

THE LANCET Microbe

Supplementary appendix

This appendix formed part of the original submission. We post it as supplied by the authors.

Supplement to: Wang SY, Juthani PV, Borges KA, et al. Severe breakthrough COVID-19 cases in the SARS-CoV-2 delta (B.1.617.2) variant era. *Lancet Microbe* 2021; published online Dec 3. [https://doi.org/10.1016/S2666-5247\(21\)00306-2](https://doi.org/10.1016/S2666-5247(21)00306-2).

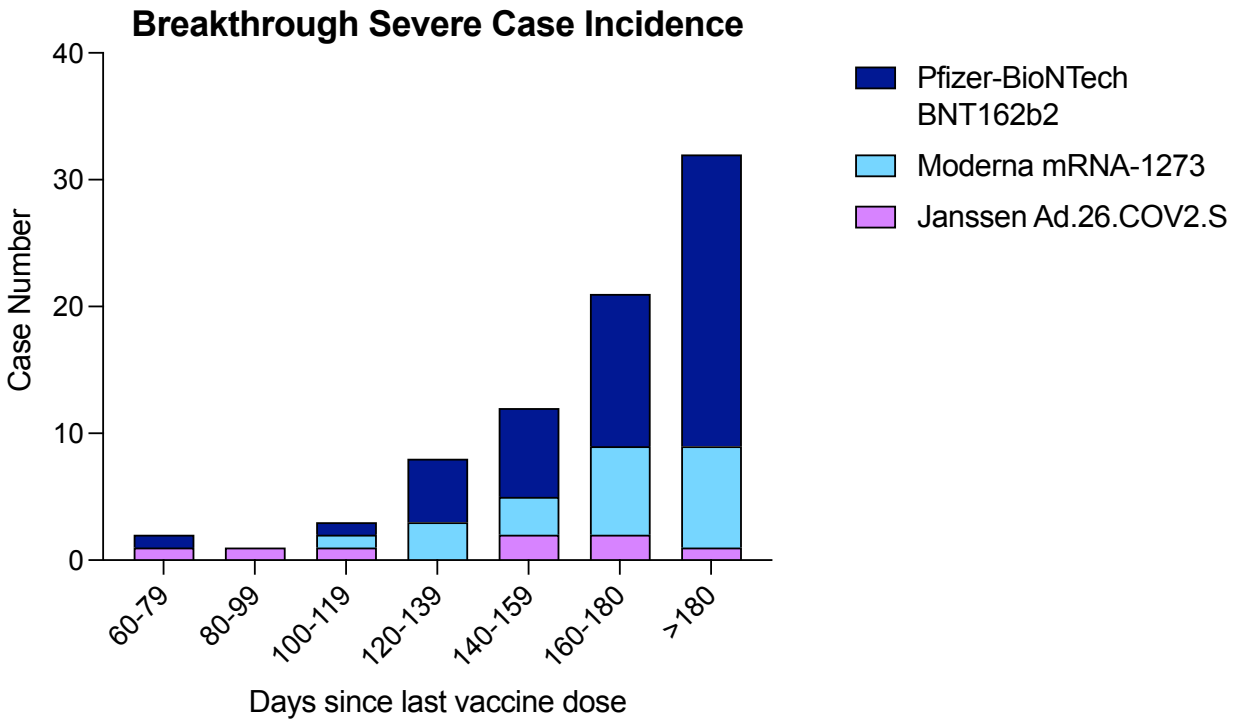
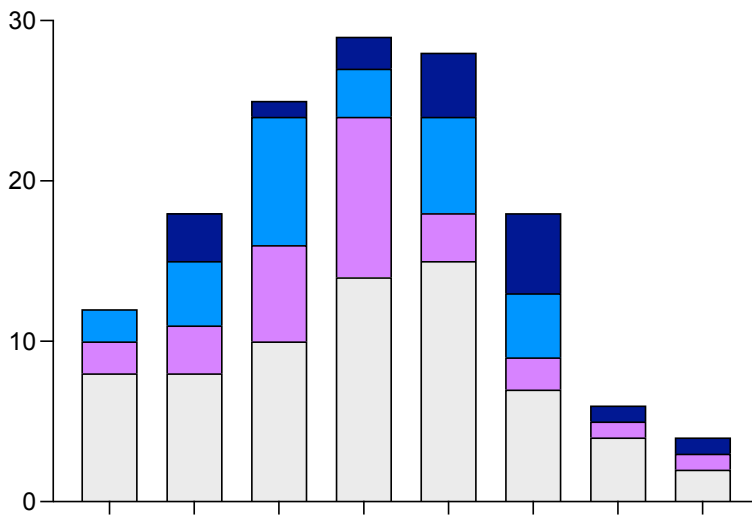


Figure 1: Time from last vaccine dose (either first dose of Janssen Ad.26.COV2.S or second dose of Pfizer-BioNTech BNT162b2 or Moderna mRNA-1273) to positive SARS-CoV-2 PCR test in fully vaccinated (at least 14 days after last vaccine dose) patients hospitalized with breakthrough severe COVID-19 infection. Case numbers are sub-categorized by vaccine subtype.

Unvaccinated Severe/Critical COVID-19 Infection



Breakthrough Severe/Critical COVID-19 Infection

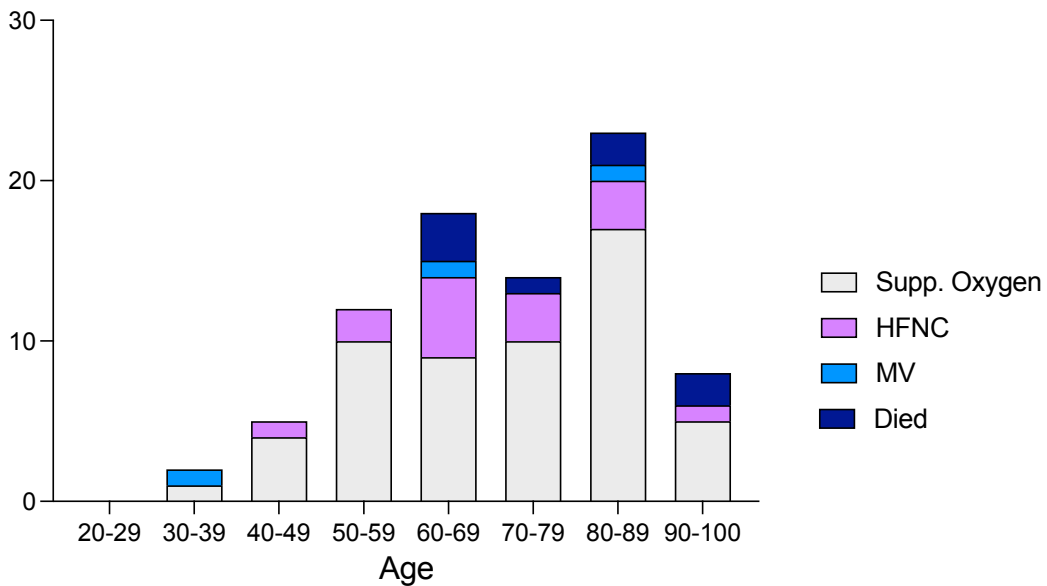


Figure 2. Age distribution of severe and critically ill patients with COVID-19 infection. Severe cases are defined as individuals who have SpO₂ <94% on room air. Critical cases are defined as individuals who have respiratory failure, septic shock, and/or multiple organ dysfunction. Deaths are in-hospital deaths related to COVID-19 infection. Supp. Oxygen: supplemental oxygen via nasal cannula; HFNC: high flow nasal cannula; MV: mechanical ventilation.

Table. Patient demographics by vaccination status.

	Unvaccinated (n=140)	Fully Vaccinated (n=82)	P- value
Age (years, mean (SD))	55.2 (17)	71.6 (15)	<0.001
Male gender (%)	66 (47)	49 (60)	0.07
Race/Ethnicity (%)			<0.001
White	71 (51)	66 (80)	
Black	42 (30)	11 (13)	
Hispanic	22 (16)	3 (4)	
Other/Unknown	4 (3)	2 (2)	
BMI (kg/m², mean (SD))	33.6 (9)	29.5 (7)	<0.001
CVD (%)	30 (21)	38 (46)	<0.001
Lung Disease (%)	24 (17)	28 (34)	0.004
Type 2 Diabetes (%)	38 (27)	30 (37)	0.14
History of Malig. (%)	8 (6)	17 (21)	<0.001
Immunosuppressed (%)	6 (4)	12 (15)	0.006

BMI: body mass index; CVD: cardiovascular disease (history of atherosclerotic cardiovascular disease, congestive heart failure); Malig: malignancy; Immunosuppressed: on chronic immunosuppressive agent; *P*-values were determined by student's t-test for age and BMI, otherwise Chi-squared test was used.