Unique Long COVID Symptoms Experienced by Children and Adolescents

Researchers attempted to characterize childhood long COVID by investigating its most common disease symptoms in children (6-11 yrs; n = 898) and adolescents (12-17; n = 4,478).

Study

The present study aims to address the current literature gaps by 1. Identifying typical childhood long COVID symptoms, 2. Comparing symptoms across children (6-11 yrs) and adolescents (12-17 yrs), 3.

Evaluating if these symptoms cluster into discrete phenotypes, and 4. Deriving an index of childhood long COVID to aid future research initiatives.

The dataset used herein is the Researching COVID to Enhance Recovery (RECOVER) Pediatric Observational Cohort Study (RECOVER-Pediatrics) funded by the United States (US) National Institutes of Health.

Data for the study was obtained between March 2022 and December 2023 from more than 60 sites spread across the US and comprised participants with ('infected') and without ('uninfected') laboratory-confirmed COVID-19 infections.

Participants with missing data, unknown dates of first infections, and those with previous or ongoing multisystem inflammatory syndrome were excluded from the analysis.

For analysis, long COVID was defined as the presence of COVID-19 symptoms 90 or more days following initial COVID-19 infections. Uninfected participants with long COVID symptoms were analyzed separately to elucidate the impacts of asymptomatic infections.

Symptoms were categorized into 75 discrete types (general [n = 12], ENT [n = 15], gastrointestinal [n = 6], heart/lungs [n = 10], dermatological [n = 5], neurological [n = 6], musculoskeletal [n = 3], menstrual [n = 4], and behavioral [n = 14]).

Symptoms data was collected using the Patient-Reported Outcomes Measurement Information System (PROMIS) Global Health Scales. Demographic and medical variables (sex, age, ethnicity,

vaccination status, geographic origin, and time of infection) were included in statistical models as covariates.

Linear, logistic, and Poisson regression models were used to compute risk differences, relative risks, and odds ratios across investigated subgroups (infected versus uninfected and children versus adolescents).

The least absolute shrinkage and selection operator (LASSO) model was used to identify the clustering of symptoms, thereby identifying indices for future research initiatives.

Results

Of the 898 children (751 infected, 147 uninfected) and 4,478 adolescents included in the study, 45% and 33% of infected and uninfected children, and 39% and 27% of adolescents were observed to have at least one persistent long COVID symptom.

Of the 75 symptoms identified, 26 and 18 were prolonged in more than 5% of children and adolescents. Of these, 14 symptoms were common between groups, while 4 and 3 were unique to children and adolescents, respectively.

LASSO analysis identified 10 (children) and 8 (adolescent) symptoms most commonly associated with a history of COVID-19 infections.

These were found to aggregate into four distinct clusters, with Cluster 1 (multisystem symptoms and highest symptom burden) being highlighted as the worst across both groups.

Conclusion

The present study is one of the first to characterize childhood long COVID in a large (n = 5,376), long-term (n = 21 months) dataset. Study findings highlight that symptomatic manifestation of long COVID in school-age children (6-11 yrs) differs significantly from adults (18+ yrs) as well as from adolescents (12-17 yrs).

Notably, while 14 symptoms were found to be shared between children and adolescents, 4 (children) and 3 (adolescents) were unique.

Alarmingly, 33% and 27% of asymptomatic children and adolescents were observed to suffer from long COVID symptoms despite a lack of clinical COVID-19 history, suggesting that the prevalence of long COVID in these populations may be significantly higher than previously assumed.

Encouragingly, clustering analysis identified four phenotypic clusters (representing 8-10 most common symptoms) that can be used as indices in future research efforts.

Source:

https://www.news-medical.net/news/20240826/Children-and-adolescents-experience-unique-long-COVID-symptoms.aspx