

Kawasaki disease outbreaks in COVID-19 era

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ABSTRACT

Kawasaki disease (KD) is one of the most common pediatric vasculitis syndrome which mainly affects children less than 5 years of age and it is characterized by pathognomonic clinical manifestations and possible severe vascular complications. In this article we discussed the possible association between COVID-19 and Kawasaki disease. Making a correct diagnosis of Kawasaki Disease in a properly timely manner is really important in order to initiate an appropriate treatment and to prevent clinical deterioration and vascular complications.

EDITOIRAL

Kawasaki disease (KD) is one of the most common pediatric vasculitis syndrome which mainly affects children less than 5 years of age and it is characterized by pathognomonic clinical manifestations and possible severe vascular complications. KD only rarely occurs in adults. Studies of hospital discharge records by the United States Centers for Disease Control (CDC) estimated an overall annual incidence of 20 per 100.000 children younger than five years [1]. As of April 2020, the etiology is still unknown, despite an infectious trigger of the disease is strongly suspected [2]. Certainly, the substrate underlying KD is the combination of a genetically susceptible children with an infectious agent, which determines the abnormal immune response. From a pathophysiological point of view, different infectious stimuli probably converge on a similar or common immune process associated with the activation of T cells, innate immune cells, and endothelial cells [3]. In literature, an association between occurrence of KD and viral detection has been previously reported, thus confirming the seasonal, temporal and regional pattern typical of this disease [4]. Nevertheless, several possible pathogenic agents have been proposed, both bacteria or viruses, including viruses of the Corona viridae family. Different studies have shed some light on the association between various human coronaviruses and KD, and lately particularly HCoV-229E and KD [5]. Nowadays, the pandemic of COVID-19 has exposed a great number of children to this novel infectious agent. As reported by the World Health Organization, as of April 29, 2020, in the

world 2.995.758 people have been tested positive for SARS-CoV-2. The precise number of children affected worldwide is still unknown, however according to New York Health the incidence rate between 0-17 years of age is 205.86 Cases/100.000. In Italy, Spain and United Kingdom, in the last few weeks, dozens of KD or Kawasaki-like disease cases of children affected by COVID-19 have been described. Overall annual incidence of KD in Bergamo, Italy, has approximated to 3 cases per year: in COVID-19 era, in March-April, 2020, 10 cases have already been reported, with an higher occurrence in older children, with an average age of 7 – 8 years. Different European societies of pediatrics signaled an increasing number of cases of KD. It has been highlighted that in a not negligible percentage of cases, KD presented with an incomplete and atypical clinical picture, showing resistance to intravenous immunoglobulin treatment and a tendency to evolve towards a macrophage activation syndrome (MAS), which required aggressive therapies and, not infrequently, admission to an intensive care unit. Attention should be paid to this possible association, to diagnose KD in a properly timely manner in order to initiate an appropriate treatment and to prevent clinical deterioration and vascular complications. Further research is warranted.

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