.

This is the first look at the antibody characteristics of a naturally produced sterilising serum.



What does this mean?

The concept of persistent virus and sterilising serum leading to a recovery has now been underpinned by evidence. Another patient has also made a sterilising serum from immunotherapy and this too has led to a significant improvement in symptoms, although not the complete recovery.

- » Should everyone with LC now seek to get COVID deliberately in order to be prescribed antivirals? No, this would be dangerous. But it does mean that the 'original sin' or imprinting idea from the first infection can now be changed – maybe even leading to imprinting therapy.
- » Is this the first diagnostic test for Long Covid? Yes, possibly and we have been extending the data set. In time the results will be published and presented to regulatory agencies. The concept of a sterilising serum may have consequences for other chronic conditions such as Long Lyme and ME, thought to be caused by Epstein Barr Virus. It may have a much wider application in all post-infection recovery.

- » Are there any treatments? Yes, we have tried a course of immunotherapy to make a synthetic sterilising serum and this has resulted in an improved patient outcome; but the sample size is too small. The treatment is available in London with one of our partner clinics and we are exploring other options internationally.
- Different (heterologous) vaccines might produce a sterilising serum and we are looking specifically at protein vaccines, not mRNA vaccines. Novavax has reported all-variant protection and we are seeking collaboration.
- Internationally, there are few results of recovery and none have been well characterised; treatments will remain on a named-patient basis until the evidence is collected for a trial. Funding for Long Covid trials remains challenging.

- » The Attomarker Multi-Variant Antibody Immunity Spectrum (AMVAIS) test with a clinician's report has been considered as proof of being immunocompromised and some pharmacies will allow vaccination in the UK.
- » Can I get tested? Yes, the AMVAIS test is available on a named-patient basis when requested on your behalf by a doctor from one of our partner clinics.
- » Can I get therapy? Access to the therapy is very difficult in some jurisdictions, but the more test data we have the better the case for support.
- » Is Attomarker exploiting the Long Covid community? We have developed the test initially through donations by alumni to the research group of Prof Shaw, Attomarker CEO and Founder, and set up all of the test protocols without any external funding. The cost of the test is £170 which allows for all 4 tests to be performed to produce the results and the management of the data. Attomarker's intention is to help treat Long Covid, a pernicious pandemic legacy, without profiteering.

- » What is the cost of the Test including mailing? In the UK, the test costs £170 plus shipping charge. International shipping costs will depend on location and will need to be batched into groups of 5 to comply with customs. The local clinic will do this.
- » How much blood is needed? The blood is collected as a finger prick in our dedicated mailaway collection pack.
- » What do I get from the test? You will get the results in about 2 weeks from our laboratory receiving the sample. You will receive the Antibody Spectrum as shown above for you and some possible treatment options. Your requesting doctor will then provide additional support in collaboration with Attomarker.

You will be asked to complete a questionnaire. Attomarker is collating all data anonymously to contribute to the understanding, characterisation, and treatment of Long Covid. Only when a reliable diagnostic is found will treatments become available.