Indian Journal of Pediatrics (September 2022) 89(9):933
https://doi.org/10.1007/s12098-022-04299-6

SCIENTIFIC LETTER

Comparative Analysis of COVID-19 in Adolescents and Younger Children

Shreyash Agrawal[1] · Amitabh Singh[2] · Pranav Ish[1] · Neeraj Kumar Gupta[1] · Ajay Kumar[2] · Rani Gera[2] · Nitesh Gupta[1]

Received: 27 April 2022 / Accepted: 31 May 2022 / Published online: 13 July 2022

To the Editor: The pediatric age group (0–19) is reported to have milder manifestations of COVID-19 [1]. However, adolescents' disease profiles are not well reported in the literature. Our retrospective study compared the demographic, clinical, and outcome data of two groups (0–10 y; $n=262$ vs. 10–19 y; $n=121$) infected with SAR-CoV-2 admitted to a tertiary care superspecialty public sector hospital in New Delhi, between March 1, 2020 and October 17, 2021.

Younger children (0–10 y) had a statistically significant longer duration of hospital stay (11 d vs. 17 d), duration of fever (11 d vs. 6 d), raised inflammatory markers, shock, and higher incidence of multisystem inflammatory syndrome associated with COVID-19 (MIS-C) and need for intensive care unit (ICU) (oxygen requirement and mechanical ventilation). In the MIS-C cohort, the majority of adolescents had involvement of respiratory (96% vs. 90%), hematologic (86% vs. 81%), and gastrointestinal (66% vs. 57%) systems, compared to higher cardiac (42% vs. 19%) and dermatologic (37% vs. 19%) involvement in the younger age group similar to published literature [2]. The high incidence of critical MIS-C (40% of adolescents and 60% in younger age group) is comparable to the 44%–66% critical MIS-C seen in similar studies from the US [3].

Nearly half of the study participants in both groups had comorbidity (51% vs. 47%). Pulmonary comorbidities (including tuberculosis and asthma) were a little higher in adolescents (9% vs. 16%), The higher incidence of comorbidity and multisystem involvement explains the higher mortality rate seen in the two groups (18% vs. 16%) and is similar to the 22% reported by a German study with MIS-C patients (0–16) [4]. Our study confirms that the majority of children with COVID-19 have mild-to-moderate symptoms but mortality can be high with comorbidity and those developing critical MIS-C.

Declarations

Conflict of Interest None.

References

1. Li LQ, Huang T, Wang YQ, et al. COVID-19 patients' clinical characteristics, discharge rate, and fatality rate of meta-analysis. J Med Virol. 2020;92:577–83.
2. Feldstein LR, Rose EB, Horwitz SM, et al. Multisystem inflammatory syndrome in U.S. children and adolescents. N Engl J Med. 2020;383:334–46.
3. McMurray JC, May JW, Cunningham MW, Jones OY. Multisystem inflammatory syndrome in children (MIS-C), a post-viral myocarditis and systemic vasculitis-a critical review of its pathogenesis and treatment. Front Pediatr. 2020;8:626182.
4. Mehler K, Jung N, Oberthuer A. Is it all MIS-C? Unusual findings in a series of nine German patients with multi-system inflammatory syndrome in children after SARS-CoV-2 infection. Int J Infect Dis. 2021;106:405–8.

✉ Nitesh Gupta
niteshgupta2107@gmail.com

[1] Department of Pulmonary, Critical Care and Sleep Medicine, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi 110029, India

[2] Department of Pediatrics, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi, India