NEWS UPDATES

First results from CAPCITY: Cardiac complications in patients hospitalized with COVID-19

The first studies from China at the beginning of the outbreak reported a high incidence of acute cardiac injury in patients hospitalized with COVID-19. Furthermore, a number of case reports of myocarditis have emerged in literature. A systematic recording on the incidence of cardiac complications in larger cohorts has however been lacking thus far.

For this reason, an analysis on the first 878 confirmed cases entered in CAPACITY between the 23rd of March and the 1st of May was performed. This study shows that the incidence of cardiac complications is limited in patients hospitalized with COVID-19. Cardiac complications were registered in 12.0% of patients, of which supraventricular arrhythmia's (6.4%) were most common. The incidence of other cardiac complications was 1.6% for heart failure (n=14), 1.5% for acute coronary syndrome (n=13), 0.5% for myocarditis (n=4), 0.7% for ventricular arrhythmia's (n=6), and 0.1% for pericarditis (n=1). The manuscript of this study is currently under review for publication.

Approved research proposals

We are pleased to have received a number of study proposals by researchers all over the world since the launch of the registry. The research proposals that have been reviewed and approved by the Data Access Committee (DAC) are listed below. If you are interested to join one of the working groups of these initiatives, please inform us via: dac-capacity@dcvalliance.nl Furthermore, if you have an idea for another research question you can apply for data access via: https://capacity-covid.eu/for-professionals/ under the tab "Approved Research Projects and Data Access".

- **Medication-related**
  - Effect of anti-hypertensive drugs on COVID-19 outcome
  - Effects of chloroquine on cardiovascular complications and mortality in COVID-19
  - Oral anticoagulation and COVID-19 outcome

- **Disease modifiers**
  - Sex differences in COVID-19
  - Effect of diabetes on COVID-19 cardiovascular complications

- **Cardiovascular adverse events**
  - Acute cardiac injury and ACS in COVID-19
  - Arrhythmias and conduction disorders in COVID-19

- **Electrocardiogram analyses**
  - Non-invasive 12-lead ECG analysis in patients with COVID-19
  - Disease-specific ECG features in patients with COVID-19

COVID-19 Open Artificial Intelligence (AI) Consortium

CAPACITY is pleased to be partnering up with OWKIN in the COVID-19 Open Artificial Intelligence (AI) Consortium. OWKIN is a French-American start-up developing federated learning and AI technologies focused on predictive analytic solutions. The aim of this consortium is to develop AI models, built on clinical records (diagnosis, treatment, outcome), radiology laboratory, and demographic data. These models can help predict prognosis, response to treatment, adverse events, public health risks, and other challenging scientific questions. For more information see: https://owkin.com/covid-19/

FAIR Data for CAPACITY

To support centres with data collection, automatic data extraction pipelines are desired. In this manner, analyses can be kept up to date in real time. Together with Netherlands eScienceCenter and Health RI, the FAIR Data for CAPACITY project will build FAIR data stations and automatic data extraction pipelines for defined sets of clinical data as part of a distributed learning infrastructure.
For more information see: https://www.esciencecenter.nl/projects/fair-data-for-capacity/

CAPACITY-UK Flagship Project National Institute for Health Research and British Heart Foundation

We are thankful that the National Institute for Health Research - British Heart Foundation Cardiovascular Partnership has prioritized CAPACITY-UK as COVID-19 CVD UK Flagship Project. University College London Hospital (UCLH) will coordinate CAPACITY within the UK.

Health Holland Grant for Non-invasive 12-lead ECG analysis in COVID-19 patients

Health Holland has provided financial support for the project: “Non-invasive 12-lead ECG analysis in patients with COVID-19”. Patients with a combination of COVID-19 and prior cardiovascular disease are at high-risk for a poor outcome. Early recognition of changes in the activation and repolarization pattern may aid in decreasing cardiac complications. With the CineECG technology, waveform changes can be related to the cardiac anatomy and thus be indicative for developing but undetectable cardiac problems. For more information see:
https://www.health-holland.com/project/2020/electrocardiogram-analysis-for-early-detection-of-cardiovascular-diseases-in-covid-19