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Conclusion: In conclusion, a high prevalence of SARS-CoV-2 IgM antibodies were frequently detected in acute sera from febrile patients with a clinical suspicion of arboviral disease. These results highlight the need to consider SARS-CoV-2 infection as a differential diagnosis of AFI in endemic areas for arbovirolosis, as well as consider co-infections between these pathogens.

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Does the Hygiene Hypothesis Explain COVID-19 Cases and Death? A Global Analysis

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Purpose: At the start of the COVID-19 pandemic there was widespread speculation on the role of the hygiene hypothesis in the incidence and mortality of COVID-19. This study sought to determine if such a correlation exists via a global analysis using many surrogate factors representing the hygiene hypothesis.

Methods & Materials: Publicly available data from 190 countries were gathered. These data included COVID-19 total case numbers and deaths through December 28, 2020; water, sanitation, and hygiene (WaSH) metrics; data on mortality due to various types of air pollution; and other factors such as control of solid waste, emission growth rate of methane and carbon dioxide, and daily adjusted life years lost to unsafe drinking water and sanitation.

Using IBM SPSS 27.0, these factors were analyzed using multiple regression analyses to determine the combination of factors most predictive of COVID-19 total cases and deaths. Separate regressions were conducted for the two criterion variables.

Results: The analysis revealed positive correlations between two predictor variables: a nation's mortality due to air pollution (MDAP) and control of solid waste (CSW), with COVID-19 total number of cases. The combination of predictors accounted for approximately 28% of the variance in total number of cases. Concerning the number of COVID-19 deaths, 9.6% of the variance was accounted for by MDAP. Findings support previous studies pointing to the likelihood of air pollution as a potential catalyst for COVID-19 spread.

Conclusion: Decreasing air pollution is an important mitigating strategy for dealing with respiratory viruses, as it correlates with decreased damage to the respiratory system and decreased time for the virus to circulate in denser particles of polluted air. Thus, MDAP is an effective predictor of COVID-19 cases, and to a lesser extent, deaths. The positive correlation with cases and CSW indicates a likelihood that lockdowns throughout the world wreaked havoc on solid waste disposal systems, particularly in nations with prior effective CSW mechanisms. Although the hygiene hypothesis is not supported, findings should encourage societies to implement policies which focus on minimizing air pollution and strengthen systems to CSW and attenuate a descent into another global pandemic.

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Multidrug resistant Gram-negative bacilli infection in critically ill patients with Coronavirus disease 2019

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Purpose: Rapid spread of multidrug resistant Gram-negative bacilli (MDR-GNB) infection in Coronavirus disease (COVID-19) critically ill patients was observed even in those without underlying diseases and in all age groups. We conducted a prospective cohort study to assess the risk factors for acquisition of MDR-GNB infection in COVID-19 patients and its impact on patients' outcome.

Methods & Materials: We included 43 consecutive patients with COVID-19 from a total of 8874 patients with COVID-19 admitted into the ICU of Aleman Hospital, Argentina, from May 1st 2020 to June 30th 2021. Followed up until death or 30 days after hospital discharge. We divided them into 4 groups: colonized with MDR-GNB (G1), colonized with MDR-GNB and infected with non-carbapenem resistant bacteria (G2), colonized and infected with MDR-GNB (G3), and infected with MDR-GNB without previous colonization (G4). Microbiological sampling was performed according to patient's conditions or epidemiological surveillance. Outcomes considered were length of hospital stay (LOS), mortality and readmission rate.

Results: Seven, five, six and twenty five patients were distributed respectively in G1, G2, G3 and G4. Male/female ratio was 2:1 with a median age of 68 years (IQR 62–75). Chronic pulmonary disease (18.6%) was the main comorbidity. Mean LOS was 40.16 days (P=0.79). Prolonged biomedical devices used were observed in 93% of patients (P=0.33). Ventilator associated pneumonia (n:15/36) and catheter-related bloodstream infection (n:16/36) were the most frequent infections (P=0.29, P=0.69). The most common carbapenem-resistant pathogens were *Klebsiella pneumoniae* (n: 38/60) and *Pseudomonas aeruginosa* (n:8/60). All patients were exposed to antibiotics before MDR-GNB was diagnosed. The first isolation of MDR-GNB was on average 14 days after hospital admission (P=0.84). Time between MDR-GNB colonization and infection was twice as much between G2 and G3 (8.4 Vs. 4 days, P=0.83). We observed no difference in all-cause mortality rate and readmission rate between the groups (P=0.75, P=0.97).

Conclusion: Prolonged ICU hospitalizations in addition to use of invasive devices and antibiotics exposure correlate with a higher risk of developing MDR-GNB colonization and infection in COVID-19 critically ill patients.

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