Differences of Immune response between Child and Adult with COVID-19

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Abstract

Background: Over 2,000,000 infected severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).Although there are more and more reports on coronavirus disease 2019 (COVID-19), it is unclear why infected children show the milder symptoms than adults. Methods:A retrospective case study was performed in two designated hospitals for COVID-19 .Patients (56 children and 63 adults) with confirmed SARS-CoV-2 infection and mild pneumonia were randomly enrolled in this study. Results: The median age of children was 7.0 years, and 51.79% of them were boys. For the adults, the median age was 57 years, and47.62% were men.The most common symptoms were fever , cough , sputum and diarrhea.There were not significant different in symptoms between children and adult patients.In immunological indices on admission , adult patients displayed typical leukopenia, and markedly higher lever of IL-2, IL-4, IL-6 compared to child patients. The elevation of IL-2,IL-4 and IL-6 in adult induced to more extensive lung injury. Conclusion: The effective and non-aggressive immune response successfully resisted SARS-CoV-2 invasion to maintain the mild symptom in child patients.The correlation of higher IL-2,IL-4,IL-6 to lung injury distribution might be a evidence to prevent the excessive cytokine for avoiding further lung damage.

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