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Letter to the Editor

Re: Vaccine effectiveness of ChAdOx1 nCoV-19 against COVID-19 in a socially vulnerable community in Rio de Janeiro, Brazil by Ranzani et al.

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To the Editor:

Ranzani et al. evaluated the effectiveness of ChAdOx1 NCOV-19 against COVID-19 in a socially vulnerable community and observed that vaccine effectiveness increased up to 53.2% during 42–55 days after the first dose, and decreased afterwards in those who did not take the second dose [1]. They hypothesized that this decrease might occur in part because of an increase in Delta dominance and waning of immune Response. I think it is more likely that the vaccine's immune protection declines over time, and the time-dependent decline is greater than the mutation-related decline [2]. Unfortunately, the study did not provide detailed estimates of changes in vaccine effectiveness over time.

In addition, there are several concerns about the study that could interfere with the results. First, age stratification using a median age of 35 years, rather than including children, adults, and older adults, does not provide a good assessment of vaccine effectiveness in various populations. Studies have shown that the vaccine is less protective in older people, who need to be prioritized for booster shots [3]. Second, the study included periods dominated by Gamma and Delta and did not analyze them separately according to the onset of Delta. The infectivity, immune escape ability, and pathogenicity of different mutants are different, which may cause

confusion in the evaluation of vaccine effectiveness. Third, this analysis fails to account for potentially important confounding factors, including previous COVID-19 infection, populations with more sustained immune protection, and possibly greater emphasis on personal protection [4] (e.g. wearing masks), that can influence the assessment of vaccine effectiveness. Fourth, the novel coronavirus vaccine may have cross-protection against other pathogens, leading to the conclusion that the vaccine protection effect is low. A study has found that being vaccinated against COVID-19 may help people fight off illnesses such as colds by inhibiting other coronavirus [5].

Transparency declaration

The author declares no competing interests.

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