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# Preventative treatment for patients at risk of COVID-19 infection (PROTECT)

**Submission date**
24/04/2020

**Recruitment status**
No longer recruiting

**Registration date**
14/05/2020

**Overall study status**
Completed

**Last Edited**
27/01/2026

**Condition category**
Infections and Infestations

[X] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

## Plain English summary of protocol

Background and study aims
COVID-19 is a condition caused by the coronavirus (called SARS-CoV-2) that was first identified in late 2019. This virus can infect the respiratory (breathing) system. Some people do not have symptoms but can carry the virus and pass it on to others. People who have developed the condition may develop a fever and/or a continuous cough among other symptoms. This can develop into pneumonia. Pneumonia is a chest infection where the small air pockets of the lungs, called alveoli, fill with liquid and make it more difficult to breathe.
In 2020, the virus has spread to many countries around the world and neither a vaccine against the virus or specific treatment for COVID-19 has yet been developed. As of March 2020, it is advised that people minimize travel and social contact, and regularly wash their hands to reduce the spread of the virus.

Groups who are at a higher risk from infection with the virus, and therefore of developing COVID -19, include people aged over 70 years, people who have long-term health conditions (such as asthma or diabetes), people who have a weakened immune system and people who are pregnant . People in these groups, and people who might come into contact with them, can reduce this risk by following the up-to-date advice to reduce the spread of the virus.

Currently, there are no drugs proven to treat or delay the progression of COVID-19 and no vaccine is yet available. Efforts are underway to repurpose established drugs with well-understood drug interactions and safety profiles. A number of clinical trials have been established at great speed following the onset of the pandemic, but none of these is enrolling participants with significantly reduced kidney function and/or receiving certain kinds of immunosuppressive medicines such as solid organ transplant recipients. Patients receiving in-centre dialysis are at extremely high risk from COVID-19, particularly as they are unable to self-isolate.

The PROTECT trial aims to enrol patients at particularly high risk of COVID-19 and its complications (such as kidney dialysis patients, vasculitis, and transplant patients), seeking to test treatments that either might prevent the disease from occurring or may reduce the number of cases where the disease becomes serious or life-threatening.

Dialysis is a procedure to remove waste products and excess fluid from the blood when the kidneys stop working properly. It often involves diverting blood to a machine to be cleaned.

Vasculitis is inflammation of blood vessels. It causes changes in the blood vessel walls, including thickening, weakening, narrowing or scarring. These changes can restrict blood flow, resulting in organ and tissue damage.

Organ transplantation is a medical procedure in which an organ is removed from one body and placed in the body of a recipient, to replace a damaged or missing organ. Transplant recipients must take medication to suppress the immune system which puts them at risk of infection.

Who can participate?
Adults over 18 years, in a vulnerable population (dialysis, vasculitis, or transplant) patients with no symptoms of or confirmed COVID-19 diagnosis.

What does the study involve?
Patients will be randomised to receive either oral hydroxychloroquine (HCQ) or standard care. HCQ is a widely used anti-malarial drug which has an effect on the immune system and may as an anti-viral agent in this setting.
The PROTECT study has been designed to place the minimum burden on patients, and on the healthcare workers looking after them at this time. They will not have to attend the hospital for any extra study visits but will be asked to complete follow-up questionnaires. There is also a small chance that they may experience one of the side effects of HQC listed in the patient information sheet.

What are the possible benefits and risks of participating?
There is no guarantee that patients will benefit from taking part in this trial. They may be protected from COVID-19 by HCQ, Niclosamide, but it is also possible that HCQ may not protect them from COVID-19. The researchers do not yet know if hydroxychloroquine will be an effective medication for these patients. However, information collected as part of their participation in this trial will help other people in the future. If successful, this trial will reduce the burden of infection amongst high-risk patient groups, in a time-efficient and cost-effective manner, and help to ease the pressures on an already strained healthcare system.

Where is the study run from?
Addenbrookes Hospital (UK)

When is the study starting and how long is it expected to run for?
May 2020 to May 2025

Who is funding the study?
April Trust (UK)

Who is the main contact?
Dr. Rona Smith, add-tr.protect@nhs.net
Mr. Francis Dowling, add-tr.protect@nhs.net

# Contact information

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Scientific

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Public

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# Additional identifiers

**Clinical Trials Information System (CTIS)**
2020-004144-28

**Integrated Research Application System (IRAS)**
288652

**ClinicalTrials.gov (NCT)**
NCT04870333

**Protocol serial number**
Current Study CCTU0307, IRAS 288652; Previous Study CCTU0307, IRAS 282317

# Study information

**Scientific Title**

PROphylaxis for paTiEnts at risk of COVID-19 infecTion (PROTECT)

## Acronym
PROTECT V

## Study objectives
Current study hypothesis as of 05/09/2023 (updated 12/03/2024):

The use of intravenous Sotrovimab prophylaxis in at risk patients population (i.e. dialysis, vasculitis, glomerulonephritis, and kidney and organ transplant patients, primary immunodeficiency, oncology, automimmune/inflammatory disease patients, and those currently receiving immunosuppression) and a confirmed COVID-19 infection in this at-risk population compared to standard care.

Previous study hypothesis as of 24/11/2020 (updated 12/03/2024):

The use of intranasal Niclosamide prophylaxix against SARS-CoV2 infection in at risk patients (i.e. Dialysis, Vasculitis, glomerulonephritis and kidney transplant patients) populations at particularly high risk of COVID-19 and a confirmed COVID-19 infection in this at-risk population compared to standard care.

Previous study hypothesis:
The use of hydroxychloroquine (HCQ) prophylaxis in at risk patients (i.e. haemodialysis, vasculitis, and transplant patients) will increase the time to confirmed COVID-19 infection in this at-risk population compared to standard care.

## Ethics approval required
Ethics approval required

## Ethics approval(s)
1. approved 24/11/2020, South Central Berkshire Research Ethics Committee (Bristol Research Ethics Committee Centre, Whitefriars, Level 3, Block B, Lewins Mead, Bristol, BS1 2NT, United Kingdom; +44 020 7104 8057; berkshire.rec@hra.nhs.uk), ref: 20/SC/0403

2. approved 02/06/2020, East of England - Cambridge East Research Ethics Committee (The Old Chapel, Royal Standard Place, Nottingham, NG1 6FS, United Kingdom; +44 (0)207 104 8102; CambridgeEast.REC@hra.nhs.uk), ref: 20/EE/0146

3. approved 23/10/2020, South Central - South Central Berkshire Research Ethics Committee (Bristol REC Centre, Whitefriars, Level 3, Block B, Lewins Mead, Bristol, BS1 2NT, United Kingdom; +44 (0)207 104 8057; Berkshire.REC@hra.nhs.uk), ref: 20/SC/0403

## Study design
Open-label multi-centre randomized controlled trial

## Primary study design
Interventional

## Study type(s)
Prevention

## Health condition(s) or problem(s) studied
COVID-19 (SARS-CoV-2 infection) in dialysis, vasculitis, and kidney transplant patients

## Interventions
Current Intervention (04/01/2022) (updated 12/03/2024):

Patients will be randomised on 1:1 to receive either a single Intravenous Sotrovimab or standard care (placebo). Randomisation will be carried out using a validated bespoke automated randomisation system. Randomisation will be stratified by PROTECT V sub-group, age and site. Dosing: A 2g single infusion.

Niclosamide (17/12/2020) (updated 12/03/2024):

Patients will be randomised on 1:1 to receive either Nasal Niclosamide or standard care (placebo). Randomisation will be carried out using a validated bespoke automated randomisation system. Randomisation will be stratified by PROTECT V sub-group, age and site. Dosing: 1.4mg per nostril twice daily approximately 12 hours apart. Total daily dose of 5.6mg niclosamide ethanolamine salt

Previous Intervention:

Patients will be randomised to receive either 1:1 oral hydroxychloroquine (HCQ) or standard care (no HCQ). Randomisation will be carried out using a validated bespoke automated randomisation system. Randomisation will be stratified by PROTECT sub-group, age and centre.

Haemodialysis subgroup
Dosing: 600 mg per week given as 200 mg three times per week after each haemodialysis session for 6 months

Vasculitis and transplant subgroups
Dosing: 800 mg for first 2 days followed by 400 mg once a week for 6 months

Duration of follow up (all subgroups):
Until the end of the trial, on average 6 months

## Intervention Type
Drug

## Phase
Phase II/III

## Drug/device/biological/vaccine name(s)
Niclosamide, sotrovimab (current study), hydroxychloroquine sulfate (previous study)

## Primary outcome(s)
Time to confirmed COVID-19 diagnosis via online questionnaires at 6 weekly intervals

## Key secondary outcome(s))
Duration and severity of illness (including mortality) collected through linkage to medical databases and through review of medical records.

### Completion date
03/05/2025

# Eligibility

### Key inclusion criteria
1.1. Dialysis patients receiving in-centre haemodialysis, or
1.2. Diagnosis of vasculitis (according to Chapel Hill Consensus Conference 2012 definitions) and have received immunosuppression (including prednisolone ≥5 mg daily and/or an immunosuppressive agent (cyclophosphamide (oral or IV), rituximab, azathioprine, MMF, methotrexate, tociluzumab, alemtuzumab, abatacept, leflunomide) in the last 3 years, or
1.3. Transplant patients that have a functional kidney transplant (updated 15/05/2020, previously: Transplant patients)
2. Aged at least 18 years
3. No previous confirmed COVID-19 diagnosis
4. No symptoms highly suggestive of COVID-19 infection at screening or since 1st March 2020

Additional Inclusion Criteria (added 05/09/2023) (updated 12/03/2024):

5. Be a member of an immunocompromised population, which includes but is not limited to those groups listed in the core protocol as well as the following:
5.1. Primary immunodeficiency
5.2. Any Oncology, Haematology-Oncology or Haematology patient who is currently receiving or has received chemotherapy or who is immunocompromised as a result of their disease or treatment
5.3. Have a diagnosis of an autoimmune/inflammatory disease currently receiving immunosuppression including those individuals currently on Prednisolone ≥20mg daily for at least 4 weeks. Those who have received Rituximab or Alemtuzumab within the last 12 months would also be eligible.
5.4. Solid organ and haematopoietic stem cell transplant recipients

### Participant type(s)
Patient

### Healthy volunteers allowed
No

### Age group
Mixed

### Lower age limit
18 years

### Upper age limit
100 years

### Sex
All

### Total final enrolment

797

### Key exclusion criteria
1. Inability to provide informed consent
2. Hypersensitivity reaction to hydroxychloroquine, chloroquine or 4-aminoquinolines
3. Contraindication to taking hydroxychloroquine as prophylaxis e.g known epilepsy
4. Already taking chloroquine, hydroxychloroquine or 4-aminoquinolines
5. History of any retinopathy including diabetic retinopathy requiring laser therapy
6. Taking medications which are contra-indicated alongside HCQ - digoxin, halofantrine, amiodarone, moxifloxacin, cyclosporin, mefloquine, praziquantel
7. Known history of prolonged QTc
8. eGFR <15 ml/min
9. Multi-organ transplant recipient (added 15/05/2020)

Additional Exclusion Criteria (added 05/09/2023) (updated 12/03/2024):
In addition to the core exclusion criteria in the master protocol, the presence of any of the following will preclude participant inclusion:

10. If in the opinion of the PI it is not in the best interests of the participant to take part in the study - for example due to limited life expectancy (≤12 months) due to pre-existing co-morbidities
11. History of hypersensitivity reaction to sotrovimab, one of its excipients or any other monoclonal antibody targeting SARS CoV-2
12. History of receiving any monoclonal antibody targeting SARS CoV-2 within the last 6 months
13. Admission to hospital for acute, unplanned care at the time of randomisation or in the two weeks prior to screening
14. History of receiving chimeric antigen receptor T-cell (CAR-T) therapy less than 4 weeks prior to consenting to take part in the study

### Date of first enrolment
01/10/2020

### Date of final enrolment
01/12/2024

## Locations

### Countries of recruitment
United Kingdom

England

Scotland

### Study participating centre
### Addenbrookes Hospital
Cambridge University Hospitals NHS Foundation Trust
Hills Road
Cambridge

England
CB2 0QQ

**Study participating centre**
**Gloucestershire Hospitals Nhs Foundation Trust**
Trust HQ
Alexandra House
Cheltenham
England
GL53 7AN

**Study participating centre**
**Shrewsbury And Telford Hospital Nhs Trust**
Mytton Oak Road
Shrewsbury
England
SY3 8XQ

**Study participating centre**
**Basildon and Thurrock University Hospital**
Nethermayne
Basildon
England
SS16 5NL

**Study participating centre**
**Kent & Canterbury Hospital**
East Kent Hospitals University Nhs Foundation Trust
Ethelbert Road
Canterbury
England
CT1 3NG

**Study participating centre**
**Nottingham University Hospitals NHS Trust**
Trust Headquarters
Queens Medical Centre
Derby Road
Nottingham
England
NG7 2UH

**Study participating centre**
**Royal Stoke University Hospital**
Newcastle Road
Stoke-on-Trent
England
ST4 6QG

**Study participating centre**
**Bradford Royal Infirmary**
Bradford Teaching Hospitals NHS Foundation Trust
Duckworth Lane
Bradford
England
BD9 6RJ

**Study participating centre**
**Northern General Hospital**
Sheffield Teaching Hospitals NHS Foundation Trust
Herries Road
Sheffield
South Yorkshire
Sheffield
England
S5 7AU

**Study participating centre**
**The Royal London Hospital**
Whitechapel Road
Whitechapel
London
England
E1 1BB

**Study participating centre**
**Imperial College Healthcare Nhs Trust**
The Bays
St. Marys Hospital
South Wharf Road

London
England
W2 1BL

**Study participating centre**
**St George's Hospital**
St George's University Hospitals Nhs Foundation Trust
Blackshaw Road
Tooting
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SW17 0QT

**Study participating centre**
**Royal Liverpool University Hospital**
Liverpool University Hospitals Nhs Foundation Trust
Prescot Street
Liverpool
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L7 8XP

**Study participating centre**
**East Surrey Hospital**
Surrey And Sussex Healthcare Nhs Trust
Canada Avenue
Redhill
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RH1 5RH

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**Salford Royal**
Salford Royal Nhs Foundation Trust
Stott Lane
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M6 8HD

**Study participating centre**
**Sunderland Royal Hospital**
South Tyneside And Sunderland Nhs Foundation Trust
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SR4 7TP

**Study participating centre**
**Royal Derby Hospital**
University Hospitals Of Derby And Burton Nhs Foundation Trust
Uttoxeter Road
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DE22 3NE

**Study participating centre**
**St Helier Hospital**
Epsom And St Helier University Hospitals Nhs Trust
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Carshalton
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SM5 1AA

**Study participating centre**
**NHS Greater Glasgow and Clyde**
J B Russell House
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G12 0XH

**Study participating centre**
**King's College Hospital Nhs Foundation Trust**
Denmark Hill
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**Study participating centre**
**NHS Tayside**
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DD3 8EA

**Study participating centre**
**Queen Alexandra Hospital**
Portsmouth Hospitals Nhs Trust
Southwick Hill Road
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**Study participating centre**
**Leicester Royal Infirmary**
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**Study participating centre**
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NE7 7DN

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**Doncaster Royal Infirmary**
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**Royal Preston Hospital**
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PR2 9HT

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**Royal Berkshire Hospital**
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RG1 5AN

**Study participating centre**
**New Cross Hospital**
The Royal Wolverhampton Nhs Trust
Wolverhampton Road
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WV10 0QP

**Study participating centre**
**Torbay Hospital**
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TQ2 7AA

**Study participating centre**
**Norfolk And Norwich University Hospitals Nhs Foundation Trust**
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**Study participating centre**
**Royal Free Hospital**
Royal Free London Nhs Foundation Trust
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# Sponsor information

**Organisation**

Cambridge University Hospitals NHS Foundation Trust

**ROR**
https://ror.org/04v54gj93

**Organisation**
University of Cambridge

**ROR**
https://ror.org/013meh722

# Funder(s)

**Funder type**
Charity

**Funder Name**
April Trust

# Results and Publications

**Individual participant data (IPD) sharing plan**
The datasets generated during and/or analysed during the current study are available on reasonable request from add-tr.protect@nhs.net

**IPD sharing plan summary**
Available on request

**Study outputs**

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|---|---|---|---|---|
| Protocol article | | 25/05/2023 | 27/01/2026 | Yes | No |
| Basic results | | 27/01/2025 | 27/01/2026 | No | No |
| HRA research summary | | | 28/06/2023 | No | No |
| Study website | | 11/11/2025 | 11/11/2025 | No | Yes |