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Sulodexide in the treatment of COVID-19

Submission date	Recruitment status	[X] Prospectively registered
31/05/2020	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
04/06/2020	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
08/03/2021	Infections and Infestations	

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.

The COVID 19 pandemic has caused a severe impact not only for its clinical manifestation, but also the modifications imposed in the daily routine. The rapid dissemination and novelty of pathophysiology has limited the capability of obtaining useful and truthful information. Recently, information has been being obtained on the impact of this disease on the blood vessels.

The aim of this study is to know whether the use of sulodexide has any effect on the clinical response of patients presenting COVID-19.

Who can participate?
Adults between 40 - 80 years old, with confirmed COVID-19.

What does the study involve?
Patients that visit emergency ward or primary care facility with clinical symptoms of COVID-19 will start oral dose of sulodexide.

A follow-up visit will be scheduled via electronic media (home phone, cell phone, computer, video-connect) at 7 day intervals for 21 days, if there is no form of electronic communication, a personal visit will be arranged at the participant home by one of the trial collaborators. Extra follow-up session will be available at a 24hrs phone line for emergencies as needed.
If hospital care is needed, a follow-up visit will be arranged every day during the course of the hospital stay by a trial collaborator, not interfering with hospital policies or treatments established. If the treating physician determines the necessity to terminate sulodexide, the practitioners will stop medication.

What are the possible benefits and risks of participating?
Benefits: when infected with COVID-19 the use of sulodexide may reduce the severity of clinical symptoms avoiding the need for hospital admission and/or develop more severe complications.
Risks: only the ones related to the use of the medication, mostly reported gastrointestinal discomfort in some patients. will not interfere with commonly recommend treatment of COVID-19

Where is the study run from?
CLINEDEM (Mexico)

When is the study starting and how long is it expected to run for?
April 2020 to November 2020

Who is funding the study?
Investigator initiated and funded

Who is the main contact?
Dr Alejandro Jose Gonzalez Ochoa, alex8as2@yahoo.com.mx

Contact information

Type(s)
Scientific

Contact name
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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
Nil known

Study information

Scientific Title
Sulodexide in the treatment of early stages of COVID-19: A randomised controlled trial

Acronym
ERSul study

Study objectives
Use of a medication with endothelium restoration, antiinflammatory and antithrombotic properties can reduce the severity of presentation of in COVID-19 positive patients

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 28/05/2020 Comite de Etica e Investigacion Facultad de Medicina Mexicali (Coordinacion de posgrado e Investigacion, Av Alvaro Obregon y Julian Carrillo s-n Col. Nueva CP 21100; +52 686 551 9497; cei.fm@uabc.edu.mx), ref: none provided

Study design
Prospective interventional cohort study

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
COVID-19 (SARS-CoV-2 infection)

Interventions
Current interventions as of 09/09/2020:
Group A: patients with COVID-19 early symptoms to received mask placebo 500LRU twice a day + standard of care.

Group B: patients with COVID-19 early symptoms to received Sulodexide 500 RLU bid + standard of care

Group A and B will be randomized by computer software allocation program.

For group A participants, general demographic information will be collected and baseline serum levels of d-dimer, C-reactive protein, Creatinine will be taken; a collaborating physician will be followed to the study under physical home or virtual visit (cell, computer, telephone) every 7 days for a period of 21 days as available, making records of any symptomatology referred to by the patient or need to go to the hospital; in case of admission to hospital, information is requested from your treating physician about its evolution until its release, prior authorization by the patient.

Previous interventions:
Group A: patients with COVID-19 early symptoms to received placebo + conventional treatment;
Group B: patients with COVID-19 early symptoms to received Sulodexide 250 RLU bid + conventional treatment
Group C: high risk of infection to received sulodexide 250 RLU

Group A and B will be randomized by computer software allocation program, group C will be not randomized. Treatment will last 1 month.

For group A participants, general demographic information will be collected and baseline levels of D-dimer taken; will receive placebo on the same packaging as your original sulodexide, a collaborating physician will be followed to the study under physical home or virtual visit (cell, computer, telephone) every 7 days for a period of 21 days as available, making records of any symptomatology referred to by the patient or need to go to the hospital; in case of admission to hospital, information is requested from your treating physician about its evolution until its release, prior authorization by the patient.
If the patient is assigned group B, he will receive doses of sulodexide taking 250LRU (1 tablet) every 12 hours, basal levels of D-dimmer will be taken, will receive the same follow-up as group A.
If group C is assigned, the participant will receive an oral dose of 250LRU every 12 hours for 21 days, if it remains asymptomatic COVID-19 test at 21 days, if you report negative, the participation in the study will be terminated; in case of initiating suspicious symptomatology, testing for COVID-19 will be performed, if positive, will follow the same protocol of group B in relation to follow-up, if negative, will be terminated its participation in the study.

Intervention Type
Drug

Phase
Not Applicable

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

Primary outcome(s)
Current primary outcome measure as of 09/09/2020:
The Clinical-Therapeutic response will be defined as the need for hospitalization, length of stay in hospital (days), need for oxygen support, length of need for oxygen support (days), and death measured using patient records collected between baseline and 21 days

Previous primary outcome measure:
The Clinical-Therapeutic response will be defined as the need for hospitalization, presence of thromboembolic complications, length of stay in hospital (days), need for use of mechanical

ventilation, need for hemodialysis, major haemorrhagic complications, death measured using patient records throughout the study

Key secondary outcome(s))
Current secondary outcome measures as of 09/09/2020:
1. Serum levels of D dimer, C-reactive protein, and Creatinine measured by a blood test at baseline and 14 days
2. Incidence of a thromboembolic event confirmed by ultrasound or CT between baseline and 21 days
3. Incidence of a major bleeding event between baseline and 21 days

Previous secondary outcome measures:
Levels of D dimmer measured by a blood test in an authorized laboratory site. in group A and B, will be measured at the first visit and at the end of the trial (21 days). Group C will be measured only if positive COVID-19 infection

Completion date
30/11/2020

Eligibility

Key inclusion criteria
Current participant inclusion criteria as of 09/09/2020:
1. Less than 3 days onset of COVID-19 suspected symptoms
2. Age between 40 - 80 years
3. Body mass index between 18 - 35 kg/m²
4. >50% calculated risk for severe clinical progression

Previous participant inclusion criteria:
1. Less than 3 days onset of COVID-19 suspected symptoms
2. Age between 40 - 80 years
3. Body mass index between 18 - 35 kg/m²
4. History of DM, hypertension, CPOD, or other chronic disease

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Total final enrolment

Key exclusion criteria
Current participant exclusion criteria as of 09/09/2020:
1. COVID-19 negative test.
2. Reluctant to take medication
3. Reluctant to followup
4. Bed confinement
5. Chronic use of steroids
6. History of deep vein thrombosis in the last 6 months
7. Chronic use of anticoagulation
8. Already in hospital care
9. Previous treatment for COVID-19

Previous participant exclusion criteria:
1. COVID-19 negative test.
2. Reluctant to take medication
3. Reluctant to followup
4. Bed confinement
5. Chronic use of steroids
6. History of deep vein thrombosis in the last 6 months
7. Chronic use of anticoagulation

Date of first enrolment
15/06/2020

Date of final enrolment
06/08/2020

Locations

Countries of recruitment
Mexico

Study participating centre
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Sponsor information

Organisation
CLINEDEM

Funder(s)

Funder type
Other

Funder Name
Investigator initiated and funded

Funder Name
alfasigma Mexico

Results and Publications

Individual participant data (IPD) sharing plan
All data generated or analysed during this study will be included in the subsequent results publication.

IPD sharing plan summary
Other

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	07/03/2021	08/03/2021	Yes	No
Basic results		04/12/2020	11/12/2020	No	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes