

Further investigation is needed to determine whether the decrease in IgG positivity after vaccination with CoronaVac parallels decreasing protection against severe disease. Effectiveness against intensive care unit (ICU) admission was 91.6% (95% CI 90.5–92.5) in Chile during the vaccine scaling-up campaign.⁹ Decisions made by policy makers about the need for a third dose will benefit from seroepidemiology studies, but the most relevant information to assess vaccine effectiveness should be protection in terms of reduction of deaths and ICU admissions, especially considering new emerging variants. Equitable access to robust vaccines is the ideal scenario, but in reality the universal provision of any COVID-19 vaccine presents a challenge.

We declare no competing interests.

**Marcus Vinicius Guimarães Lacerda, Daniel Youssef Bargieri*
marcuslacerda.br@gmail.com

Instituto de Pesquisa Clínica Carlos Borborema, Fundação de Medicina Tropical Dr Heitor Vieira Dourado, Manaus, Brazil (MVGL); Fundação Oswaldo Cruz, Instituto Leônidas e Maria Deane, Manaus 69040-000, Brazil (MVGL); Instituto de Ciências Biomédicas, Universidade de São Paulo, São Paulo, Brazil (DYB)

- 1 Bambra C, Riordan R, Ford J, Matthews F. The COVID-19 pandemic and health inequalities. *J Epidemiol Community Health* 2020; **74**: 964–68.
- 2 Moghadas SM, Vilches TN, Zhang K, et al. The impact of vaccination on COVID-19 outbreaks in the United States. *Clin Infect Dis* 2021; published online Jan 30. <https://doi.org/10.1093/cid/ciab079>.
- 3 Tanriover MD, Doğanay HL, Akova M, et al. Efficacy and safety of an inactivated whole-virion SARS-CoV-2 vaccine (CoronaVac): interim results of a double-blind, randomised, placebo-controlled, phase 3 trial in Turkey. *Lancet* 2021; **398**: 213–22.
- 4 Ranzani OT, Hitchings MDT, Dorion M, et al. Effectiveness of the CoronaVac vaccine in older adults during a gamma variant associated epidemic of covid-19 in Brazil: test negative case-control study. *BMJ* 2021; **374**: n2015.
- 5 Tan AT, Linster M, Tan CW, et al. Early induction of functional SARS-CoV-2-specific T cells associates with rapid viral clearance and mild disease in COVID-19 patients. *Cell Rep* 2021; **34**: 108728.
- 6 Castro R, Luz PM, Wakimoto MD, Veloso VG, Grinsztejn B, Perazzo H. COVID-19: a meta-analysis of diagnostic test accuracy of commercial assays registered in Brazil. *Braz J Infect Dis* 2020; **24**: 180–87.
- 7 Alter G, Yu J, Liu J, et al. Immunogenicity of Ad26.COV2.S vaccine against SARS-CoV-2 variants in humans. *Nature* 2021; **596**: 268–72.
- 8 Sauré D, O’Ryan M, Torress JP, Zuniga M, Santelices E, Basso LJ. Dynamic IgG seropositivity after rollout of CoronaVac and BNT162b2 COVID-19 vaccines in Chile: a sentinel surveillance study. *Lancet Infect Dis* 2021; published online Sept 9. [https://doi.org/10.1016/S1473-3099\(21\)00479-5](https://doi.org/10.1016/S1473-3099(21)00479-5).
- 9 Jara A, Undurraga EA, González C, et al. Effectiveness of an inactivated SARS-CoV-2 vaccine in Chile. *N Engl J Med* 2021; published online July 7. <https://doi.org/10.1056/NEJMoa2107715>.

The association between COVID-19 vaccination and Bell’s palsy

In the past 100 days, more than 3 billion doses of SARS-CoV-2 vaccines have been administered globally.¹ With 20 vaccines currently authorised in at least one country and 108 under clinical development as of July 20, 2021,² there is ongoing public concern regarding the possible adverse effects of SARS-CoV-2 immunisation. An adverse event reported in the product information of two vaccines developed with a novel mRNA technology is Bell’s palsy, a form of acute facial nerve paralysis.³ So far there has been no clear evidence of association between COVID-19 vaccination and facial paralysis. However, the findings from Eric Wan and colleagues’ study⁴ in *The Lancet Infectious Diseases* showed an overall increased risk of Bell’s palsy after immunisation with CoronaVac (Sinovac Biotech), a vaccine that uses the inactivated virus.

Despite the numerical imbalance of Bell’s palsy cases observed in trials of the two mRNA vaccines,^{5,6} but not in those of other vaccine platforms,⁷ the relevant regulatory bodies, including the US Food and Drug Administration and the UK Medicines and Healthcare

products Regulatory Agency among others, have argued that the observed frequency in vaccinated individuals was no higher than the expected background rate. A closer look at these figures and analysis of crude real-world data from pharmacovigilance agencies estimated that Bell’s palsy occurred more often in the mRNA vaccine groups than would be expected in the general population.⁸ Two research letters later provided indirect evidence for the safety of mRNA vaccines from a Bell’s palsy standpoint. In one letter, the WHO pharmacovigilance database was used to show that mRNA COVID-19 vaccines did not confer an increased risk of facial paralysis when compared with other viral vaccines.⁹ In the other letter, the authors concluded that patients with COVID-19 have a greater risk of acquiring Bell’s palsy than those who were vaccinated against the disease.¹⁰

The controversy was again addressed by the findings from a relatively small case-control study from Israel,¹¹ in which 37 patients with Bell’s palsy were matched to 74 controls and no association with mRNA-based



Flávia-Marco Varch Professional Photographer

Published Online
August 16, 2021
[https://doi.org/10.1016/S1473-3099\(21\)00467-9](https://doi.org/10.1016/S1473-3099(21)00467-9)
See **Articles** page 64