Review of “An outbreak of severe Kawasaki-like disease at the Italian epicentre of the SARS-CoV-2 epidemic: an observational cohort study”


One-Minute Summary

- This retrospective chart review examined the records of pediatric patients hospitalized with Kawasaki disease at one institution before (Group 1: 19 patients diagnosed from Jan 1, 2015 to Feb 17, 2020) and during (Group 2: 10 patients diagnosed from Feb 18, 2020 to Apr 20, 2020) the Coronavirus Disease 2019 (COVID-19) outbreak in Bergamo, Italy.
- Demographic and clinical characteristics of Group 1 (n=19) vs. Group 2 (n=10):
  - Incidence per month: 0.3 vs. 10 (p<0.00001)
  - Mean age (standard deviation [SD]): 3.0 years (2.5) vs. 7.5 (3.5) (p=0.00035)
  - Mean body mass index (kg/m²) (SD): 15.9 (1.7) vs. 19.1 (3.2) (p=0.0016)
  - Kobayashi score ≥5: 2/19 (10%) vs. 7/10 (70%) (p=0.0021)
  - Abnormal echocardiogram: 2/19 (10%) vs. 6/10 (60%) (p=0.0089)
  - Macrophage activation syndrome (MAS): 0/10 (0%) vs. 5/10 (50%) (p=0.021)
  - Kawasaki disease shock syndrome (KDSS): 0/10 (0%) vs. 5/10 (50%) (p=0.021)
  - Female: 12/19 (63%) vs. 3/10 (30%) (p=0.13)
  - Incomplete Kawasaki disease: 6/19 (31%) vs. 5/10 (50%) (p=0.43)
- Serologic testing was offered to all patients in Group 2 and two patients in Group 1. 2/2 patients in Group 1 had COVID-19-negative serology. 8/10 patients in Group 2 had COVID-19-positive serology (5 of these 8 patients had exposure to a confirmed COVID-19 case, and 2 of these 8 also tested positive for COVID-19 by nasal swabs).
- The authors corrected for number of patients seen at the emergency department during the two periods and the incidence of Kawasaki disease in Group 2 (3.5%, 95% confidence interval [CI]: -3.5 to 3.6) was significantly higher than in Group 1 (0.019%, 95% CI: -0.002 to 0.0019).
- The authors hypothesize that COVID-19 is responsible for the 30-fold increase in the incidence of Kawasaki-like disease in Bergamo, Italy as patients diagnosed during the COVID-19 epidemic were more likely to test positive for antibodies specific to the COVID-19 virus.
- As the presentation of patients since the start of COVID-19 epidemic differs from classical Kawasaki disease (non-exudative conjunctivitis, mucosal changes, lymphadenopathy, swollen extremities), the authors have called it Kawasaki-like disease. Patients diagnosed with Kawasaki-like disease are older children, with more cardiac involvement, MAS and KDSS.
Additional Information

- The authors retrospectively reviewed records of patients with a diagnosis of Kawasaki disease admitted to the General Paediatric Unit of Hospital Papa Giovanni XXIII (Bergamo, Italy).
- The authors defined Kawasaki-like illness as classic or incomplete based on established criteria (McCrindle et al.). In addition, the authors defined MAS and KDSS according to established criteria (Ravelli et al., Kanegaye et al., respectively).
- The city of Bergamo has the highest rate of COVID-19 infections and deaths in Italy.
- Group 2 patients, compared to Group 1, had elevated C-reactive protein, neutrophils and ferritin, with decreased white cell count, lymphocytes, platelets and sodium.

PHO Reviewer's Comments

- An additional commentary on Kawasaki-like disease and its relationship with COVID-19 is available (Viner and Whittaker).

Citation


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