## **EDITORIAL**



## Management of children with COVID-19: experiences from China

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The coronavirus disease 2019 (COVID-19) global pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a major public health event. As a special population, children have special respiratory tract structure characteristics, immature immune system, and susceptibility to respiratory virus infections. Therefore, it is highly important for clinicians to treat the infected children cautiously despite most pediatric patients have milder symptoms and better prognosis compared with the adult patients.

The June issue of "World Journal of Pediatrics" covers multiple COVID-19-related papers and other important studies. All the COVID-19-related papers are free to access. This issue highlights the efforts towards strategies and management of COVID-19 in children in China, which include recommendations for infection control and management in children with COVID-19, research articles for case sharing, and viewpoints for COVID-related important issues.

The recommendations for prevention, diagnosis, and treatment of children with COVID-19 summarized epidemiology, clinical characteristics, diagnostic criteria, clinical classifications, differential diagnosis, and treatments [1–3]. The early warning indicators for severe pediatric cases have also been summarized in the updated version which is of utmost importance for clinical practice. These recommendations provide systemic guidance on managing COVID-19 in children, and the optimized strategies for managing pediatric patients at various severities. These recommendations are summaries of experiences in managing COVID-19 in China, which are valuable for better prevention, diagnosis, and treatment of COVID-19 in children worldwide. Besides the above recommendations for clinical experience sharing,

a review by Ma et al. [4] focusing on the management strategies of neonatal jaundice during the COVID-19 pandemic is also included.

Three research articles cover severe cases, infant cases, and family cluster cases. The first article by Sun et al. [5] presents detailed clinical data of eight severe or critically ill cases with COVID-19. The authors report a cytokine storm in these severe cases, which is even more serious in critically ill cases, which indicates that the early identification of the specific features of severe cases and timely treatment are of vital importance. The next article by Sun et al. [6] retrieves and analyzes the clinical data of 36 infants with COVID-19 in detail, and discovers that lymphocytosis, elevated CD4 and IL-10, and co-infections are common in infants with COVID-19, which are different from adults. In the final article, Ji et al. [7] report two confirmed pediatric cases from two family clusters. The authors describe clinical features and laboratory examination results of the two children, who present with mild symptoms and recover quickly after general and symptomatic treatments. Their study highlights the importance that pediatricians should be vigilant in treating patients with family cluster.

Four viewpoints deserving attention and discussion are concerned with COVID-19-related issues including pharmaceutical care recommendations for antiviral treatments, calling for clinical trial in pediatric patients, children's physical and mental needs during the epidemic, and management workflow of neonates with COVID-19 [8–11].

We hope that this issue will provide clinicians with an up-to-date and comprehensive overview of the strategies and management for children with COVID-19, and will provide an exchange platform for global knowledge sharing.

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## Compliance with ethical standards

Ethical approval Not needed.

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## References

- Shen KL, Yang YH, Wang TY, Zhao DC, Jiang Y, Jin RM, et al. Diagnosis, treatment, and prevention of, 2019 novel coronavirus infection in children: experts' consensus statement. World J Pediatr. 2020. https://doi.org/10.1007/s12519-020-00343-7.
- Shen KL, Yang YH, Jiang RM, Wang TY, Zhao DC, Jiang Y, et al. Updated diagnosis, treatment and prevention of COVID-19 in children: experts consensus statement (condensed version of the second edition). World J Pediatr. 2020. https://doi.org/10.1007/ s12519-020-00362-4.
- Chen ZM, Fu JF, Shu Q, Chen YH, Hua CZ, Li FB, et al. Diagnosis and treatment recommendations for pediatric respiratory infection caused by the, 2019 novel coronavirus. World J Pediatr. 2020. https://doi.org/10.1007/s12519-020-00345-5.
- 4. Ma XL, Chen Z, Zhu JJ, Shen XX, Wu MY, Shi LP, et al. Management strategies of neonatal jaundice during the coronavirus

- disease 2019, outbreak. World J Pediatr. 2020. https://doi.org/10.1007/s12519-020-00347-3.
- Sun D, Li H, Lu XX, Xiao H, Ren J, Zhan FR, et al. Clinical features of severe pediatric patients with coronavirus disease 2019 in Wuhan: a single center's observational study. World J Pediatr. 2020. https://doi.org/10.1007/s12519-020-00354-4.
- Sun D, Chen X, Li H, Lu XX, Xiao H, Zhang FR, et al. SARS-CoV-2 infection in infants under 1 year of age in Wuhan City, China. World J Pediatr. 2020. https://doi.org/10.1007/s12519-020-00368-y.
- Ji LN, Chao S, Wang YJ, Li XJ, Mu XD, Lin MG, et al. Clinical features of pediatric patients with COVID-19: a report of two family cluster cases. World J Pediatr. 2020. https://doi.org/10.1007/ s12519-020-00356-2.
- Wang Y, Zhu LQ. Pharmaceutical care recommendations for antiviral treatments in children with coronavirus disease 2019. World J Pediatr. 2020. https://doi.org/10.1007/s12519-020-00353-5.
- Ni SQ, Fu QB, Shou XY, Shu Q. Take precautions beforehand: calling for clinical trials of pediatric drugs for treating coronavirus disease 2019. World J Pediatr. 2020. https://doi.org/10.1007/s1251 9-020-00355-3.
- Zhang XB, Gui YH, Xu X, Zhu DQ, Zhai YH, Ge XL, et al. Response to children's physical and mental needs during the COVID-19 outbreak. World J Pediatr. 2020. https://doi. org/10.1007/s12519-020-00365-1.
- Xiao TT, Yan K, Wang LS, Zhou WH. What can we learn from neonates with COVID-19? World J Pediatr. 2020. https://doi. org/10.1007/s12519-020-00376-y.

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