

## SYNOPSIS

05/15/2020

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

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### 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/m<sup>2</sup>) (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.**

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## 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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