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Effect of the anti-inflammatory test drug anakinra in patients with coronavirus (COVID-19) requiring oxygen support

Submission date
01/08/2020

Recruitment status
No longer recruiting

Registration date
10/08/2020

Overall study status
Completed

Last Edited
15/01/2021

Condition category
Respiratory

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

Plain English summary of protocol

Background and study arms:
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.

Due to respiratory failure in patients with severe COVID-19, an inflammatory state may develop. It is hoped that the anti-inflammatory drug anakinra may be effective in neutralization of this inflammation and therefore may be lifesaving in selected patients with severe COVID-19 infection. This study aims to investigate whether anakinra may reduce the need for invasive mechanical ventilation and deaths when compared to standard of care in patients with severe COVID-19.

Who can participate?
Adult patients with severe COVID-19 (as per the WHO definition of severity) hospitalized at Sultan Qaboos University Hospital, Oman during the study recruitment period.

What does the study involve?
Eligible patients who provide written informed consent will be given the study drug anakinra in addition to standard treatment as defined by the hospital. Anakinra will be given as follows: 100 mg twice a day for 3 days, then 100 mg once daily for 7 days, all given via an injection into the fat layer between the skin and muscle.

What are the possible benefits and risks of participating?
Possible benefits include a decreased need for invasive mechanical ventilation and admission to the intensive care unit. Additionally, there may be decreased mortality from severe COVID-19 associated pneumonia.

Possible risks include injection site reactions, a rise in liver enzymes, and a decrease in neutrophil and or platelet count.

Where is the study run from?
The study takes place at Sultan Qaboos University Hospital (Oman)

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

Who is funding the study?
The study is funded by the Medical Research Center (Oman) with support from OQ (Oman).

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
Nil known

Study information

Scientific Title
Anti-interleukin IL-1 receptor antagonist (anakinra) for the treatment of severe COVID-19 pneumonia and hyperinflammatory syndrome in patients admitted at Sultan Qaboos University Hospital

Acronym
OMA-COVID-19

Study objectives
Anakinra reduces need for invasive mechanical ventilation and deaths more than the standard of care in patients with severe COVID-19.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 15/06/2020, Medical Research Ethics Committee (College of Medicine and Health Sciences, Sultan Qaboos University, Oman. P.O Box 35. Al Khodh 123; + 968-24141103; mrec@squ.edu.om), ref: SQU-EC/169/2020 MREC #2136

Study design
Single-center interventional study with a retrospectively derived historical control cohort as the comparator group.

Primary study design
Interventional

Secondary study design
Non randomised study

Study setting(s)
Hospital

Study type(s)
Treatment

Participant information sheet
Not available in web format, please use contact details to request a participant information sheet

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

Interventions
Eligible patients providing written informed consent will be administered anakinra (in addition to standard treatment as defined by the hospital protocols) via a subcutaneous route over 10 days as follows: 100 mg twice a day for 3 days, followed by 100 mg once daily for 7 days.

In patients on hemodialysis or with a glomerular filtration rate of less than 30 ml/min, the anakinra dosing schedule will be as follows: 100 mg once daily for 3 days, followed by 100 mg once every other day for 7 days via a subcutaneous route

A historical cohort retrospectively identified (fulfilling the same inclusion and exclusion criteria as the interventional arm and received the same standard of care) will be used as a comparator group.

Intervention Type
Drug

Phase
Not Applicable

Drug/device/biological/vaccine name(s)
Anakinra (brand name Kineret). Swedish Orphan Biovitrum, Stockholm, Sweden.

Primary outcome measure
1. Need for invasive mechanical ventilation (IMV) or admission to the intensive care unit (ICU) is assessed from patient notes/records between baseline and 14 days
2. In-hospital mortality is assessed from patient notes/records between baseline and death or discharge

Secondary outcome measures
1. Difference in the mean oxygen therapy requirements at baseline, 4 and 14 days
2. Change in the inflammatory biomarkers of disease severity (D-dimer, absolute lymphocyte count, serum ferritin, lactate dehydrogenase, c-reactive protein, and interleukin [IL-6] levels) measured using blood serum samples at baseline, 4 and 14 days

Overall study start date
25/05/2020

Completion date
15/08/2020

Eligibility

Key inclusion criteria
1. Aged >18 years
2. Admitted to the participating hospital with COVID-19 and any of the following:
2.1. Severe pneumonia defined as pneumonia and respiratory rate >30 breaths/min; or SpO2 <90% in room air or 93% or less under oxygen 6 l/min or more in addition to signs indicative of worsening respiratory function
2.2. Acute respiratory distress syndrome (ARDS) defined as pneumonia and bilateral opacities (on chest x-ray) and respiratory failure with PaO2/FiO2 ≤300 mmHg

Participant type(s)
Patient

Age group
Adult

Lower age limit
18 Years

Sex
Both

Target number of participants
45 in the intervention arm AND 30 in the comparative historical control group

Total final enrolment
75

Key exclusion criteria
1. Known allergy to anakinra
2. Pregnant or breast-feeding women
3. Active or untreated TB
4. Apparent risk for gastrointestinal perforation (defined as recent [within 3 months] abdominal surgery, active inflammatory bowel disease, or active endoscopy-proven peptic ulcer disease)
5. Active cancer
6. Active bacterial or fungal infection
7. Chronic active liver disease
8. Absolute neutrophil count (ANC <1,500) or platelet count <50,000 /µl

Date of first enrolment
15/06/2020

Date of final enrolment

25/07/2020

Locations

Countries of recruitment
Oman

Study participating centre
Sultan Qaboos University Hospital
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Sponsor information

Organisation
Sultan Qaboos University

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Sponsor type
University/education

Website
http://www.squ.edu.om/

ROR
https://ror.org/04wq8zb47

Funder(s)

Funder type

Industry

Funder Name
OQ

Results and Publications

Publication and dissemination plan
Planned publication of the study results in a peer-reviewed journal.

Intention to publish date
31/10/2020

Individual participant data (IPD) sharing plan
The data sharing plans for the current study are unknown and will be made 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?
Protocol file		04/08/2020	05/09/2020	No	No
Results article	results	01/02/2021	15/01/2021	Yes	No