AMA-VACC: Clinical trial assessing the immune response to SARS-CoV-2 mRNA vaccines in siponimod treated patients with secondary progressive multiple sclerosis

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Objective

We are aiming to understand the longitudinal cellular and humoral immune responses to SARS-CoV-2 mRNA vaccines depending on the timing of vaccination and SPMS treatment.

Background

SARS-CoV-2 mRNA vaccines are a key factor fighting the COVID-19 pandemic across the globe. However, data are lacking on the efficacy of vaccination in patients with secondary progressive multiple sclerosis (SPMS) on disease-modifying therapies (DMTs) both over time and after a booster vaccination.

Design/Methods

AMA-VACC is an open-label, three-cohort, prospective study in Germany with 41 multiple sclerosis patients currently treated with siponimod, any first-line DMT or without treatment at all in clinical routine. Cohort 1 receives SARS-CoV-2 mRNA vaccination while continuing their current siponimod treatment, cohort 2 interrupts siponimod treatment for the purpose of a full vaccination cycle and cohort 3 receives vaccination during continuous treatment with first-line DMTs (glatirameracetate, interferons, teriflunomide) or no current treatment in clinical routine. Primary endpoint is the rate of patients achieving seroconversion assessed by detection of serum neutralizing antibodies one week after SARS-CoV-2 mRNA vaccination. Furthermore, development and maintenance of SARS-CoV-2 specific T-cells is evaluated in all patients. Both parameters are analyzed in week one and month one and six after initial vaccination cycle and one month after a potential booster vaccination.

Results

After a positive first interim analysis showing both SARS-CoV-2 neutralizing antibodies and T-cell responses one week after complete vaccination in siponimod patients data will be available in early 2022 for all patients at week one and later time points including first booster vaccinations. If possible, AMA-VACC results will be compared to findings from other clinical SARS-CoV-2 vaccination studies in patients with MS.

Conclusions

This analysis will provide first longitudinal data on the immune response after SARS-CoV-2 mRNA vaccination in siponimod treated SPMS patients and enable physicians and patients to make an informed decision on the coordination of SARS-CoV-2 mRNA vaccination and SPMS treatment.