**Background:** Evidence on the incidence of post-COVID-19 conditions in the pediatric population is still limited, mainly due to a marked heterogeneity between studies and a lack of works including a comparison group of children unexposed to SARS-CoV-2.

**Aim:** To evaluate the incidence rate and risk for the onset of new post COVID-19 conditions in a cohort of SARS-CoV-2 exposed and unexposed children and adolescents.

**Methods:** Retrospective nested-cohort study using Pedianet, a comprehensive Italian paediatric primary-care database covering ~12% of the Veneto region pediatric population <15 years of age, linked to the Veneto region COVID-19 swabs and hospitalization registries.

Clinical data from previously healthy children diagnosed with COVID-19 (exposed) were compared with 1:1 matched unexposed children from February 1, 2020 to November 30, 2021 (Fig.1).

Incidence rates (IR) of new post COVID-19 conditions were expressed as the number of cases per 100,000 person-months with the appropriate 95% confidence intervals (CI).

Adjusted Hazard ratio (aHR) and 95% CI for the association between exposure to COVID-19 and the onset of new post COVID-19 conditions was estimated using conditional Cox proportional hazard regression.

**Results:** A total of 3312 paediatrician-, age- and sex-matched previously healthy children (including 1656 exposed [34758 person-months] and 1656 unexposed [34330 person-months]) were studied up to a maximum of 21 months after COVID-19 infection.

Exposed children had a significantly higher IR of at least one new conditions after COVID-19 (IR of 10.6 x 100 person-months [95% CI 9.0-12.3]) compared to unexposed children (IR of 6.5 x 1000 person-months [95% CI 5.2 – 7.7]) (p< 0.0001).

Overall, exposed children had a significantly higher risk of mental health disorders (aHR 1.8, 95% CI 1.1 - 3), neurological disease (aHR 2.4, 95% CI 1.4 - 4.1), and other conditions, including skin rashes and smell and taste alterations (aHR 2.9, 95%CI 1.3 - 3.8).

The IR of the onset of new conditions after COVID-19 infection declined over the short, medium, and long term periods in exposed and unexposed children (Fig.2).

**Conclusions:** Our findings provide evidence of increased IR and risk of the onset of new conditions after COVID-19 infection in children, especially in the short term period.

Further population-based studies are needed to better describe the incidence of new post COVID-19 conditions due to Omicron variant in the pediatric population, as well as the IR of new conditions post other respiratory viral infections.

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