Supplement: Presence of antibodies to SARS-CoV-2 on admission is associated with decreased mortality in COVID-19 critical illness

Authors: F. Linzee Mabrey MD; Leila R. Zelnick PhD; Eric D. Morrell MD; Nicholas G. O’Connor; Andrew Hart; Mark M. Wurfel MD, PhD W. Conrad Liles MD, PhD; Pavan K. Bhatraju MD, MSc

Contents:
1. Supplemental Tables
Table S1: Intra-plate coefficient of variation (CV) by assay.

| Assay                        | %CV  |
|------------------------------|------|
| Anti-SARS-CoV-2 Spike        | 2.77%|
| Anti-SARS-CoV-2 Nucleocapsid | 5.05%|
| IL-6                         | 10.18%|

%CV is the Intraplate CV
Table S2. Association of ICU admission Total Spike protein antibody levels and nucleocapsid antibody levels with risk of hospital mortality.

| Antibody type and classification                  | N at risk (N events) | Unadjusted HR (95% CI) | p-value | Adjusted¹ HR (95% CI) | p-value |
|---------------------------------------------------|----------------------|------------------------|---------|-----------------------|---------|
| Absence of Spike Protein Antibodies (≤ 0.8)       | 46 (18)              | 1.0 (Ref.)             |         | 1.0 (Ref.)            |         |
| Presence of Spike Protein Antibodies (> 0.8)      | 47 (9)               | 0.39 (0.17, 0.90)      | 0.03    | 0.40 (0.17, 0.94)     | 0.04    |
| Absence of Nucleocapsid antibodies (≤ 1.0)        | 48 (17)              | 1.0 (Ref.)             |         | 1.0 (Ref.)            |         |
| Presence of Nucleocapsid Protein Antibodies (> 1.0)| 44 (10)              | 0.47 (0.21, 1.06)      | 0.07    | 0.47 (0.21, 1.08)     | 0.07    |

¹Adjusted for age, gender, and BMI
Table S3. Association of dexamethasone therapy with time-to-seroconversion, among those with absence of Anti-Spike antibodies on ICU admission.

| Dexamethasone* | N at risk (N events) | Unadjusted HR (95% CI) | p-value | Adjusted\(^1\) HR (95% CI) | p-value |
|----------------|----------------------|------------------------|---------|-----------------------------|---------|
| No             | 9 (3)                | 1.0 (Ref.)             |         | 1.0 (Ref.)                  |         |
| Yes            | 12 (11)              | 2.59 (0.78, 8.62)      | 0.12    | 2.42 (0.57, 10.37)         | 0.23    |

\(^1\)Adjusted for age, gender, and BMI

Time to seroconversion defined as difference from date of first PCR to date of first positive anti-Spike antibody test, censored at the date of final sample in those who were discharged or died.

*Excludes participants receiving convalescent plasma upon ICU admission.