



COVID-19: Making sense of the literature

Antibody responses to SARS-CoV-2 in patients of COVID-19

Journal Article, Retrospective study

March 28, 2020

Zhao J, Yuan Q, Wang H, Liu W, Liao X, Su Y, et al. Antibody responses to SARS-CoV-2 in patients of novel coronavirus disease 2019. Clin Infect Dis. 2020 Mar 28

Summary

Methods:

- Data from a single hospital in China
- Serial plasma samples (n=535) from 173 hospitalised patients with SARSCoV-2 infection were tested for total antibody, IgM and IgG antibody by ELISA
- Confirmed cases were classified on the basis of real time RT-PCR done from respiratory sample

Results:

- Seroconversion rates for Total antibody, IgM and IgG were 93.1%, 82.7% and 64.7%, respectively
- Antibody test was negative in 12/173(6.9%) of patients where samples were available only from early phase of illness
- Median seroconversion time for Total antibody, IgM and then IgG were day-11, day-12 and day-14.
- The presence of antibodies was <40% among patients within 1-week of onset, and rapidly increased to 100.0% (Total antibody), 94.3% (IgM) and 79.8% (IgG) at day-15 after onset
- RNA detectability decreased from 66.7% (58/87) in samples collected before day-7 to 45.5% (25/55) during day 15-39
- A higher titer of antibody was independently associated with a worse clinical classification

Conclusion:

- The antibody detection offers vital clinical information during the course of SARS-CoV-2 infection

Appraisal

- Real time RT-PCR was done mainly from upper respiratory tract specimens, the presence of virus in lower respiratory specimens was not assessed.
- Persistence of antibodies in seroconverted patients was also not evaluated in the study
- Antibody cross-reactivity to other corona viruses mentioned as a possibility by authors

Opinion

This study highlights the importance of testing antibodies against SARSCoV-2 after the first week. ICMR has endorsed antibody testing for the current COVID-19 pandemic in hotspots/cluster, in symptomatic ILI (influenza-like illness), after seven days of illness (version 4, dated 09.04.2020). WHO has advised the use of rapid antibody tests only for disease surveillance and epidemiologic research.

Appraisers

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