Timing and sequence of vaccination against COVID-19 and influenza – Author's reply

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We appreciate the interest of Liu and colleagues[1] in our recent study investigating the immune response and safety implications of co-administering mRNA COVID-19 booster vaccines and influenza vaccines.[2] This is an important topic, and we welcome the opportunity to address the points raised.

In the TACTIC trial, we concluded that co-administration of both vaccines was safe, but the possibility of immunological interference could not be ruled out. We measured a diminished serological response, both in terms of quantitative and functional antibodies, after concurrent vaccination. We would like to clarify that this was not limited to IgG antibodies against the SARS-CoV-2 spike protein, but we also performed a comprehensive assessment of anti-RBD IgG antibodies, as well as anti-spike and anti-RBD IgA antibodies, both in plasma and mucosal fluid. These quantitative measurements were complemented by neutralization assays and hemagglutinin agglutination. Indeed, epidemiological future studies to assess vaccine effectiveness are warranted to explore the clinical relevance of our findings.

It was noted that our study was limited to individuals ≥60 years of age and Liu et al. suggested that this was a limitation. We believe that the investigation of serological responses in at-risk individuals of older age is in fact a strength of the study, as this is the vulnerable population at higher risk for severe disease and mortality from both influenza and COVID-19. In addition, this group is often underrepresented in immunological vaccine studies. The number of volunteers studied are in line with the number of volunteers usually recruited in serological studies.[3,4] We do not claim our findings can be translated to younger persons, but we do emphasize the importance of careful consideration when using of a combination of vaccines in this already vulnerable group. As such, we consider that our study design was appropriate for the research question we sought to answer.

Finally, we would like to acknowledge the study by Izikson et al. that was mentioned in the correspondence.[5] Izikson et al. found no safety concerns or immune interference when a high-dose quadrivalent influenza vaccine was administered simultaneously with a booster mRNA-1273 in adults aged 65 years and older. We indeed discussed this study in the discussion section of our own paper and reviewed the differences between both trials.

It is essential to continue evaluating the effects of novel vaccines and administration methods, particularly in vulnerable populations. We hope that our study and the published reactions will contribute to ongoing discussions and further research on the safety and efficacy of vaccination strategies.

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Contributors

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Declaration of interests

MGN is a scientific founder of TTxD, Lemba and BioTrip, and a member of the TTxD scientific advisory board. MGN has received research grants from TTxD and GSK. The TACTIC trial was conducted with the ZonMw COVID-19 programme. The other authors have no conflict of interest.

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