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COVID-19 Pandemic and the Incidence of Kawasaki Disease in Pediatric Patients

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In late December 2019, clusters of pneumonia cases of unknown etiology emerged in Wuhan City, China. The increasing incidence of cases revealed compelling evidence of human-to-human transmission. Shortly after, the disease status changed from epidemic to pandemic. Numerous cases in East Asia, middle-east, America, and Europe have been reported by now (1). This pandemic attracted the healthcare system's attention and imposed an additional burden on it. Additionally, health care providers have focused on COVID-19 management during the pandemic. The majority of hospitalized cases with severe conditions consist of middle-aged adults as well as elderly patients, and it has been considered that COVID-19 does not cause severe conditions in pediatric patients (2). So, children are assumed as a safe group, and the effects of COVID-19 on them may not be investigated as it is required. With a more prevalence among children under 5 years of age in developed countries, Kawasaki disease (KD) is known for acute vasculitis of childhood, which causes acquired heart disease in children (3). Prompt diagnosis of KD and treatment with intravenous immunoglobulin (IVIG) prevents coronary artery aneurysms (CAA) . Without timely treatment, CAAs could occur in up to 25% of children with Kawasaki disease (4).

Various studies have described an association between viral respiratory infections and KD. Up to 42% of patients with KD were reported positive for a respiratory viral infection within 30 days leading to the diagnosis of KD (5, 6). Esper et al. demonstrated that there was a significant association between Human Coronavirus-NH infection and Kawasaki disease in their study population (7). Recent serological studies in COVID-19 cases demonstrated a significantly higher number of the CD8+ T cells in pediatric comparing to adult patients (8). Also, a recent study by Kobayashi et al. approved previous knowledge about the presence of CD8+ T cells in vasculitis lesions of patients with KD (9).

Kawasaki disease may result from an abnormal clonal expansion of CD8+ T cells in response to an infectious agent (10). Therefore, the predisposition of the host and antigenic properties of the virus, may cause the vasculitis of Kawasaki disease (7). Considering the outbreak of COVID-19 and the assumption of pediatric patients as a safe group, precise examination of children for KD has to take place as a high priority action for clinicians.

As there is a potential for missed or late diagnosis of Kawasaki disease in children, there is an urgent need for critical multi-specialty consideration. Specialists such as pediatricians, general practitioners, and also dental practitioners are in the frontline. The role of dental practitioners is critical according to the fact that frequent symptoms of KD, such as red lips with fissure, strawberry tongue, and neck lymphadenopathy can be diagnosed in early stages by them.

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