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SCIENTIFIC LETTER

COVID-19 Antibody Status and Its Impact on the Severity of Dengue Fever among Children: An Observational Study

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To the Editor: Dengue is an endemic infection in our country while COVID-19 is a recent pandemic. It is important to know the dynamic between the two infections, and if there is any cross-protective effect or antibody-dependent enhancement effect [1, 2]. This is an analytical cross-sectional study from a pediatric tertiary care center to know the prevalence of IgG SARS-CoV-2 antibody titers among children admitted with dengue, and its impact on the severity of dengue. Serum IgG SARS-CoV-2 antibody titers were measured and compared among 124 children, aged 1 mo to 12 y, admitted with varying severity of dengue after approval from the Institutional Ethics Committee.

The overall prevalence of IgG SARS-CoV-2 antibody reactivity (positivity) was 54% (67/124) [3]. In our study population, 29 (23.4%) children had severe dengue, 55 (44.4%) had dengue with warning signs, while 40 (32.3%) had dengue without warning signs. Among the 29 children with severe dengue, 20 (69%) did not have SARS-CoV-2 antibodies, while only 9 (31%) were SARS-CoV-2 reactive ($p < 0.01$). Among the 40 dengue children without warning signs, 34 (85%) children were SARS-CoV-2 reactive and 6 (15%) were antibody nonreactive ($p < 0.01$). Among the dengue children with warning signs, 24 (44%) children were antibody reactive and 31 (56%) were nonreactive ($p = 0.046$). SARS-CoV-2 antibody reactivity rate among children with severe dengue was 31.03% (9/29); among children with dengue with warning signs was 43.64% (24/55); and among children with dengue without warning signs was 85% (34/40). IgG SARS-CoV-2 antibody reactivity rate was inversely proportional to the severity of dengue. The initial and lowest platelet counts were much lower in antibody nonreactive groups, while the other clinical and laboratory parameters and complications were similar in both the groups.

IgG SARS-CoV-2 antibodies may have a protective effect against the development of severe dengue which could be due to the effect of cross-reacting neutralizing antibodies [4].

Declarations

Conflict of Interest None.

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