Evaluate Vantage

January 14, 2021

# J&J provides early hope for single-dose Covid-19 vaccine

Madeleine Armstrong


**Pivotal data for JNJ-78436735 are imminent, with Novavax and Curevac not far behind.**

One advantage of Johnson & Johnson's Covid-19 vaccine candidate is that it might provide protection after a single dose. Early neutralising antibody data suggest that this might indeed be the case – but, as ever, this needs to be confirmed with efficacy data.

Luckily, that is coming very soon: results from the Ensemble trial, testing one dose of JNJ-78436735, are due in late January. Other projects from Novavax and Curevac are also set to yield pivotal data in the first quarter, so it might soon become clear whether more vaccines will be joining the currently authorised options.

| Selected upcoming readouts with Covid-19 vaccines | | | | | |
|---|---|---|---|---|---|
| **Company** | **Vaccine name** | **Trial name/details** | **N** | **Trial ID** | **Timing** |
| Johnson & Johnson | JNJ-78436735 | Ensemble, US ph3, single dose | 45,000 | NCT04505722 | Data due Jan 2021 |
| | | Ensemble-2, US ph3, two doses | 30,000 | NCT04614948 | Began Nov 2020 |
| Novavax | NVX-CoV2373 | S Africa ph2b | 4,400 | NCT04533399 | Data due early Q1 2021 |
| | | UK ph3 | 15,000 | NCT04583995 | Data due early Q1 2021 |
| | | Prevent-19, US/Mexico ph3 | 30,000 | NCT04611802 | Interim data due Q2 2021 |
| CVnCoV | Curevac | Herald, Europe ph2/3 | 36,500 | NCT04652102 | Data due Q1 2021 |
| | | Europe ph3, healthcare workers | 2,500 | NCT04674189 | Primary completion Jun 2021 |
| Astrazeneca | AZD1222* | US ph3 | 30,000 | NCT04516746 | Primary completion Mar 2021 |
| **Authorised in the UK in Dec 2020. Source: EvaluatePharma & clinicaltrials.gov.* | | | | | |

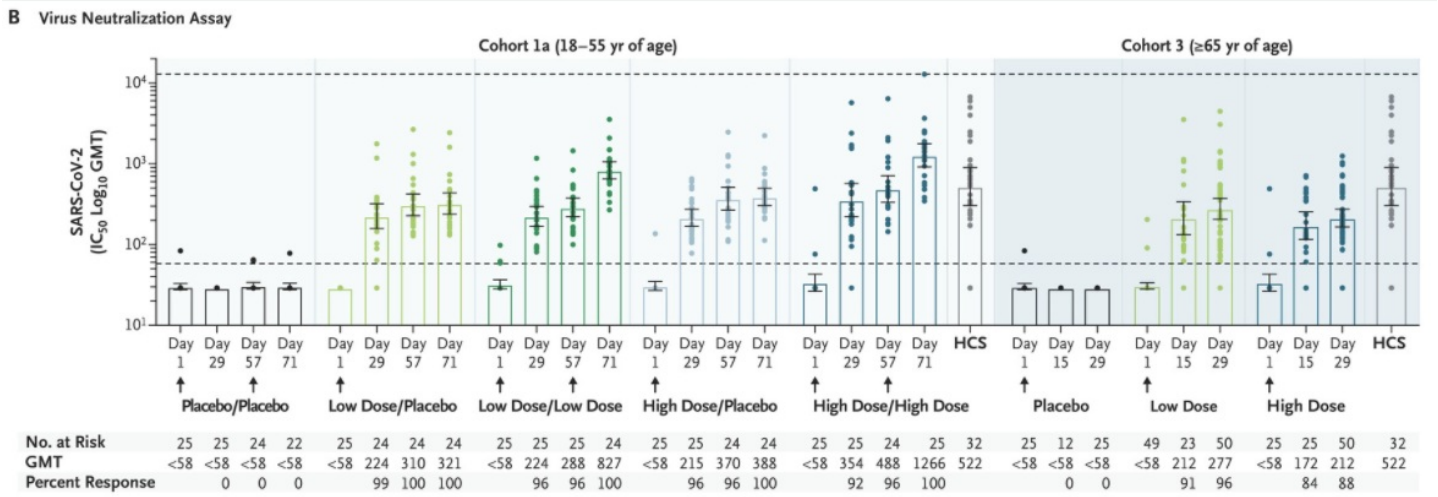
The latest data came from a phase I/II trial of JNJ-78436735, and were published in the NEJM yesterday; these are updated results from a preprint released in September.

The study tested either one or two doses of the vaccine, given at a low or high dose, in 805 subjects. Participants were divided into those aged 18-55 (cohort 1) or aged 65 or older (cohort 3).

Neutralising antibody responses were seen with one and with two doses, although the results were more impressive with two: in cohort 1 a single dose led to geometric mean titres of 288-488 after 57 days; 14 days after the second dose titres increased to 827-1,266.

In the older age group responses were not quite as strong after a single dose; two-dose data for this cohort are still being analysed.

## Neutralising antibody responses with JNJ-78436735




Source: NEJM

The question now is whether the neutralising antibody response in the single-dose group will be enough to spur decent efficacy when it comes to preventing Covid-19.

Evercore ISI's Umer Raffat noted that the antibody levels seen with one dose of JNJ-78436735 looked similar to those observed with a two-dose regimen of Astrazeneca's AZD1222. That vaccine led to efficacy of 70% in a pooled analysis of its phase III UK and Brazil trials, enough to get it to market in the UK.

Still, J&J is not pinning all its hopes on the one-dose regimen: in November it started Ensemble-2, testing a two-dose schedule. Perhaps this is a sign of lack of confidence in Ensemble, or maybe it is just a sensible insurance policy.

Ensemble itself has not been without problems: the trial was paused in October after an “unexplained illness” in a participant, but restarted later that month with the FDA apparently satisfied that the vaccine had not been the cause.

And J&J is struggling to meet its production targets for JNJ-78436735, according to the New York Times. J&J execs made no mention of this during the group's presentation at the JP Morgan healthcare conference on Monday, only saying the company was "on track" to deliver hundreds of millions of doses in the first half of the year, and close to a billion by year end.

**Next up**

While the world awaits the J&J data, several other contenders are not too far behind. The next could be Novavax’s NVX-CoV2373, the leading recombinant protein candidate. The company expects results from its phase IIb South Africa study and phase III UK trial “within a few weeks”, its chief executive, Stanley Erck, told JP Morgan attendees on Monday.

However, the more important readout will come from Novavax’s largest pivotal study, being conducted in the US and Mexico, Prevent-19, with an update not due until the second quarter. The trial, which only began in late December, is enrolling quickly, with nearly 5,800 subjects randomised as of January 10.

Meanwhile, Curevac hopes to get the third mRNA vaccine to market, behind Pfizer/Biontech’s Comirnaty and Moderna’s mRNA-1273. Europe phase II/III data with CVnCoV are due this quarter; the company has ruled out seeking FDA approval for now.

The US trial of Astrazeneca’s AZD1222 should also yield data fairly soon, which will be vital for the group’s chances of getting its vaccine to the world’s biggest market.

Given the current situation in many countries it will be a case of the more vaccines the merrier. However, there was a reminder this week that things do not always turn out as planned, with China’s Sinovac reporting efficacy of just 50.4% in a Brazil trial of its contender, CoronaVac, which uses an inactivated version of the Sars-Cov-2 virus.