

Can vaccination stop SARS-CoV-2 prolonged infection in people with immunosuppression because of advanced HIV disease?

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1. Background

- ❖ Emergence of new variants through SARS-CoV-2 evolution compromises the effectiveness of current vaccines
- ❖ Evolution of SARS-CoV-2 can happen during long-term infection in immunosuppressed individuals
- ❖ One cause of immunosuppression is advanced HIV disease, where uncontrolled HIV viremia and depletion of CD4 T cells leads to immune compromise
- ❖ 1 in 10 people living with HIV in South Africa have advanced HIV (~800 000 people)

2. Aim: Test antibody neutralization pre- and post vaccine

Study design:

- ❖ Case series from prospective cohort study

Study population:

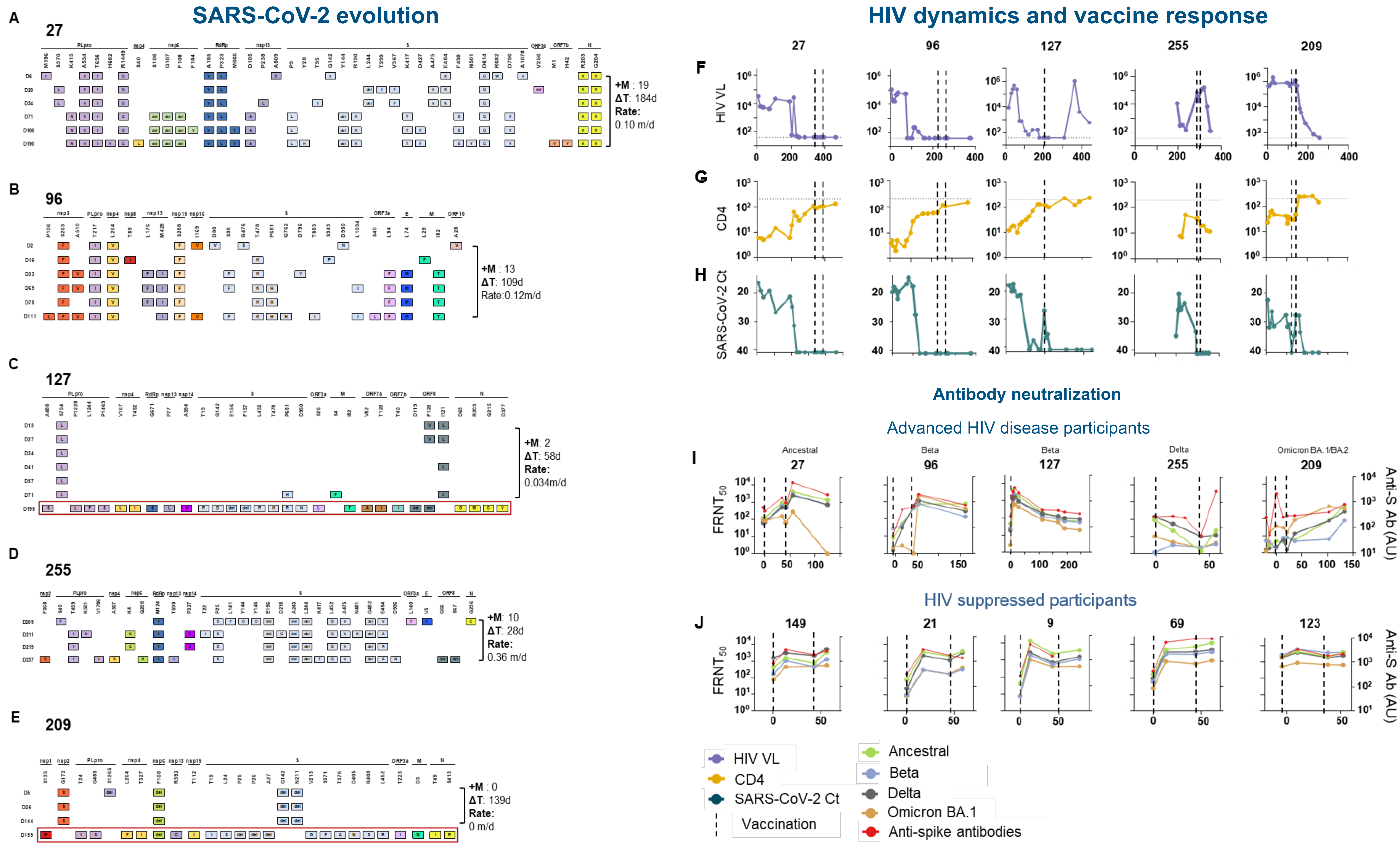
- ❖ 5 participants (≥ 18 years)
- ❖ CD4 < 200
- ❖ HIV viremic at enrolment
- ❖ Longitudinal follow-up
- ❖ Controls with suppressed HIV
- ❖ Vaccinated with Pfizer BNT162b2 mRNA vaccine

Ethics Approval:

BREC//00001275/2020

3. Results

1) Extensive but heterogeneous SARS-CoV-2 evolution in long-term infection in people with advanced HIV disease; 2) Participants with advanced HIV disease whose HIV viremia was successfully suppressed by antiretroviral therapy had a good neutralizing antibody response to the Pfizer BNT162b2 vaccine. However, those with advanced HIV disease who were HIV viremic at vaccination did not have a strong neutralizing antibody response post-vaccination.



4. Conclusion

These findings suggest that viremic people living with HIV with a low CD4 T-cell count need to be HIV suppressed before receiving a COVID-19 vaccine.

5. References

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