

**Preliminary evidence on long COVID in children.**

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**Background and Aim:** There is increasing evidence that adult patients diagnosed with acute COVID-19 suffer from Long COVID, but the data on Long COVID in children is scarce. This study aims to assess persistent symptoms in children previously diagnosed with COVID-19.

**Methods:** This cross-sectional study included all children  $\leq 18$  year old diagnosed with microbiologically confirmed (PCR analysis on nasopharyngeal swab) COVID-19 from March 2020 to October 2020 in Fondazione Policlinico Universitari, Rome, Italy. Patients  $>18$  years old or with severe neurocognitive disability were excluded. Caregivers were interviewed about their child's health using a questionnaire developed by the Long COVID ISARIC study group 4 for evaluation of persisting symptoms. Participants were interviewed by either by phone or in the outpatient department and were categorised into groups according to symptoms during the acute phase (symptomatic/ asymptomatic), need for hospitalisation and time from COVID-19, diagnosis to follow-up evaluation ( $<60$ ,  $60-120$ ,  $>120$  days). Numerical variables were compared using test or ANOVA and categorical variables with chi-square or Fisher's exact test where appropriate. All analyses were performed using R version 4.0.3 (R Foundation).

**ACADEMIC P.E.A.R.L.S****P**ediatric **E**vidence **A**nd **R**esearch **L**earning **S**nippet**Long COVID in children**

**Results:** 129 children diagnosed with COVID-19 between March and November 2020 were enrolled (mean age of  $11 \pm 4.4$  years, 62 (48.1%) female). Six children with severe neurocognitive impairment were excluded. 109 children were interviewed by phone call, rest during outpatient department.

- During the acute COVID-19, 33 children (25.6%) were asymptomatic, and 96 (74.4%) had symptoms. Overall, 6 (4.7%) children were hospitalised, and 3 (2.3%) needed PICU admission. After initial covid, three developed multisystem inflammatory syndrome (2.3%) and two myocarditis (1.6%).

- Patients were assessed on average  $162.5 \pm 113.7$  days after COVID-19 microbiological diagnosis. 41.8% completely recovered, 35.7% had one or two symptoms and 22.5% had three or more.

- Insomnia (18.6%), respiratory symptoms (including pain and chest tightness) (14.7%), nasal congestion (12.4%), fatigue (10.8%), muscle (10.1%) and joint pain (6.9%), and concentration difficulties (10.1%) were the most frequently reported symptoms.

- 66.6% assessed between 60 and 120 days after initial COVID-19 had at least one persisting symptom, 27.1% had at least one symptom 120 days or more after diagnosis.

**Conclusions:** Evidence suggests that covid -19 can have a long term impact on children as well including those with asymptomatic/ paucisymptomatic COVID-19, highlighting the need for paediatricians, mental health experts and policymakers to implement measures to reduce impact of the pandemic on child's health.

**Key message:** All children with Covid 19 including those with asymptomatic and paucisymptomatic covid -19 can have persistence of symptoms even upto  $>120$  days after the initial diagnosis of covid -19.

**EXPERT COMMENT**

**“In covid-19 in children, persistence of symptoms is seen even after 120 days of initial diagnosis. Hence children should be followed up and appropriate measures should be taken to reduce the impact of pandemic on child's health.”**

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With warm regards,

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