Salvagene GROUP

Business Unit: SARS-CoV-2 Task Force
Keynote: #60

February 2021

Salvagene SARS CoV-2 Vaccine and Medication Advisory Board:

Update: Recommendations on vaccination for our Premium clients.

KEYNOTE

Dear Premium Customers,

The timing of any recommendations we make on vaccination will be determined by the individual health status of our clients, which is a combination of Covid-19 Risk Factor and Cytokine Storm Risk Factor as calculated by our A.I. program.

We consider the benchmark values to be a Covid-19 Risk Factor of 1.3 and a Cytokine Storm Risk Factor of 1.0 or above. For the moment, we are drawing the line here, as the marginal utility of vaccination (i.e. the advantages outweighing the disadvantages at the present time, and possibly also for the future) approaches zero. For this reason, we will not be making any further recommendations in the next two weeks for Premium clients whose risk factors are lower than the levels quoted here.

The main reasons are:

- The vaccines currently available are acknowledged to have reduced efficacy against some variant forms of the virus.

- If and when further dangerous variants emerge, it is unclear whether persons already vaccinated can be readily revaccinated.

The question is completely open and, in our view, the answer depends entirely on vaccine science. This, in turn, will be another important selection criterion in making future recommendations. Moreover, it remains unclear how quickly vaccines can be adapted if and when further genetic mutants emerge with possibly more serious consequences than the variants known so far. The future course of the pandemic will ultimately be decided by speed of response versus the speed at which new variants emerge.

If you nonetheless opt to be vaccinated, you should contact us beforehand so that we can record which make and batch of vaccine has been used. We find this out by checking the exact time and place of vaccination against the vaccination records of the country in which you live. We log this information so that, if you are revaccinated at some point in the future, we can determine whether the different versions are compatible with each other and how they compare with the prevailing variants of the virus.
As previously requested, **we also ask you to report any information pertaining to infection with the novel coronavirus, such as time, place and variant if known**. This will enable us to advise you accordingly if you decide later on in the year to get yourself vaccinated.

We further recommend that you attend only an official vaccination center approved by your national health authority and not to use private channels, especially the internet. We urge you not to fall prey to one of the 100,000 fake vaccine doses currently in circulation.

The mRNA-based vaccines have a clear advantage in terms of adaptability. For this reason, they are the only type that we have made recommendations on so far.

Of the vaccines in the pipeline, our preferred candidate is CureVac because it too is an mRNA-based formula, but we also have high expectations of Johnson & Johnson and Novavax, because all of them can be adapted in ongoing Phase 3 clinical trials, providing these have been set up with sufficient flexibility. They have the advantage that the entire mutation event can be observed in the clinical phase and taken into account in the development process. We may therefore be pleasantly surprised, especially in the case of CureVac, by the much more comprehensive efficacy than the alternatives currently available. We are, of course, following developments closely and will continue to report back to you on a regular basis.

In the last two weeks, the Sputnik vaccine developed in Russia has also come under the spotlight. The data that has now been published was already available to us. We would describe our assessment of this vaccine as broadly positive without straying into the euphoric.

When we first wrote about the Sputnik vaccine in May 2020, long before the Russian government made a public announcement in the summer, we expressed our skepticism, as all the standard clinical Phase 3 testing procedures had been bypassed, and the vaccine began rollout before Phase 3 was anywhere near completion.

The results that have been published concern only the 20,000 volunteers who took part in the trials, and yet the Sputnik vaccine has already been administered to several 100,000 people since August. The data presented on the Sputnik vaccine in May showed that it has an extreme similarity with the platform of the AstraZeneca vaccine. However, there is one clear difference that

also led us to place Sputnik at number 4 in our vaccine ranking, namely its efficacy of over 90%.

As with AstraZeneca, the blueprint for the coronavirus spike protein is inserted into a genetically modified, harmless adenovirus which serves as a vector to channel the building instructions into human cells. This is why we refer to it as a "vector vaccine". Once the blueprint has arrived in the cells, they produce the spike proteins of the coronavirus, which the immune system uses to train for future defense. The Russian scientists have nevertheless done one thing that is radically differently from their colleagues in Oxford: unlike the AstraZeneca vaccine which sources adenoviruses from chimpanzees, Sputnik uses different human adenoviruses administered in two separate stages. In the first shot, adenovirus type 26 acts as the vector, and in the second, three weeks later, adenovirus type 5 is injected with the spike blueprint. We refer to this as a "heterologous boost". This eliminates one possible issue, namely that the immune system also recognizes the adenovirus as an enemy, and forms antibodies to combat it. This can weaken the effect of the second dose, because if the immune system kills the vector virus with the spike blueprint before it has even had a chance to deliver its important cargo into the cells, the desired protective effect may be lost.

As we surmised in our critique of the AstraZeneca vaccine in the autumn, this could be the reason for its lower efficacy. Although the EMA has not imposed an age limit on the AstraZeneca vaccine, it comes as no surprise to us that most member states have set their own upper threshold, for example age 55 in Italy, age 60 in Poland and Switzerland due to a lack of information will currently not give any approval at all.

In contrast, the Sputnik trials also included older people, with more than 2,100 volunteers recruited above the age 60. The result was the same – an efficacy rate of 91.8%. As far as side-effects are concerned, what we have seen in the official documents and also in the Lancet report, Sputnik appears to be relatively harmless.

However, we are not entirely convinced, because significantly more people have been vaccinated, and the problems which appeared in Brazil and Mexico have not been dealt with transparently.

We will continue to keep you informed. If you have any questions about vaccination, please contact your Salvagene consultant directly.

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