

Joint ECDC-ESPID webinar on post-COVID-19 condition in children

9 December 2021

Executive summary

A webinar on post-COVID-19 condition in children jointly organised by the European Centre for Disease Prevention and Control (ECDC) and the European Society of Paediatric Infectious Diseases (ESPID) took place on 10 November 2021. The webinar enabled the sharing of experiences and epidemiological data on post-COVID-19 condition in children between researchers with the aim of shaping future priorities for the condition across Europe.

Participants included the European Medicines Agency (EMA), members of ESPID, ECDC's national focal points for COVID-19, and representatives from National Immunisation Technical Advisory Groups (NITAGs) in the European Union/European Economic Area (EU/EEA). Presentations from ECDC, Finland, Germany, Italy, and the United Kingdom (UK) provided data in the areas of surveillance and epidemiology of post-COVID-19 condition in children in the paediatric population. The lack of a standardised syndrome definition and harmonised surveillance protocol were highlighted.

The webinar concluded that while challenges remain to identify the burden of post-COVID-19 condition and its consequences in children, some networks are established. A collaborative approach involving public health specialists and expert groups is essential in responding to these public health challenges. The importance of developing a European network to assist in better understanding the syndrome, its public health consequences and burden was strongly endorsed.

Scope and purpose of the meeting

Background

Post-COVID-19 condition in children

SARS-CoV-2 infection in children is usually asymptomatic or causes a mild illness of short duration. The overall burden of the disease in children is low, however severe cases or death can occur also in children with unknown risk factors. Persistent illness has been reported; however, its prevalence and characteristics are uncertain. Some of the children with asymptomatic COVID-19 may present with a wide range of different symptoms after weeks, which may persist for months. Children with a severe course of the disease are likely to have persistent symptoms after the acute phase of the disease. The clinical picture with these long-term symptoms is often referred to as post-COVID-19 condition. The cause, impact, and prevalence of this condition in children is unknown.

In October 2021, WHO developed a case definition for post-COVID-19 condition in adult patients without specific mention of paediatric patients. Until now, post-COVID-19 condition refers to children with continuing symptoms after a known SARS-CoV-2 infection (four weeks, three months or six months) when no other aetiology can be found. The most common symptoms include fatigue, headache, shortness of breath and cognitive dysfunction.

Our understanding is evolving, with limited data showing an increased risk of post-COVID-19 condition in children older than 10 years of age and those with certain underlying medical conditions. Recognition of risk factors for post-COVID-19 condition in children could provide more insight in the disease burden and target groups for vaccination that could support policy strategies in the EU. Data from European countries are needed to provide a comprehensive understanding of the epidemiology of paediatric post-COVID-19 condition. In July- August 2021 an exploratory survey from ECDC and ESPID was circulated to find out which research groups collect systematically data on post-COVID-19 condition in children. Researchers from the pool of respondents were approached to present in the Joint Webinar.

Objectives of the webinar

The aim of the webinar was to facilitate the exchange of information between involved stakeholders from public health and clinical sectors to better understand the public health implications of post-COVID-19 condition in children.

Presentations included:

- ongoing clinical research defining duration and impact/disability of symptoms of post-COVID-19 condition (possibly stratified by age, severity of acute infection, underlying conditions);
- epidemiological research trying to quantify the occurrence of this condition among children infected with SARS-CoV-2; and
- discuss possibilities for extended collaboration between ESPID, ECDC and research teams to better understand the burden of post-COVID-19 condition in children in the EU/EEA.

Summary of the webinar

Welcome and introductory remarks

Agoritsa Baka, Principal Expert Emergency Preparedness and Response, ECDC welcomed participants to the webinar and gave an outline of the meeting. She also presented the results of the online exploratory survey that ESPID shared to its members regarding the monitoring and systematic data collection on post-COVID-19 in children in Europe.

Presentations

1. Burden of COVID-19 in children

Speaker: Nick Bundle, Expert Coronavirus and Influenza, ECDC

Nick Bundle, ECDC, presented surveillance data on COVID-19 in children and adolescents <19 years by age range from The European Surveillance System (TESSy). According to TESSy data, hospitalisations increase with every year of increasing age, but severe COVID-19 remains rare among children. The presence of an underlying condition is associated with eight times higher odds of hospital or ICU admission in children older than one year, but underlying conditions in hospitalised case are under reported. However, the vast majority of hospitalised children did not have any underlying condition. There is no difference by sex, as opposed to adult COVID-19 patients. TESSy does not have data on Multisystem Inflammatory Syndrome-COVID-19 or post-COVID-19 condition, as countries report only data close to the diagnosis and usually no long-term complications.

2. 'National CLoCk study of Long COVID-19 in non-hospitalised children and young people aged 11-17 years old in England'

Speaker: Prof. Sir Terence Stephenson, Nuffield Professor of Child Health at the Great Ormond Street Institute of Child Health, London

Prof. Stephenson presented a large multi-centre study of non-hospitalised children and adolescents in England, who tested positive for SARS-CoV-2 and were asked for physical and mental health symptoms several months following infection. More than three months after a positive test, 66% of participants reported one or more symptoms and 30% had three or more compared to 53% and 6% of people with negative test, respectively. There were no differences in mental health, emotional, and wellbeing symptoms. He also presented important findings from a systematic review on post-COVID-19 condition in children in the UK from December 2020, which showed that the rate of reporting of long-lasting symptoms after infection with SARS-CoV-2 in children and adolescents ranged from >1% to as high as 51%. More recent publications place this range at around 2 to 5%.

3. Post-COVID-19 condition in children: update from real world practice in Rome, Italy

Speaker: Dr Danilo Buonsenso, Fondazione Policlinico Universitario 'A. Gemelli', Rome

Dr Buonsenso provided an overview of the clinical spectrum of post-COVID-19 condition in children using case studies and the challenges and gaps that currently exist in diagnosis and treatment of such cases, although there is evidence for post-COVID-19 condition in children with pathophysiological background (impaired lung and cardiac function). He also presented research networks working on post-COVID-19 condition in the EU/EEA (for example the International Post-Covid Condition in Children Collaboration (IP4C) project with 21 hospitals and organisations in 17 countries).

4. Traces of paediatric post-COVID-19 in Germany

Speaker: Dr Nicole Töpfner, Carl Gustav Carus University Hospital, Dresden

Dr Töpfner presented findings from a large German study in health insurance databases (150 000 people who had tested positive for SARS-CoV-2). The findings indicate a higher incidence of predefined adverse health outcomes documented in routine healthcare data not just among adults but also in children and adolescents with COVID-19 compared to matched controls. Children and adolescents with COVID-19 disease may be at increased long-term risk for a broad spectrum of medical conditions; mental health problems in particular appear to be more frequent in children and adolescents relative to the control group. She also addressed the lack of accurate and harmonised data for the paediatric population (Consensus Statement from German paediatric societies).

5. Update from Finland

Speaker: Dr Emmi Sarvikivi, Chief Infectious Diseases physician, Finnish Institute for Health and Welfare (THL), Helsinki

Dr Sarvikivi informed participants that in Finland repeated surveys on the state health register and in hospitals are performed aiming to identify post-COVID-19 condition cases in children in the country. There is no registry-based evidence on excess healthcare use after laboratory-confirmed COVID in children younger than 16 years. The analysis does not exclude rare events but does not support the idea that prolonged symptoms after COVID-19 infection are common. Hospital-based studies had similar results. Therefore, their conclusion was that post-COVID-19 condition is rare in Finland.

Discussion

It is promising that several researchers have already started addressing these questions and gaps. Differences in the epidemiology across regions within the EU/EEA, the lack of a standardised definition of post-COVID-19 condition for children, and unclear multi-disciplinary management of children with long-term consequences following SARS-CoV-2 infection were some of the problems identified, not only from the audience and speakers, but also from Marco Cavaleri, EMA. He emphasised how important these meetings are among experts discussing issues relating to the development of policies, such as the vaccination of children. He encouraged the continuation of these efforts that would support EMA's decisions on the authorisation of COVID-19 vaccines for children younger than 12 years. Further work is needed to develop strategies that effectively tackle the uncertainties of the impact of SARS-CoV-2 in children.

Conclusions

The webinar unveiled opportunities and challenges associated with developing strategies based on research and current evidence on the identification of the real burden of severe COVID-19 and long-term consequences after SARS-CoV-2 infection in children.

The ongoing collaboration of ECDC with ESPID is promising and can build synergies among clinician researchers and public health in EU/EEA Member States to fill the gaps of knowledge in paediatric COVID-19.

Next steps

The next steps arising from the webinar are the following:

- ECDC to explore connecting with research networks for post-COVID-19 condition in children to gain a better understanding of the on-going projects.
- ECDC to explore the possibility of a second joint webinar with ESPID relating to severe COVID-19 in children.

Annex 1. Final agenda

Wednesday, 10 November 2021 (15.00-17.00 CET)

15:00-15:10	Welcome by ECDC & ESPID chair
15:10-15:20	Presentation 1: Burden of COVID-19 in children <i>Nick Bundle, Surveillance Team, ECDC</i>
15:25-15:40	Presentation 2: 'National CLoCk study of Long COVID-19 in non-hospitalised children and young people aged 11-17 years old in England' <i>Professor Sir Terence Stephenson</i> <i>DM, FRCPCH, FRCP, SFFMLM</i> <i>Nuffield Professor of Child Health, UCL Great Ormond Street Institute of Child Health</i> <i>Honorary Consultant Paediatrician University College Hospital & Great Ormond Street Hospital</i> <i>Chair, Health Research Authority for England</i>
15:45-16:00	Presentation 3: Post-COVID-19 condition in children: update from real world practice in Rome, Italy <i>Dr Danilo Buonsenso</i> <i>Department of Woman and Child Health and Public Health</i> <i>Fondazione Policlinico Universitario "A. Gemelli" - Roma</i>
16:05-16:20	Presentation 4: Pediatric Traces of Post-COVID-19 condition in Germany <i>Dr Nicole Töpfer</i> <i>Department of Pediatrics, University Hospital Carl Gustav Carus, Technische Universität, Dresden, Germany</i>
16:25-16:40	Presentation 5: Update from Finland <i>Emmi Sarvikivi</i> <i>Department of Health Security</i> <i>Finnish Institute for Health and Welfare</i>
16:40- 17:00	Discussion Intervention by EMA All participants discuss possibilities for extended collaboration between ESPID, ECDC and European countries to better understand the burden of post-COVID-19 condition in children in the EU/EEA.