Cardiac complicAtions in Patients with SARS Corona vIrus 2 regisTrY (CAPACITY)

UK Protocol

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CAPACITY

NIHR | University College London Hospitals Biomedical Research Centre

NHS University College London Hospitals NHS Foundation Trust

PROTOCOL TITLE: Cardiac complicAtions in Patients with SARS Corona vIrus 2 regisTrY (CAPACITY)

Short title	**CAPACITY**
Version	**1.0**
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Chief Investigator	**Professor Bryan Williams**
Database Lead: **Multicentre research: per site (TBD)**	**Mr Luis Romao**
Other investigator(s) – Global Investigator	**Professor F.W. Asselbergs**

Sponsor	**UCLH NHS Foundation Trust**
Subsidising party	**Not applicable.**
Laboratory sites	**Not applicable.**

PROTOCOL SIGNATURE SHEET

Name	Signature	Date
Chief Investigator **Professor Bryan Williams**		
Global Investigator: **Prof. dr. F.W. Asselbergs, cardiologist**		

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SUMMARY

Rationale: Coronavirus disease (COVID-19) is a rapidly emerging pandemic in which cardiovascular complications are increasingly described. Furthermore, underlying cardiovascular disease seems to be of prognostic importance in patients with COVID-19. In prior pandemics, data collection was not performed in a standardized manner. Data collection during the COVID-19 pandemic should therefore be standardized, to improve data quality and allow high-quality research with data collected across multiple centres. Cardiac complicAtions in Patients with SARS Corona vIrus 2 regisTrY (CAPACITY) is an extension of the ISARIC-WHO case report form (CRF)(https://isaric.tghn.org/covid-19-clinical-research-resources/). CRF extensions have been developed to capture information on cardiac history, use of cardiac medications and the occurrence of cardiac complications. CAPACITY offers a comprehensive data collection tool that facilitates uniform data collection of patients with COVID-19.

Objective: To participate in the WHO-recommended standardized data collection of patients infected with SARS-CoV-2 and gain additional insight into the role of cardiovascular disease in this pandemic.

Study design: Patient registry (observational in nature).

Study population: Patients admitted to the hospital highly suspected of or with confirmed COVID-19.

Main study parameters/endpoints: NA

Nature and extent of the burden associated with participation, benefit and group relatedness: Patients will not undergo any additional investigations. Only data that is generated during routine clinical care will be collected.

1. INTRODUCTION AND RATIONALE

Coronavirus disease (COVID-19) is a rapidly emerging pandemic caused by an infection with SARS-CoV-2. Most patients require admission to the hospital due to the development of pneumonia, which may necessitate mechanical ventilator support. Besides the respiratory symptoms, some patients develop severe cardiac damage (1, 2). In addition, underlying cardiovascular disease may worsen the prognosis of these patients (2). There are concerns that the use of angiotensin-converting enzyme (ACE) inhibitors, angiotensin II type-I receptor blockers (ARBs), ibuprofen and thiazolidinedione's can worsen the course of COVID-19. These concerns are based on the fact that SARS-CoV-2 bind to their target cells through the ACE2 receptor. The expression of the ACE2 receptor can be substantially increased with the use of these drugs (3). To gain insight into the rate of cardiac complications and the course of COVID-19 in patients with underlying cardiac disease, high-quality data collection is needed. In prior pandemics data collection was not done in a standardized manner. It is of pivotal importance that the data collection during the COVID-19 pandemic is standardized. Cardiac complicAtions in Patients with SARS Corona vIrus 2 regisTrY (CAPACITY) offers a WHO-recommended comprehensive data collection tool that facilitates uniform data collection on patients infected with SARS-CoV-2 with cardiovascular disease.

2. OBJECTIVES

Standardised data collection of patients infected with SARS-CoV-2 which should eventually be helpful in answering questions on the role of cardiovascular disease in this pandemic.

3. STUDY DESIGN

This is an international multicenter registry that will collect data longitudinally from multiple centers. UCLH is the sponsor for the UK collection efforts

4. STUDY POPULATION

4.1 Population (base)

All patients presented or admitted at one of the participating centres with highly suspected/confirmed infection with SARS-CoV-2.

4.2 Inclusion criteria

In order to be eligible to participate in this study, a subject must meet the following criteria:

(i) Highly suspected/confirmed infection with SARS-CoV-2

4.3 Exclusion criteria

NA

4.4 Sample size calculation

NA

5. METHODS

5.1 Study procedures

For every participating centre, new eligible cases will be reported to one responsible coordinating researcher. The research team will subsequently collect the following data from electronic health records and enter these data in an pseudonimised electronic case report form (eCRF). All data collection instruments in REDCap are visualized below. Patients will not be subjected to any additional procedures besides standard clinical care. The data collection instruments will be filled with data that is collected during routine clinic care.

Instrument name	Fields	View PDF	Instrument actions
ISARIC/CAPACITY - Participant Identification Number Pin (REQUIRED)	2		Choose action
ISARIC/CAPACITY - Inclusion Criteria (REQUIRED)	9		Choose action
ISARIC/CAPACITY - Demographics (REQUIRED)	25		Choose action
CAPACITY - Cardiac baseline assessment (REQUIRED)	107		Choose action
ISARIC - Pre-admission medication (within 14 days of admission) (OPTIONAL)	4		Choose action
ISARIC - Comorbidities (OPTIONAL)	19		Choose action
ISARIC - Onset And Admission (OPTIONAL)	11		Choose action
ISARIC - Admission Signs And Symptoms (OPTIONAL)	47		Choose action
ISARIC - Infectious Respiratory Disease Diagnosis (OPTIONAL)	17		Choose action
ISARIC - Infectious Respiratory Disease Pathogen Testing (OPTIONAL)	191		Choose action
ISARIC - Daily Form (OPTIONAL)	110		Choose action
CAPACITY - Cardiac biomarkers (OPTIONAL)	12		Choose action
CAPACITY - ECG (OPTIONAL)	17		Choose action
CAPACITY - Echocardiography (OPTIONAL)	81		Choose action
CAPACITY - Cardiac MRI (OPTIONAL)	33		Choose action
CAPACITY - CT (thorax/coronaries/PET/lung angiography) (OPTIONAL)	35		Choose action
CAPACITY - Invasive Cardiac Procedures (OPTIONAL)	14		Choose action
CAPACITY - Cardiac COVID-19 complications (REQUIRED)	34		Choose action
CAPACITY - Cardiac outcome: 7 day follow-up (REQUIRED)	6		Choose action
CAPACITY - Cardiac outcome: 30 day follow-up (REQUIRED)	6		Choose action
CAPACITY - Discharge (REQUIRED)	47		Choose action
ISARIC - Treatment (OPTIONAL)	30		Choose action
ISARIC - Core Additional Information (OPTIONAL)	1		Choose action
ISARIC - Outcome (OPTIONAL)	12		Choose action
ISARIC - Complications (OPTIONAL)	28		Choose action
CAPACITY - Chloroquine QTc study	35		Choose action

5.2 Withdrawal of individual subjects

Under the Department of Health and Social Care COVID-19 Notice issued under the Control of Patient Information Regulations 2002 opt outs will not be offered at the clinical sites. Prior to the expiry of the Notice on 30th September 2020 we will seek CAG Support and apply Opt Out options as per the directions from CAG.

5.2.1 Specific criteria for withdrawal (if applicable)

5.3 Replacement of individual subjects after withdrawal

NA

5.4 Follow-up of subjects withdrawn from treatment

NA

6. ETHICAL CONSIDERATIONS

6.1 Regulation statement

The study will be conducted according to approvals provided by the Health Research Authority Expedited Review, The COVID-19 Notice under the Control of Patient Information Regulations 2002 process and in accordance with the EU GDPR (General Data Protection Regulation), Data Protection Act 2018 and the Declaration of Helsinki. We will also work in line with the recommendations from NHS X and NHS England – see https://www.nhsx.nhs.uk/key-information-and-tools/information-governance-guidance and additional applicable legislation across all UK Jurisdictions.

6.2 Recruitment and consent

For every participating centre, new eligible cases will be reported to one responsible coordinating researcher. The research team will collect relevant data from electronic health records, and enter these data in an pseudonymized electronic case report form (eCRF). Participating Site's privacy notices will be updated to include details about CAPACITY-COVID19. Obtaining informed consent is not feasible during this pandemic, considering the acute setting (i.e. emergency department/intensive care) in which a large number of COVID-19 patients are currently being admitted. Furthermore obtaining informed consent during this pandemic will induce selection bias, since only mildly symptomatic patients can be included through a classic informed consent procedure. Lastly, informed consent requires extra contact with the patients, which would place study researchers at unacceptable risk.

7. ADMINISTRATIVE ASPECTS AND PUBLICATION

7.1 Handling and storage of data and documents

For every participating centre, one coordinating researcher will be responsible for giving patients a pseudo-ID. Only this coordinating researcher will be able to create a new patient ID in REDCap to prevent that the same patient being entered multiple times under different pseudo-IDs. Every participating centre will have an identification list which will be encrypted and stored in a protected folder according to a SOP. All data that is entered in the eCRFs is non-retraceable (no address, date of birth, etc.). Researchers with access to the Research Electronic Data capture (REDcap) platform will only see pseudonymised data. Data will be collated and sent to UMC Utrecht under Data Transfer Agreements.

8. REFERENCES

(1) Zheng Y. et al. COVID-19 and the cardiovascular system. Nat Rev Cardiol 2020 [Online ahead of print]
(2) Huang, C. et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet 2020; 395, 497–506.
3) Fang, L. et al. Are Patients With Hypertension and Diabetes Mellitus at Increased Risk for COVID-19 Infection?
(4) https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19. Accessed on 19th of March 2020.