Effectiveness of CoronaVac® vaccine against severe acute respiratory infections (SARI) hospitalizations in Sibu District, Malaysia: A retrospective test-negative design

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ABSTRACT

Introduction: The COVID-19 vaccination campaign was implemented in Sibu, Malaysia in February 2021. We assessed the effectiveness of the CoronaVac® vaccine against severe acute respiratory infections (SARI) hospitalisation associated with laboratory-confirmed SARS-CoV-2 by time since vaccination. **Methods:** A test-negative case-control design was employed using a web-based national information system for PCR results of SARS-CoV-2 infection and COVID-19 vaccination, and the hospitalisation dataset in Sibu Hospital. Eligible SARI cases with SARS-CoV-2 RT-PCR positive were matched to those SARI cases with negative RT-PCR tests by age and workplace. Vaccine effectiveness was measured by conditional logistic regression with adjustment for gender, comorbidity, smoking and education level. **Results:** Between 15 March and 30 September 2021, in the dominance of lineages B.1.466.2 and B.1.617.2 (Delta variant), a total of 838 eligible SARI patients were identified. Vaccine effectiveness was 42.4% (95% confidence interval [CI]: -28.3, 74.1), and 76.5% (95% CI: 45.6, 89.8) for partial vaccination (after the first dose through 14 days after the second dose) and complete vaccination (at 15 days or more after receipt of the second dose), respectively. Sensitivity analysis using propensity score matching yielded a conservative estimate of 57.4% (95% CI: 9.2, 80.1) for complete vaccination. **Conclusion:** Primary immunisation with two doses of CoronaVac® vaccine provided satisfactory protection against SARI caused by SARS-CoV-2 in the short term. However, the duration of protection, incremental effectiveness induced by boosting, as well as performance against new variants need to be studied continuously.