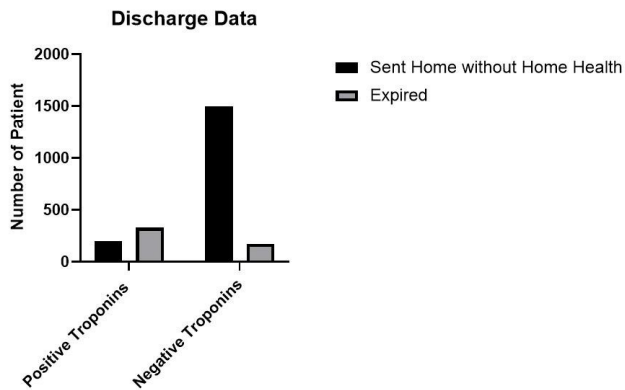


Differences in discharge between COVID-19 patients with and without elevated Troponins



Conclusion: Patients with at least one positive cTnI during their hospitalization had increased length of stay and decreased likelihood of being discharged home without home health. Using a large nationwide database we confirmed previously published findings in smaller patient populations associating cardiovascular disease with COVID-19 severity. Once patients were intubated, both subsets of patients with and without elevated cTnI had similar days on the ventilator, suggesting the COVID-19 acute respiratory distress syndrome (ARDS) has a more complicated relationship to troponin levels. These findings suggest that patients with an increased cTnI should be triaged to receive aggressive management.

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512. Kinetics of SARS-CoV-2 IgG responses among hospitalized patients with COVID-19

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Session: P-18. COVID-19 Pathogenesis

Background: The kinetics of antibody responses to SARS-CoV-2 infection are not fully understood. We analyzed IgG responses to the SARS-CoV-2 Spike protein receptor binding domain (RBD) in COVID-19 patients admitted to VA Greater Los Angeles (VAGLA) and correlated with clinical outcomes.

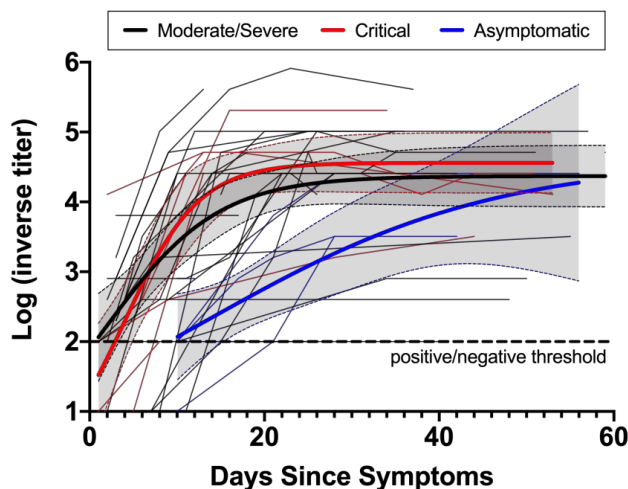
Methods: Serially admitted patients from March 20-May 10, 2020 with at least one available residual serum specimen were included in this analysis. Serum samples selected for analysis included first, last, and intermediaries spaced ≥ 5 days apart, as available. Anti-RBD IgG was detected with an enzyme immunoassay (EIA) using recombinant RBD protein. Serum from an uninfected individual collected April 2019 was used as control. The average optical density of the control in triplicate plus 3 standard deviations was considered the threshold positive/negative value. The highest dilution above the threshold value was considered the IgG titer. Clinical groups were defined as asymptomatic, moderate/severe (no ICU) or critical (mechanical ventilation, cytokine storm and/or death).

Results: Of the 43 consecutive patients admitted to VAGLA with COVID-19 in this analysis, 40 developed detectable RBD IgG responses with maximum inverse titers (MIT) ranging 100-819,200, geometric mean 12,152. Five patients remained asymptomatic but had positive EIAs with median MIT 3200 (IQR 800-3200). Twenty-five had moderate-severe illness with median MIT 25600 (IQR 6400-102400). Ten patients with critical disease had median MIT 38400 (IQR 8800-51200). The median time to positive IgG was 10 days for asymptomatic (IQR 10,10), 4 days for moderate-severe (IQR 3,15), and 7 days for critical (IQR 3.5,14.5). The figure depicts RBD IgG titers over time after onset of symptoms. Asymptomatic patients had a more gradual rate of increase and lower peak titers, while critical patients had the fastest rate of rise and the highest peak titers. Of the 21 patients with samples > 30 days after symptom onset (range 31-67 days), there was no evidence for decrease in anti-RBD IgG.

Kinetics of IgG to SARS-CoV-2 receptor binding domain by clinical severity

Conclusion: Following infection with SARS-CoV-2, disease severity correlates with both the rate of increase and peak in antibody titers. Anti-RBD IgG titers did not decrease over the observation period.

SARS-CoV-2 IgG (RBD)



Disclosures: All Authors: No reported disclosures

513. Viral kinetics of SARS-CoV-2 in patients with COVID-19

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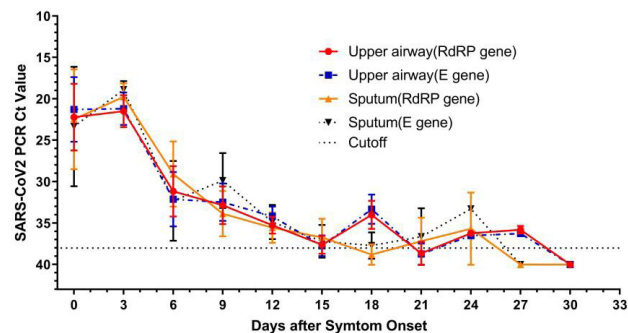
Session: P-18. COVID-19 Pathogenesis

Background: As only few studies have analyzed viral kinetics between the incubation and symptomatic periods of COVID-19 patients, we investigated the viral kinetics and compared viral loads between patients with mild and severe COVID-19.

Methods: We determined the viral kinetics of 10 patients diagnosed with COVID-19 at Chosun University Hospital. Six patients were classified into the "mild" group and 4 into the "severe" group according to supplemental oxygen use during admission. Samples were collected via nasopharyngeal swabs and sputum specimens. SARS-CoV-2 was detected using real-time reverse transcription-polymerase chain reaction (RT-PCR). Chest radiograph scores during hospitalization were obtained

Results: Ct values of the upper respiratory tract specimens were low during the early stages after symptom onset but gradually increased over time in both groups. The severe group had lower Ct values than the mild group. The Ct values of the RdRP and E genes on day 6 after symptom onset were significantly lower in the severe group than in the mild group ($p < 0.05$). Three of 6 patients had positive results on RT-PCR even before symptom onset; 2 of them had the lowest Ct values. The chest radiograph scores were higher in the severe group than in the mild group, and the score in the severe group was the highest at approximately 3 weeks after symptom onset.

Ct values when the RdRP gene and E gene were targeted to detect SARS-CoV-2 on the basis of the days after symptom onset in all the patients



Conclusion: Viral load and chest radiograph scores were significantly different between the severe and mild groups of COVID-19 patients.

Disclosures: All Authors: No reported disclosures