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Study of investigational medicinal product CYT107 in patients with COVID-19 infection who have a low level of white blood cells in their blood (ILIAD 7 trial)

Submission date
24/07/2020

Recruitment status
No longer recruiting

Registration date
07/08/2020

Overall study status
Completed

Last Edited
02/09/2025

Condition category
Infections and Infestations

[_] Prospectively registered
[_] 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.

This study is designed to evaluate the potential ability of the study drug CYT107 to reduce the extent of Intensive Care Unit treatment required and mortality in COVID -19 patients. We believe CYT107 will achieve this by reversing conditions called lymphopenia (where patients have abnormally low levels of white blood cells called lymphocytes) and T cell exhaustion (which prevents the body from dealing with chronic viral infections.

Who can participate?
Hospitalized patients aged 18 - 85 with confirmed low white blood cell count and COVID-19.

What does the study involve?
Participants will be randomly allocated to receive CYT107 or a placebo every 3 - 4 days for 14 days.

What are the possible benefits and risks of participating?
Benefits: possible improvement in immunity.
Risks: possible side effects from the experimental product. These will be closely monitored at all times.

Where is the study run from?
Guy’s Hospital (UK)

When is the study starting and how long is it expected to run for?
May 2020 to March 2024

Who is funding the study?
Revimmune (France)

Who is the main contact?
Mr Michel Morre, mmorre@revimmune.com

Contact information

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Scientific

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Additional identifiers

ClinicalTrials.gov (NCT)
NCT04379076

Clinical Trials Information System (CTIS)
2020-001786-36

Integrated Research Application System (IRAS)
283184

Protocol serial number

Study information

Scientific Title
InterLeukin-7 (CYT107) to Improve Clinical Outcomes in Lymphopenic pAtients With COVID-19 Infection UK Cohort (ILIAD-7-UK)

Acronym
ILIAD-7-UK

Study objectives
Comparison of the effects of CYT107 vs Placebo administered IM at 10µg/kg twice a week for two weeks on immune reconstitution of lymphopenic COVID-19 patients. The aim of the study is to test the ability of CYT107 to produce an immune reconstitution of these patients and observe possible association with a clinical improvement

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 06/05/2020, (London - Central Research Ethics Committee, 3rd Floor, Barlow House, 4 Minshull Street, Manchester, M1 3DZ, UK; +44 (0)207 1048138; londoncentral.rec@hra.nhs.uk), ref: 20/HRA/2191

Primary study design
Interventional

Study design
Randomized double-blind controlled trial

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Lymphopenic COVID-19 patients

Interventions

Approximately 48 participants will be randomized 1:1 to receive
(a) Intramuscular (IM) administration of CYT107 at 3 µg/kg followed, after 48 h of observation, by 10 µg/kg twice a week for 2 weeks or
(b) Intramuscular (IM) placebo (normal saline) at the same frequency

An interim safety review will take place after the first 12 patients. If the CYT107 is well tolerated, the test dose (3 µg/kg) will cease and that initial dose will become the same as the rest of the doses (10 µg/kg). So, the remaining patients will be randomized to receive 5 administrations of
(a) CYT107 at 10 µg/kg every 3 to 4 days for 2 weeks or
(b) Intramuscular (IM) placebo (normal saline) at the same frequency

The randomization list will comprise two arms, CYT017 and Placebo. Randomization will be organized to allow a stratification based on certain co-treatments (anti-virals), age (<60 or ≥60) and gender. We anticipate that during the course of the trial some COVID-19 antivirals may give clear sign of activity. Also, these patients often receive anti-IL-6 or anti-IL-6R antibodies. Such pretreatments or co-administration interventions will be recorded at inclusion and the randomization center will include this information, together with gender, to organize the stratification by appropriate randomization in order to equilibrate the two groups for these co-factors.
Subjects will be allocated randomly within each block. This procedure will be repeated until at least 24 subjects have completed the active Study treatment for the CYT107 cohort and 24 subjects have completed Study treatment for the control (placebo) group, totaling at least 48 subjects. After randomization authorization is granted by the PI at the responsible institution, the randomization assignment will be generated by computer, using an alpha-numeric ID number to identify each site. Subjects, investigators, and all Study team members will be blinded to drug treatment.
Subjects withdrawn prior to randomization (prior to receiving CYT107 or placebo) will be replaced with the next subject recruited, who will receive the same randomization assignment.

Intervention Type
Drug

Phase
Phase II

Drug/device/biological/vaccine name(s)
CYT107

Primary outcome(s)
Absolute lymphocyte count (ALC) of lymphopenic (ALC ≤1000/mm³) COVID-19 infected participants measured using blood count daily to approximately 30 days following initial study drug administration, or hospital discharge

Key secondary outcome(s)
1. The time to clinical improvement as defined by a 2 points improvement in a 7-point ordinal scale for Clinical Assessment, daily through day 30 or hospital discharge (HD)
2. SARS-CoV-2 viral load from measurements at baseline and days of treatment dose 4 and dose 5, day 21 and day 30 or HD (whichever occurs first) determined from upper respiratory tract using any validated quantitative PCR method
3. Incidence of secondary infections based on pre-specified criteria as adjudicated by the

Secondary Infections Committee (SIC) through day 45 measured using patient records
4. Number of days of hospitalization during index hospitalization (defined as time from initial Study drug treatment through HD) measured using patient records
5. Number of days in ICU during index hospitalization measured using patient records
6. Readmissions to ICU through day 45 measured using patient records
7. Organ support free days (OSFDs) during index hospitalization (This includes ventilator assistance free days) measured using patient records
8. Number of readmissions to the hospital through day 45 measured using patient records
9. All-cause mortality through day 45 measured using patient records
10. Absolute numbers of CD4+ and CD8+ T-cell counts measured using blood tests at timepoints indicated on the Schedule of Activities (SoA) through day 30 or HD
11. Track and evaluate other known biomarkers of inflammation, Ferritin, from baseline to day 30 measured using blood tests
12. Track and evaluate other known biomarkers of inflammation, CRP from baseline to day 30 measured using blood tests
13. Track and evaluate other known biomarkers of inflammation, D-dimer from baseline to day 30 measured using blood tests
14. The degree of illness measured using NEWS2 from baseline to day 30
15. Safety assessment: Incidence and scoring of all grade 3-4 adverse events through day 45 (using CTCAE Version 5.0 to assess severity)

Completion date
31/03/2024

Eligibility

Key inclusion criteria
1. A written, signed informed consent, or emergency oral consent, by the patient or the patient's legally authorized representative, and the anticipated ability for participant to be re-consented in the future for ongoing study participation
2. Men and women aged 25 - 80 (inclusive) years of age
3. Hospitalized patients with two absolute lymphocyte count (ALC) ≤1000 cells/mm³, at two-time points at least 24 hours apart, following hospitalization. The first time point should not be performed earlier than 48 hours after hospitalization, thus first test dose can't be administered before 72 hours after hospitalization (From this time point the investigator may choose to further postpone the commencement of IL-7 (CYT107) treatment according to patient's clinical status)
4. Hospitalized patients with moderate to severe hypoxemia requiring oxygen therapy at >4 l per minute nasal cannula or greater to keep saturations >90%, non-invasive positive pressure ventilation (e.g. BIPAP), or patients intubated/ventilated for respiratory failure
5. Confirmed infection with COVID-19 by any acceptable test available/utilized at each site
6. Private insurance or government support (through NHS or other)

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
25 Years

Upper age limit
80 Years

Sex
All

Total final enrolment
112

Key exclusion criteria
1. Pregnancy or breastfeeding
2. Refusal or inability to practice contraception regardless of the gender of the patient
3. ALT and/or AST >5 x ULN
4. Known, active auto-immune disease
5. Ongoing cancer treatment with chemotherapy/immunotherapy or any cancer therapy within the last 3 months and/or ongoing;
6. Patients with past history of solid organ transplant.
7. Active tuberculosis, uncontrolled active HBV or HCV infection, HIV with positive viral load.
8. Hospitalized patients with refractory hypoxia, defined as inability to maintain saturation >85% with maximal available therapy for >6 hours
9. Patients receiving any agent with immune suppressive effects, other than steroids at dosages less than 300 mg/day and/or anti-IL6 treatments like Tocilizumab or Sarilumab which should preferably be minimized
10. Patients with baseline Rockwood Clinical Frailty Scale ≥6
11. Patients under guardianship

Date of first enrolment
14/05/2020

Date of final enrolment
07/03/2022

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Guy’s Hospital
Guy's and St Thomas' NHS Foundation Trust
London

London
United Kingdom
SE1 9RT

Sponsor information

Organisation
Revimmune

Funder(s)

Funder type
Industry

Funder Name
Revimmune

Results and Publications

Individual participant data (IPD) sharing plan
The current data sharing plans for this study are unknown and will be available at a later date

IPD sharing plan summary
Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		04/02/2025	02/09/2025	Yes	No
HRA research summary			28/06/2023	No	No