ID der Kurzfassung : **342**

Class switch toward IgG2 and IgG4 is more pronounced in BNT162b2 compared to mRNA-1273 COVID-19 vaccinees

Inhalt

Objectives:
Vaccination against SARS-CoV-2 induces antibodies that reduce the risk of severe disease. Because IgG subclasses differ in their ability to activate complement, to bind Fc receptors and neutralize viruses, it is crucial to understand how IgG subclass responses differ between vaccine platforms.

Design:
IgG1, IgG2, IgG3, and IgG4 binding antibodies against SARS-CoV-2 trimeric spike protein, receptor-binding domain, and S1/S2 subunits responses were quantified using a multiplex immunoassay, after a booster dose of either BNT162b2 (Pfizer/BioNTech) or mRNA-1273 (Moderna) in a healthy cohort (n = 165) who had received two previous vaccine doses.

Results:
Boosting increased all subclass IgG levels, except for S1-specific IgG1 and S2-specific IgG2. However, IgG2 and IgG4 levels were significantly higher in BNT162b2 than in mRNA-1273 vaccinees (P = 0.0313 [IgG2 S] and P = 0.0106 [IgG4 RBD], P = 0.0070 [IgG4 S1]). Individuals who had previously received a non-mRNA vaccination showed no significant increase in IgG2 (P = 0.4909 [S]) and IgG4 (P = 0.0607 [S]) post-boost.

Conclusions:
Vaccine-specific differences post-booster vaccination were identified and may drive the class switch between IgG2 and IgG4 responses. Given their different roles, these subtle differences may ultimately also affect long-term immunity and protection.

Keywords

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Junior Scientist Status

Yes, I am a Junior Scientist.

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