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Title

The association between BNT162b2 vaccinations and incidence of immune-mediated comorbidities

Priority 1 (Research Category)

COVID-19

Presenters

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Abstract

Background

A large vaccination campaign was initiated worldwide in December 2020 in order to prevent infection with SARS-CoV-2 and severe Covid-19 disease. However, long-term adverse effects of vaccination remain unclear. Therefore, our objective was to examine the association between vaccination and the incidence of autoimmune diagnoses in the first year after vaccine uptake.

Methods

This retrospective cohort study based on Clalit Health Services (CHS) comprehensive database compared the rates of immune-mediated diagnoses among BNT162b2 vaccinated versus unvaccinated individuals. As a reference, a secondary cohort compared individuals infected with Sars-CoV-2 versus uninfected individuals. The minimum follow-up period was 4 months. The cohorts were divided into 4 age groups (12-17, 18-44, 45-64, 65 years or older). Multivariate Cox proportional hazard regression models were applied, followed by a correction for multiple comparisons using the False Discovery Rate (FDR) method, hence accounting for the investigation of multiple clinical outcomes.

Results

Increased risk for immune-mediated diagnoses following vaccination with BNT162b2 was observed for psoriasis in all age groups (HR 1.41-1.69), colitis among patients younger than 65 years (HR 1.38-1.93), vitiligo in patients aged 45-64 (HR 2.82, 95%CI: 1.57-5.08) and for polymyalgia-rheumatica in patients aged 65 years or older (HR 2.12, 95% CI: 1.3-3.47).

In the reference cohort, patients who were infected by Covid-19 were at increased risk for fibromyalgia (HR 1.72, 95% CI: 1.36-2.19 in individuals aged 18-44; HR 1.71, 95% CI: 1.31-2.22 in individuals aged 45-64), and hypothyroidism (HR 1.54, 95% CI: 1.15-2.07 in individuals aged 65 years or older).

Conclusions

The BNT162b2 vaccine was associated with increased risk (though rare) for psoriasis, colitis and polymyalgia rheumatica. These findings should be considered as a part of the risk-benefit assessment when planning future vaccination programs for various population groups.