

Review of: "Omicron Variant Could be an Antigenic Shift of SARS-CoV-2"

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Potential competing interests: No potential competing interests to declare.

The manuscript would need to be rewritten to adapt to the English language. Perhaps it could benefit of co-authors inclusion. Claims and conclusions are made without proper scientific support or comprehensive literature. There is no merit for publication as presented.

Waning of antibody response was reported shortly after the first vaccinations, not only after omicron appeared. What about innate or cellular immune responses? These data were not evaluated as broadly as the humoral responses all over the world, leaving conclusions less robust.

Reverse zoonosis: what is the fundament for this theory of evolution in mice and jumping back to humans?

Figure 1. Omicron and its sublineages clearly diverged from their predecessors. Caption
(<https://doi.org/10.1016/j.cell.2022.09.018>). The figure is copied from another publication.

Some passages are controversial. I will highlight some:

"Mutants and recombinants of the virus are more transmissible and virulent". What is the concept of virulence in this affirmation?

"The Delta variant was reported to be 97-100% more virulent than the original Wuhan strain due to mutations in the RBD region, which lowered the immune response produced through vaccination in a short time." The affirmation lacks reference. How do you state that the decay in immune response produced through vaccination was due to mutations only?

"The increasing dominance of the Omicron variant and its frequent subvariants allowed for alleviated full protection against symptomatic infection, hence shortening the time interval for booster doses by 3 months, yielding satisfactory results". What is the intended meaning of this paragraph??

"XBB* recombinant, derived from BA.2.10.1 and BA.2.75, is capable of infecting individuals". This sentence lacks coherence as all variants are capable of infecting individuals with different virulence outcomes.

"during the arrival of a new variant after Alpha (Dubey et al., 2022). Therefore, the most significant features of Omicron were immune escape to vaccine-generated nAbs (evolutionary process)". Other immune aspects should be considered, not only Abs.

“mutations in the RBD region were investigated via $\Delta\Delta G$ score for their stability potential. D614G, Q493K, and S477N mutations are stable with molecular flexibility with S-glycoprotein to interact with ACE-2, enhancing the virulent nature of the variant.” The mutations leading to variants increased transmissibility, not virulence. The last paragraph states that.

“ChAdOx1 nCoV-19 (AZ) vaccine efficacy remained at 66.5% after two doses. However, the prospects of primary immunization against the symptomatic disease of COVID-19 Omicron remain limited (Chavda et al., 2022). This can be defined as antigenic drift”. I could not understand the conclusion.

“The booster dose had significantly improved the humoral response against omicron, which was necessary to counteract virus transmission”. No vaccine so far was capable of avoiding virus transmission. Also, booster doses started before the Omicron appearance.

“In conclusion, it is fair to say that the emergence of Omicron has significantly reduced hospitalizations with less severe clinical presentations compared to other VOCs, despite increasing the inefficiency of therapeutics for clinical use”. How this conclusion refers to the manuscript title?