

RAG: RAPID SIGNAL ASSESSMENT: KAWASAKI DISEASE AND COVID-19

29/04/2020

Signal : 28/04/2020

U.K. warned that the coronavirus could be linked to Kawasaki-like disease. This observation is several countries but not causal link is established.

Kawasaki is more common in Asian children, but no mention of this condition in scientific publications from China despite high rates of Covid-19.

Kawasaki is a rare but serious illness in children but treatable.

Children Similar to SARS and MERS, it appears that COVID-19 infections are less frequently observed in children and present with milder symptoms than in adults: of the 266 393 cases reported to TESSy as of 6 April with known age (<10 years (1.1%), 10–19 years (2.5%)).

Diseases

The etiology of Kawasaki disease is unknown, but the epidemiology and clinical presentation suggest an infection (described after multiple viral infections like common cold or flu) or an abnormal immunologic response to an infection in genetically predisposed children.

Kawasaki disease is a vasculitis of medium-sized arteries, most significantly the coronary arteries, which are involved in about 20% of untreated patients. It is characterized by prolonged fever, exanthem, conjunctivitis, mucous membrane inflammation, and lymphadenopathy and can be complicated by coronary artery aneurysms.

Incidence: It occurs in 4-25 in every 100,000 children each year, mostly < 5 y (peak, 18 to 24 months)

Seasonality: Higher incidence in winter and early spring

Gender: Slightly higher prevalence in boys than in girls

Treatment: intravenous immunoglobulin and anti-inflammatory drugs

Outcome: more favorable evolution when treated.

Situation in Belgium

Kawasaki disease is well-known.

It is not surprising to have Kawasaki disease.

Some cases of Kawasaki disease already described in Belgium with favorable evolution.

Among the 108 registration of COVID-19 infection in <1 month to 10 years old children since mid-march, all had a favorable evolution.

Conclusion

Similar to other countries, pediatricians have also flagged the occurrence of an acute inflammatory disease in Belgium. The number of cases is still under evaluation, but these events are very rare.

It is currently unknown whether or not there is a (causal) link with COVID-19; this is subject of further evaluation and investigation.

We are collecting data on hospitalized COVID-19 children since mid-march. Until now, information on 108 children (aged between <1 month and 18 yrs) was collected, all with a favorable evolution and outcome.

Actions

Sciensano will add some specific variables in the existing survey in order to record any possible new cases with these unusual presentations.

Pediatric task force will make a press release. We recommend that this release will be supported during the next daily press communication.

Conclusion validated by

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Risk description and proposed measures. Not a decision !!!

Reference about impact COVID-19 in children

ECDC 9th Risk Assessment:

Children Similar to SARS and MERS, it appears that COVID-19 infections are less frequently observed in children and present with milder symptoms than in adults [79]. It appears that children are less likely to be tested due to the mild presentation of disease [79]. In a large case series from China, including 2 135 paediatric cases, only 34.1% of the cases were laboratory-confirmed [80]. In the same study, 4.4% of the children were asymptomatic [80]. Although the course of disease in children tends to be milder, shorter and with respiratory or gastrointestinal symptoms [79], severe disease has also been reported. Reports from China indicate that between 2.5% and 5.2% of paediatric cases had severe disease [80,81]. Critically ill children accounted for less than 1% of all reported cases in China [82,83]. Recent data from the US showed that 5.7% of paediatric cases were hospitalised, a majority of them were infants [84]. Three fatal cases were also reported in the US, although their cases histories are under review to confirm whether COVID-19 was the cause of death [84]. Few fatal paediatric cases have been reported in Europe and the Americas, as summarised in the eighth update of ECDC's Rapid Risk Assessment [85] Children are likely infected in their households [79]. Two studies on household transmission estimated the household secondary attack rate (SAR) to be 16.3% [86] and 13.8% [87]. Age-stratified analysis showed that the SAR in children was 4.7% compared with 17.1% in adults (≥ 20 years of age) [86], and that the odds of infection in children was 0.26 times (95%CI 0.13-0.54) of that among the elderly (≥ 60 years of age) [87]. **Child-to-adult transmission appears to be uncommon.** In the investigation of the first outbreak in France, one infected child attended three different schools while symptomatic and despite 112 contacts identified (including children and teachers), no symptomatic secondary cases were detected [88]. There are few case reports, with poorly documented data, describing a paediatric case as potential source of infection for adults [32,89]. Data from population-based and cross-sectional studies indicate that children are unlikely to be primary source cases. In Vo' (Italy), two cross sectional studies, including more than 2500 people each, showed that none of the 234 children (≤ 10 years of age) tested were infected [90]. Among the 11-20 year old inhabitants, 1.2% and 1.0% tested positive in the two surveys compared to the population averages of 2.6% and 1.2%, respectively [90]. In a population-based screening programme in Iceland, none of the 848 children under 10 years of age tested positive, in comparison to 0.8% of the whole sample of 13 080 people [91]. In a targeted testing of symptomatic people, or high-risk contacts, 38 (6.7%) children under the age of 10 tested positive, in comparison to 13.7% of those who were 10 years or older [91].

<https://www.ecdc.europa.eu/sites/default/files/documents/covid-19-rapid-risk-assessment-coronavirus-disease-2019-ninth-update-23-april-2020.pdf>

ECDC 8th Risk Assessment:

Children made up a very small proportion of the 266 393 cases reported to TESSy as of 6 April (with known age (<10 years (1.1%), 10-19 years (2.5%)). The male-to-female ratio in children and young people (19 years or below) was 1.0:1 compared to 1.1:1 overall. The age distribution observed in the EU/EEA and the UK reflects testing policies and case definitions which usually include symptoms, and it is possible that the small proportion of infected children reflects a lower risk of children developing COVID-19 symptoms [51]. Mild respiratory or gastrointestinal symptoms are predominant among children [52,53]. Zheng et al reported two cases of severe disease in children with underlying conditions, requiring invasive mechanical ventilation. Both of them had recovered partially or fully by the end of the study period [54]. A network of paediatric ICUs (PICU) have reported 106 critically children in the USA since the beginning of the COVID-19 outbreak and one death [55].

Health authorities and media have reported few fatal paediatric cases: one case in Panama (13 years of age), two cases in USA (an infant and a five-year old), one case in Belgium (12 years of age), one case in the UK (13 years of age) and one case in France (16 years of age) [56-60].

Data in TESSy show no difference between age groups in terms of the most common symptoms, but fever was less commonly reported among those aged 10-19 years of age (38%, compared to 48% for all ages) and a sore throat was less common among those aged <10 years (6%, compared to 13% for all ages).

Asymptomatic cases in infants and children have also been reported [61-64]. Two studies on patients with positive laboratory results reported that 10 out of 15 (66.7%) and four out of 31 (13%) of the children were asymptomatic [65,66]. Exposure to COVID-19 among children has been reported in a household context [67,68].

<https://www.ecdc.europa.eu/sites/default/files/documents/covid-19-rapid-risk-assessment-coronavirus-disease-2019-eighth-update-8-april-2020.pdf>