COMMENT & RESPONSE

Thinking More About Inhibition of Breast Milk on the Infectivity of SARS-CoV-2

To the Editor  We read with interest the article 1 on the association of SARS-CoV-2 antibodies in human breast milk induced by natural infection or messenger RNA vaccination with SARS-CoV-2 infection in vitro. Young and colleagues 1 attributed the neutralizing activity of human breast milk against SARS-CoV-2 to SARS-CoV-2 immunoglobulin A (IgA) and IgG antibodies in the breast milk. Certainly SARS-CoV-2 IgA and IgG antibodies in breast milk play an important role in the inhibition of SARS-CoV-2 infection; however, we consider that some of the results in this study cannot be completely attributed to SARS-CoV-2 IgA and IgG antibodies in the breast milk.

That 4 of the 20 breast milk samples collected before vaccination showed neutralizing activity cannot be interpreted by SARS-CoV-2 IgA and IgG antibodies. Although Young and colleagues 1 assumed that these 4 lactating women were possibly exposed to SARS-CoV-2 previously, the profile of SARS-CoV-2 IgG in the breast milk of these vaccinated women (Figure 2B) suggests that they were less likely to have had previous SARS-CoV-2 exposure. Moreover, Young and colleagues 1 did not find a consistent association between the concentrations of IgA or IgG in human breast milk and neutralizing activity at the various points. In addition, the IgA fraction of the breast milk from each infected or vaccinated lactating woman was found to have equal or almost equal neutralizing titers to the non-IgA fraction of the breast milk. These results indicate that, in addition to SARS-CoV-2 IgA and IgG, other components in human breast milk can inhibit the infectivity of SARS-CoV-2.

Indeed, other studies 2,3 have shown that human breast milk collected before the outbreak of COVID-19 or from healthy lactating women, in whom SARS-CoV-2 antibodies were not found, inhibited the infectivity of SARS-CoV-2, and it has been shown that lactoferrin, which is found in a large proportion of whey proteins in human breast milk, has the capacity to neutralize the infectivity of SARS-CoV-2. 4 Accurate clarification of components in human breast milk that may neutralize the infectivity of SARS-CoV-2 is valuable to develop therapeutic options for treatment of COVID-19.

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Conflict of Interest Disclosures: None reported.