

# Association of COVID-19 coronavirus and Kawasaki syndrome like features in 1-5 years old children

Stefan Bittmann\*, Anne Weissenstein, Gloria Villalon, Elena Moschüring-Alieva, Elisabeth Luchter

Department of Pediatrics, Ped Mind  
Institute (PMI), Gronau, Germany

\*Author for correspondence:  
Email: stefanbittmann@gmx.de

Received date: May 02, 2020  
Accepted date: May 04, 2020

Copyright: © 2020 Bittmann et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Bittmann S, Weissenstein A, Villalon G, Moschüring-Alieva E, Luchter E. Association of COVID-19 coronavirus and Kawasaki syndrome like features in 1-5 years old children. *Neurosci Chron* 2020; 1(1):4-5.

## Editorial

In the nightmare of the coronavirus pandemic that is spreading around the world, parents could take comfort in one thing - early reports that the virus mysteriously spares children, even though this often leads to critical illness in older people. An article published in the Journal "Pediatrics", based on 2,143 young people in China, provides the most comprehensive evidence of the spread of the virus among children, and there is bad news and good news [1]. The study confirms that coronavirus infections in children are generally less severe, with more than 90 percent having mild to moderate disease or even being asymptomatic and have more transmitter function for elder people.

Actually, of particular interest to pediatricians is a group of seven infants and two pre-school children aged 1 to 5 years who were in a critical condition (69 percent of all severely ill), and the 33 infants and 34 in the 1 to 5 year age range who had a serious illness (60 percent of all severely ill). The study suggests that "small children, especially infants, were at risk". In the last weeks, severe cases of 1-5 years-old children (including newborn, baby, toddler and pre-schooler) were described having a severe medical course with fatal outcome. Many of these children were initially admitted to hospital due to gastrointestinal complaints and diarrhea. A few of them revealed Kawasaki syndrome like symptoms with vasculitis and seizures were found. These are very severe and rare new entities in children described in Spain, Italy, United Kingdom and the US. COVID-19 virus seems to trigger more serious conditions like Kawasaki disease or toxic shock syndrome conditions in children. Why these few pediatric cases develop mysterious medical courses of COVID-19 positivity is, to date, not clearly ruled out and needs further research. Looking back in former times, Kawasaki disease in children was associated with coronavirus like HCoV-NH coronavirus (New Haven coronavirus) infections before [2,3]. In an editorial by McIntosh, made a compelling argument for a possible association between respiratory coronavirus (HCoVs) and Kawasaki disease, motivating further study using broader epidemiological and non-epidemiological criteria [2,3]. Kawasaki disease includes a systemic vasculitis of childhood that may result in aneurysms of coronary arteries. Classical Kawasaki disease is based on clinical features like fever longer 5 days, bilateral conjunctivitis, erythema of the mouth or pharynx, strawberry tongue, polymorphous rash and cervical lymphadenopathy. To date, more than 20 antiviral agents against COVID-19 infection were summarized in detail [4] and could be a treatment option for children in this severe condition [4]. To date, in these more than 20 viral treatment options, 24 clinical trials were started in COVID-19 patients and exactly summarized in detail [4]. A new study by Leung et al., published early as preprint in medRxiv on 30th April 2020, revealed promising clinical grade SARS-CoV-2 specific and adoptive T cells to treat severe COVID-19 patients in serious conditions [5]. The authors demonstrated that isolated specific SARS-CoV-2 T-cells can be isolated from blood of convalescent donors rapidly and possibly used in severe COVID-19 children with underlying new and mysterious conditions [5]. Further research in this new entity of COVID-19 pediatric infections with Kawasaki like symptoms or toxic shock syndrome like symptoms are necessary.

## References

1. Dong Y, Mo X, Hu Y, Qi X, Jiang F, Jiang Z, et al. Epidemiological characteristics of 2143 pediatric patients with 2019 coronavirus disease in China. *Pediatrics*. 2020 Mar 1.
2. McIntosh K. Coronaviruses in the limelight. *The Journal of Infectious Diseases* 2005;191(4):489-491.
3. Esper F, Shapiro ED, Weibel C, Ferguson D, Landry ML, Kahn JS. Association between a novel human coronavirus and Kawasaki disease. *The Journal of Infectious Diseases*. 2005 Feb 15;191(4):499-502.
4. Rosa SG, Santos WC. Clinical trials on drug repositioning for COVID-19 treatment. *Revista Panamericana de Salud Pública*. 2020; 44:e40.
5. Leung W, Soh TG, Linn YC, Low JG, Loh J, Chan M, Chng WJ, Koh LP, Poon ML, Ng KP, Kuick CH. Successful manufacturing of clinical-grade SARS-COV-2 specific T cells for adoptive cell therapy. *medRxiv*. 2020 Jan 1.