

Epidemiological analysis on children and adolescents with COVID-19 in a central area of Calabria region: one year of pandemia

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To the Editor,

At the end of 2019, a novel coronavirus was identified as the cause of a cluster of pneumonia cases in Wuhan, a city in the Hubei province of China. It rapidly spread, resulting in an epidemic throughout China, followed by an increasing number of cases in other countries throughout the world. Children appear to be less affected than adults, with a milder clinical presentation and a significantly lower mortality rate. However, serious complications can occur in childhood, such as Covid-19 temporally related multisystem inflammatory syndrome (MIS-C) (1-4).

European ratings report that only 1-5% of Covid-19 cases concern the pediatric age even if global estimates they reach up to 13%. In children and in adolescents the disease manifests itself in a less serious way than to adults with 96% of asymptomatic cases or with mild to moderate symptoms and one lethality in the age group 0-15 even years 0.08% (1). The data collected in the database of the Integrated Surveillance System Covid-19 indicate that the population Italian school (age 3-18 years) represents 15% of the national population and 11% of the total number of people infected with SARS-CoV-2. Most of the cases in schoolage (40%) occurred in the adolescents (14-18 years), followed by primary school children aged 6-10 years (27%), by school children averages of 11-13 years (23%) and children of 3-5 year-old preschools (10%) (1,6).

In Italy, the increase of the tests contributed to a better detection of the spread of the infection and the cases of COVID-19 diagnosed in minors under 18 began to increase immediately after the release of the lockdown, as observed in the all world (5).

From 1 March 2020 to 28 February 2021, a total of 11728 children (6214 males and 5514 females) meet the screening criteria of suspected 2019-nCoV infection, in three provinces of Calabria Region (Catanzaro, Vibo Valentia and Crotone). Screening criteria could be epidemiological (history of travel or residence in areas with high local transmission; history of contact with confirmed or suspected cases infected with 2019-nCoV; infants delivered to mothers with suspected or confirmed 2019-nCoV infection) or clinical (fever or respiratory symptoms such as cough, wheezing, pharyngitis, flu-like symptoms) or fatigue.

All the tests on nasal and pharyngeal swab specimens using a RT-PCR assay were performed in the Calabria Regional Reference Laboratory of Microbiology.

1276 children (10,8%) were confirmed to have COVID-19 infection, in accordance with literature data. We had mild prevalence in males (52,1%) versus females (p 0,51). The median age of the infected children was 10.5 years (range 3 months-18 years), with a greater prevalence of the age group between 11-15 years (31,5%, p 0,17) in accordance with national data.

The three provinces had various number of positive cases, with more prevalence of positivity in the

Table 1. Main epidemiological data of children and adolescents and trend of positivity index

Characteristic		Total Children Suspected (N. 11.728)	Children Positive Covid-19 (N. 1.276)	
Sex	Male n.(%)	6.214 (53%)	665 (52.1%)	p=0,001
	Female n.(%)	5.514 (47%)	661 (47.9%)	
Age	Median, yrs (range)	10,4 (1 months-18 yrs)	10,5 (3 months-18 yrs)	p=0,17
	0-5 yrs n.(%)	2.179 (18.6%)	229 (17.9%)	
	6-10 yrs n.(%)	3.433 (29.2%)	333 (26.1%)	
	11-15 yrs n.(%)	3.504 (29.9%)	402 (31.5%)	
	16-18 yrs n.(%)	2.612 (22.3%)	312 (24.5%)	
Province	Catanzaro n.(%)	6.016 (51.3%)	439 (34.4%)	
	Crotone n.(%)	2.190 (18.7%)	351 (27.5%)	
	Vibo Valentia n.(%)	3.522 (30%)	486 (38,1%)	

province of Vibo Valentia (38.1%) in relation of the total children positive to COVID-19. Instead the annual positivity rate (ratio between subjects tested positive and number of swabs performed) was higher in the province of Crotone (16%). Demographic data of our subjects and monthly positivity rates are summarized in Table 1.

Children present more frequently asymptotically or pauci-symptomatically (about 63%); about 1% of children who resulted positive required hospitalization, with rare complications and a favorable outcome; no child was admitted to the pediatric intensive care unit.

Many countries have seen a two-wave pattern in reported cases of coronavirus disease-19 during the 2020 pandemic, with a first wave during spring followed by the current second wave in late summer and autumn. Evaluating the distribution of cases during the year, a higher prevalence of cases was observed in the months of January 2021 (22.6%) and December 2020 (17.8%). These observations are in line with national data showing how the incidence rate of SARS-Covid infection in paediatric age has increased since January 2021 during the second peak (7). Instead, during the first wave (from March to June 2020) the percentage of positivity found in our provinces was lower than the national data.

In conclusion, children appear to have a low observed case rate of COVID-19 to adults; this discrepancy may be because children are asymptomatic or too mildly infected to draw medical attention and be

tested and counted in observed cases of COVID-19. However, considering the high impact they have in the transmission of the virus in the community, it is essential to analyze the evolution of the phenomenon in this age group in order to be able to promptly initiate protection and prevention measures.

Conflicts of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

References

1. Deville JG. Coronavirus disease 2019 (Covid-19): Clinical-manifestations and diagnosis in children. UpToDate aggiornato 19.01.2021
2. Castagnoli R, Votto M, Licari A, et al. Severe Acute respiratory syndrome coronavirus 2 (SARSCoV-2) infection in children and adolescents: A systematic review. *JAMA Pediatr* 2020; 174: 882-9.4.
3. Talarico V, Nicoletti A, Sabetta L, Minchella P, Raiola G. Preliminary epidemiological analysis on children and adolescents with novel coronavirus disease (2019-nCoV) in a central area of Calabria region. *Acta Biomed* 2020; 91: 232-33.
4. Götzinger F, Santiago-García B, Noguera Julián A, et al. Covid-19 Study Group. Covid19 in children and adolescents in Europe: a multinational, multicentre cohort study. *Lancet Child Adolesc Heal* 2020; 4: 653-61.
5. Verity R, Okell LC, Dorigatti I, et al. Estimates of the severity of coronavirus disease 2019: a model-based analysis. *Lancet Infect Dis* 2020; 20: 669-77.
6. Rapporto ISS Covid-19 n. 63/2020 – Apertura delle scuole e andamento dei casi confermati di SARS-CoV-2: la situa-

one in Italia. Versione del 30 dicembre 2020.
7. Task force COVID-19 del Dipartimento Malattie Infettive e Servizio di Informatica, Istituto Superiore di Sanità. Epidemia COVID-19. Aggiornamento nazionale: 28 aprile 2021

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