For immediate release

Press Release

Luxembourg, 25th March 2021

Predi-COVID extended to children

The Luxembourgish cohort study will elucidate risk factors for COVID-19 severity in the younger population

Originally launched in April 2020 with the aim of identifying risk factors and biomarkers associated with COVID-19 severity in the adult population, Predi-COVID[1] has now officially been extended to children. The study, coordinated by the Luxembourg Institute of Health (LIH) and carried out under the aegis of the Research Luxembourg COVID-19 Task Force, will particularly benefit from the collaboration with the Centre Hospitalier de Luxembourg (CHL) for the recruitment of younger children.



Current research around COVID-19 has so far predominantly focused on disease evolution and treatment in adults, due to the higher incidence, severity and mortality observed. Although children typically develop the asymptomatic or milder variants of COVID-19, recent evidence suggests that the SARS-CoV-2 virus may be involved in the onset of more severe manifestations, leading for instance to multiple organ inflammation and failure (Pediatric Inflammatory Multisystem Syndrome) and even cardiac complications, such as myocarditis and coronary artery dilations as in Kawasaki disease.

"*Since the clinical characteristics and symptoms of COVID-19 in children may differ considerably from those observed in adults, there is the need to elucidate the main risk factors associated with the cases of critical illness in children, whether they pertain to immunity or environmental causes. The aim of the paediatric extension of Predi-COVID is therefore to identify such factors and define the clinical, biological and microbiological characteristics of COVID-19 in younger patients*", explains Dr Guy Fagherazzi, Director of the LIH Department of Population Health (DoPH) and Principal Investigator of Predi-COVID.

Specifically, a minimum of 100 COVID-19 positive children and adolescents aged between 0 and 17 years will be included in the Predi-COVID cohort between February and June 2021, while a minimum of 30 asymptomatic children and adolescents from the households of COVID-19 positive adult participants will be recruited under the ancillary study Predi-COVID-H. CHL – and specifically its Paediatric Clinic "Kannerklinik" – will be responsible for the inclusion of severe cases of hospitalised children under the age of 15, while the recruitment

[1] "Luxembourg cohort of positive patients for COVID-19: a stratification study to predict severe prognosis"

of older children will fall under the remit of the Clinical and Epidemiological Investigation Centre (CIEC) of LIH. The children to be included in the study will be identified directly by the Health Inspection Department of the Ministry of Health and their legal guardians contacted to obtain their consent.

As with adults, the health evolution and symptoms of children participating in Predi-COVID will be regularly followed through different remote digital tools, depending on whether they are at home or at the hospital. Short evaluations will be also performed monthly for up to 12 months to assess potential long-term consequences of COVID-19. In addition, for every child tested positive and if parents consent, blood samples, nasal swabs, oro- and naso-pharyngeal swabs, saliva and stool will be collected by an experienced nurse upon inclusion and after three weeks. For the asymptomatic children in Predi-COVID-H, clinical and socioeconomic data, as well as blood, stool, nasopharyngeal and oropharyngeal swabs will also be collected. The analysis of stool samples from both COVID-19 positive and household contact children will increase the understanding of how the virus is shed in the stool and how the gut microbiome influences COVID-19 infection in children.

"*Based on the encouraging results obtained thus far with the adult cohort, we believe that the paediatric extension of Predi-COVID will provide additional insights into the pathophysiology and dynamics of COVID-19 in the younger population. This will in turn support the development of relevant public health measures to optimise the safeguard of the most vulnerable children*", states Dr Carine de Beaufort, paediatrician within the Pediatric Endocrinology-Diabetology department of CHL.

"*We are very grateful to the Health Inspection Department of the Ministry of Health and to all other partners involved in the study for the excellent collaboration thus far. We believe this highly cooperative approach will keep contributing to the smooth running of the project and of this additional phase specifically*", concludes Prof Markus Ollert, Director of the LIH Department of Infection and Immunity and co-Principal Investigator of Predi-COVID.

About Predi-COVID

Predi-COVID was launched under the aegis of the Research Luxembourg COVID-19 task force with the goal of defining which patient profiles can be associated with a more severe prognosis. The study aims to identify the clinical, epidemiological and socio-demographic characteristics, as well as specific biomarkers from both the SARS CoV-2 virus and the patient, which can help predict the way the disease will evolve in a given individual, according notably to his immune profile. Predi-COVID will contribute to a better understanding of the heterogeneity observed in disease severity and prognosis, ultimately enabling the accurate evaluation of patients infected with SARS-CoV-2 and more personalised care recommendations.

Predi-COVID is coordinated by the Department of Population Health (DoPH) of the Luxembourg Institute of Health and boasts a highly interdisciplinary consortium of Luxembourgish research institutions, including the LIH Department of Infection and Immunity (DII), the Integrated Biobank of Luxembourg (IBBL), the Laboratoire National de Santé (LNS), the University of Luxembourg, the Luxembourg Centre for Systems Biomedicine (LCSB), the Centre Hospitalier de Luxembourg (CHL) and Hôpitaux Robert Schuman (HRS). The study is co-financed by the Luxembourg National Research Fund (FNR) and by the André Losch Foundation.

About the Luxembourg Institute of Health: Research dedicated to life

The Luxembourg Institute of Health (LIH) is a public research organisation at the forefront of biomedical sciences. With its strong expertise in population health, oncology, infection and immunity as well as storage and handling of biological samples, its research activities have an impact on people's health. At LIH, devoted scientists investigate disease mechanisms to develop new diagnostics, innovative therapies and effective tools to implement personalised medicine.

About the Centre Hospitalier de Luxembourg (CHL)

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