

Factors associated with hospital and intensive care admission in paediatric SARS-CoV-2 infection: a prospective nationwide observational cohort study

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Coronavirus disease 2019 (COVID-19) is usually less severe in children compared to adults. This study describes detailed clinical characteristics, treatment, and outcomes of children with laboratory-confirmed COVID-19 in a non-hospitalised and hospitalised setting and quantifies factors associated with admission to hospital and intensive care unit in children with SARS-CoV-2 infection on a nationwide level. Data were collected through the Swiss Paediatric Surveillance Unit from children < 18 years with laboratory-confirmed SARS-CoV-2 infection. All 33 paediatric hospitals in Switzerland reported non-hospitalised and hospitalised cases from March 1 to October 31, 2020 during both pandemic peaks. In total, 678 children were included. The median age was 12.2 (IQR 5.0 – 14.6) years, 316 (47%) were female and 106 (16%) had comorbidities. Overall, 126 (18.6%) children were hospitalised of whom 16 (12.7%) required ICU admission. Comorbidities were the only factor associated with hospital admission in a multivariable regression analysis (odds ratio 3.23, 95%CI 1.89 to 5.50; p-value <0.01). Hospitalised children more often presented with fever (96 [76.2%] vs 209 [38.1%], p-value <0.01) and rash (16 [12.8%] vs 6 [1.1%], p-value <0.01). Anosmia/dysgeusia was more prevalent in non-hospitalised children (73 [13.3%] vs 3 [2.4%], p-value <0.01). In the hospitalised children, oxygen treatment was required in 34 (27.0%), inotropes in nine (7.3%) and mechanical ventilation in eight (6.3%). Complications were reported in 28 (4.1%) children with cardiovascular complications being most frequent (12 [1.8%]). Three deaths were recorded.

This study confirms that COVID-19 is mostly a mild disease in children. Fever, rash, and comorbidities are associated with higher admission rates. Continuous observation is necessary to further understand paediatric COVID-19, guide therapy and evaluate the necessity for vaccination in children.

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