

Abstract.

Who needs a new Omicron-Specific Covid-19 vaccine?

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The sudden and quick spread of the COVID-19 pandemic created an unprecedented urgency to identify the virus and study the epidemiology, spread, pathology, and identify a protective antigen for vaccine development. New and old technologies were utilized to develop prototype vaccines. Regulatory agencies joined forces and established an expedited process for the development, manufacturing, development, clinical evaluation, and approval of these vaccines. Lead vaccines entered clinical trials using expedited protocols and the evaluation in humans was concluded within eleven months with startling success. Sooner, two lead vaccines were awarded an EUA license and vaccination was rolled out within days of their approval. Within few months, new variants started to emerge, however, lucky for us, the original vaccine composition still worked well against these new variants. Another observation was the decline of antibody levels in vaccinees within 3-5 months. A debate about the value of a third immunization/booster to restore early levels of antibodies erupted. A 3d dose was approved despite the fact that breakthrough cases were mostly infection and not serious disease and hospitalization. Herd immunity is the only known path to overcome a pandemic like this. However, the mortality toll was not bearable and therefore we focused on vaccination and boosting. Unfortunately, all vaccines licensed or under development are injectable vaccines that will generate serum antibodies and will not prevent colonization and spread of the virus. Mucosal immunity afforded by infection/recovery or mucosal vaccination could protect against colonization and stop the spread of the virus. The emergence of Omicron, a less pathologic and fast spreader, to my understanding created an opportunity to confer mucosal immunity, boost systemic immunity, and prevent colonization and spread of the virus. I believe that with the infection/recovery with Omicron the herd immunity is being established and expanded and therefore an Omicron-specific vaccine is not needed.