

The important thing is not to stop questioning. Albert Einstein

What have we learned from COVID-19 related studies?

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The chaos has almost gone after 3 to 4 years struggle against SARS-CoV-2 pandemic. Looking back those days, we lost many valuables but at the same time, we obtained scientific progress that can be applied to not limited in infectious diseases but other medical fields. It is still fresh in memory that Drs. Katalin Karioko and Drew Weissman received the Nobel Prize in physiology or Medicine 2023 for their discoveries concerning nucleoside base modifications that enabled the development of effective mRNA vaccines against COVID-19. This advance will accelerate the research in developing mRNA vaccine against HIV or other infectious disease and cancer¹⁾. Thinking about clinical laboratory medicine, various methods to diagnose the infection were rapidly developed and widely used in regular clinical laboratories and well recognized by the patients. After developing the vaccines against COVID-19, a lot of research papers have been published in regards to the accuracy of measuring antibodies, time-course changes of antibodies, diagnostic values of measuring antibodies, class of immunoglobulin responses after natural infection and vaccination²⁾ or according to sex³⁾. In the current issue, Kim and his colleagues reported the responses of neutralizing antibody against COVID-19 is different between naturally infected and vaccinated individuals⁴⁾. They showed the titer of neutralizing antibody lasts at least three month after booster shot of vaccine. True neutralizing capacity of antibody is difficult to examine in routine laboratory without special equipment but Kim and his colleagues measured antibody against viral receptor binding domain which is reported to correspond to neutralizing capacity⁵⁾.

The current study provides us a clue to schedule of vaccination to maintain its effectiveness. We are facing several waves of influenza, COVID-19 or adenovirus infections all through the season. It is reported that response of neutralizing antibody after influenza vaccination varies by ages and host immune priming histories⁶⁾. More detailed and large-scale investigations are required in character of neutralizing antibody after COVID-19 vaccination to establish the optimal vaccination schedule to prevent waves of infection.

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