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A study of a new vaccine against Marburg virus in adults aged 18–55 years

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Registration date 01/05/2024	**Overall study status** Ongoing	
Last Edited 16/10/2026	**Condition category** Infections and Infestations	

Plain English summary of protocol

Background and study aims

The Marburg virus is a member of the same family as Ebolavirus and causes a life-threatening disease (Marburg virus disease, MVD) which can be fatal in up to 88% of people. It is naturally carried by Egyptian fruit bats, but humans can be infected and pass it on to others. Outbreaks have recently occurred in several countries in sub-Saharan Africa, including in Equatorial Guinea in 2023. There is currently no licensed vaccine or treatment for MVD.

A potential vaccine against the Marburg virus, ChAdOx1 Marburg, has been developed at the University of Oxford. Using the same technology as the Oxford-AstraZeneca ChAdOx1 nCoV-2019 vaccine, the use of the ChAdOx1 Marburg vaccine could generate antibodies that would prevent MVD from taking hold.

In this study the ChAdOx1 Marburg vaccine will be given for the first time to healthy adults aged 18-55 years. They will receive either a single dose or two doses of the vaccine 3 months apart. The main aim of the study is to find out whether the vaccine is safe and what side effects it may cause. A second aim is to look at how the human immune system responds to the vaccine.

Who can participate?

Healthy volunteers aged 18 to 55 years

What does the study involve?

Participants will receive either a single dose of ChAdOx1 Marburg vaccine or two doses 3 months apart in the deltoid region of the arm. The study includes an initial lead-in cohort (6 participants), followed by two additional cohorts (cohort 2 and cohort 3). Cohort 1 and cohort 2 will receive two doses of the ChAdOx1 Marburg vaccine 3 months apart. Cohort 3 will receive a single dose of ChAdOx1 Marburg. Cohort 2 (40 participants) and cohort 3 (20 participants) will contain two groups of participants distinguished by previous ChAdOx vaccination status. The first 6 participants in the study will attend a total of 13 study visits (1 screening, 2 vaccination and 10 follow-up visits). Group 2 (40 participants) will attend a total of 15 study visits (1 screening, 2 vaccination and 12 follow-up visits), while Group 3 (20 participants) will attend a total of 11 study visits (1 screening, 1 vaccination and 9 follow-up visits). The follow-up duration for each participant is 12 months from the first vaccination. Each participant will be asked to

record any symptoms following vaccination in an electronic diary: expected injection site and general symptoms will be recorded for 7 days and any other symptoms will be recorded for 28 days following each vaccine dose.

What are the possible benefits and risks of participating?
By taking part in the study, the participants will be helping in the development of a much-needed vaccine against a deadly disease. However, they will not gain any direct personal health benefit from the study. They should not assume they have gained any protection from Marburg virus infection if they receive the ChAdOx1 Marburg vaccine.
The most likely side effects that recipients of ChAdOx1 Marburg may experience are short-lived local reactions (primarily injection site redness, swelling, itchiness or a feeling of warmth) and general reactions (flu-like symptoms such as muscle aches, joint aches, feverishness, chills, headache, nausea, tiredness and feeling generally unwell) that resolve completely within days.
The safety of the ChAdOx1 vector has been assessed in multiple clinical trials and also in the large ChAdOx1 COVID-19 trials involving over 10,000 volunteers. The Oxford/AstraZeneca COVID-19 vaccine (ChAdOx1 nCov-19) has been rolled out globally with millions of doses administered, at dose levels equivalent to those used in this trial. Extremely rare but serious adverse reactions have been reported following vaccination with the Oxford/AstraZeneca COVID-19, including thrombosis with thrombocytopenia syndrome, immune thrombocytopenia, capillary leak syndrome, Guillain-Barre syndrome, transverse myelitis and anaphylaxis.
It is unknown whether these rare conditions could occur following other ChAdOx-based vaccines, but participants will be informed of them and investigators made aware of potential warning signs. Participants will be provided with a list of symptoms for which they should seek immediate medical attention.
As this is a first-in-human trial, there is a chance that participants could experience an unexpectedly severe or previously unseen side effect. They will thus be provided with a medic alert card with a 24-hour study mobile number to contact the study doctors at any time if they experience any significant symptoms or have concerns. They will also be required to complete an electronic symptom diary for the expected injection site and general symptoms for 7 days and any other symptoms for 28 days following administration of each vaccine dose.
Participants will also be informed of a theoretical interference with the efficacy of future ChAdOx-based vaccine doses due to immunity to the ChAdOx1 platform. Whether this occurs in practice will be one of the questions this study will investigate. The efficacy of previous doses of ChAdOx-based vaccines will be unaffected.
Given existing safety data which supports the use of ChAdOx1 nCoV-19 use in pregnant women, there is no reason to believe ChAdOx1 Marburg would be harmful to women or the foetus during pregnancy. However, as yet there are no data on the use of ChAdOx1 Marburg in pregnancy. Therefore, pregnant women will be excluded from the trial and people of childbearing potential will be required to use effective contraception to take part.
Blood sampling during the trial may cause slight pain, bruising, light-headedness or fainting. The volume of blood given in the trial is less than that taken by regular blood donors over the same period, so should not compromise healthy participants.
The medical tests carried out during the trial screening and follow-up have the potential to find incidental medical problems that may require the referral of participants for further investigation. Participants will be informed of these and, with their consent, their general practitioner will be contacted.
The study will be overseen by an independent Data Safety Monitoring Committee.

Where is the study run from?
University of Oxford (UK)

When is the study starting and how long is it expected to run for?
March 2024 to June 2029

Who is funding the study?
1. Innovate UK
2. Calleva Foundation

Who is the main contact?
Dr Bilyana Stoilova, info@ovg.ox.ac.uk

Contact information

Type(s)
Public, Scientific, Principal investigator

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Additional identifiers

Integrated Research Application System (IRAS)
1009218

Central Portfolio Management System (CPMS)
60732

Protocol serial number
OVG2023/11

Study information

Scientific Title
A Phase I, first-in-human safety and immunogenicity study of a Marburg virus vaccine, ChAdOx1 Marburg, in healthy volunteers aged 18–55 years in the UK

Acronym
MAGIC-01

Study objectives
1. To assess the safety and tolerability of ChAdOx1 Marburg in healthy volunteers aged 18-55 years
2. To assess the immunogenicity of ChAdOx1 Marburg in healthy volunteers aged 18-55 years

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 29/04/2024, London - Brent Research Ethics Committee (Health Research Authority, 2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; +44 (0)20 7104 8229; brent.rec@hra.nhs.uk), ref: 24/LO/0243

Primary study design
Interventional

Study design
Open-label non-randomized study

Study type(s)
Safety

Health condition(s) or problem(s) studied
Marburg virus disease (MVD)

Interventions
Current interventions as of 14/08/2024:
ChAdOx1 Marburg vaccine will be given to 66 healthy adults aged 18-55 years. They will receive either a single dose of ChAdOx1 Marburg vaccine, or two doses 3 months apart intramuscularly (IM) into the deltoid region of the arm. The dose of ChAdOx1 Marburg to be used in the trial will be 5 x 10^10 virus particles per administration. The study includes an initial lead-in cohort (6 participants), followed by two additional cohorts (cohort 2 and cohort 3). Cohort 1 and cohort 2 will receive two doses of the ChAdOx1 Marburg vaccine 3 months apart. Cohort 3 will receive a single dose of ChAdOx1 Marburg. Cohort 2 (40 participants) and cohort 3 (20 participants) will contain two groups of participants distinguished by previous ChAdOx vaccination status. The first 6 participants in the study will attend a total of 13 study visits (1 screening, 2 vaccination and 10 follow-up visits). Group 2 (40 participants) will attend a total of 15 study visits (1 screening, 2 vaccination and 12 follow-up visits) while Group 3 (20 participants) will attend a total of 11 study visits (1 screening, 1 vaccination and 9 follow-up visits). The follow-up duration for each participant is 12 months from the first vaccination. Each participant will be asked to record any symptoms following vaccination in an electronic diary: expected injection site and general symptoms will be recorded for 7 days and any other symptoms will be recorded for 28 days following administration of each vaccine dose

Previous interventions:
ChAdOx1 Marburg vaccine will be given to 46 healthy adults aged 18-55 years. They will receive two doses of the vaccine 3 months apart intramuscularly (IM) into the deltoid region of the arm. The dose of ChAdOx1 Marburg to be used in the trial will be 5 x 10^10 virus particles per administration. The study includes an initial lead-in cohort (6 participants), followed by a second cohort (40 participants) containing two groups distinguished by previous ChAdOx vaccination status. The first 6 participants in the study will attend a total of 13 study visits (1 screening, 2

vaccination and 10 follow-up visits). The remaining 40 participants will attend a total of 11 study visits (1 screening, 2 vaccination and 8 follow-up visits). The follow-up duration for each participant is 12 months from the first vaccination. Each participant will be asked to record any symptoms following vaccination in an electronic diary: expected injection site and general symptoms will be recorded for 7 days and any other symptoms will be recorded for 28 days following administration of each vaccine dose.

Intervention Type
Biological/Vaccine

Phase
Phase I

Drug/device/biological/vaccine name(s)
ChAdOx1 Marburg

Primary outcome(s)
1. Occurrence of solicited local and systemic reactogenicity signs and symptoms for 7 days following each vaccination (Day 0 and Day 84), as recorded by participants in the electronic diary
2. Occurrence of unsolicited adverse events (AEs) for 28 days following each vaccination (Day 0 and Day 84), as recorded by participants in the electronic diary
3. Occurrence of abnormal safety laboratory measures for the duration of the study period (Day 0 to Day 365)
4. Occurrence of serious adverse events (SAEs) and adverse events of special interest (AESIs) for the duration of the study period (Day 0 to Day 365)

Key secondary outcome(s)
1. Serological response assessed using ELISA or other relevant assays before and after vaccination at Day 0 and Day 84

Completion date
30/06/2029

Eligibility

Key inclusion criteria
1. Adults aged between 18 to 55 years (inclusive) at the time of screening.
2. Medically healthy, such that according to the investigator's judgement, hospitalisation within the study period is not anticipated, and the participant appears likely to be able to remain a study participant through the end of protocol-specified follow-up. Planned elective procedures for pre-existing conditions are allowable.
3. Able to attend the scheduled visits and comply with all study procedures, including internet access for the recording of electronic diary cards.
4. Willing and able to give informed consent for participation in the study.
5. Willing to allow confirmation of past medical and vaccination history either through provision of or access to a medical record summary or other medical documentation or allowing investigators to obtain a copy of their medical history from their GP practice or via electronic patient records.
6. Willing to allow their GP and/or consultant, if appropriate, to be notified of participation in the study.
7. Willing to provide their national insurance number or passport number to be registered on

The Over-Volunteering Prevention System (TOPS).
8. Agreement to refrain from blood donation during the study.
9. For participants of childbearing potential only: willing to use effective contraception for the duration of the study AND to have a pregnancy test on the days of screening and vaccinations. The pregnancy tests taken prior to vaccinations must be negative.

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 Years

Upper age limit
55 Years

Sex
All

Total final enrolment
66

Key exclusion criteria
1. Participation in another research study, in which an investigational product has been administered or other procedures performed which could compromise the integrity of this study (such as significant volumes of blood taken) within the 12 weeks prior to enrolment or are planning to do so within the trial period.
2. History of previous confirmed or suspected Marburg virus infection.
3. Administration of immunoglobulins and/or any blood products within three months preceding the planned administration of the vaccine candidate.
4. Any confirmed or suspected immunosuppressive or immunodeficient state, including HIV infection; asplenia; severe infection(s); receipt of immunosuppressive therapy such as anti-cancer chemotherapy or radiation therapy within the preceding 12 months, or long-term systemic corticosteroid therapy (including for more than 7 consecutive days within three months preceding the planned administration of the vaccine candidate).
5. History of anaphylaxis in relation to vaccination.
6. History of allergic disease or reactions likely to be exacerbated by any component of the vaccine including hypersensitivity to the active substance or to any of the excipients of the IMP.
7. History of hereditary angioedema, acquired angioedema, or idiopathic angioedema.
8. History of cancer (except basal cell carcinoma of the skin and cervical carcinoma in situ).
9. History of any serious psychiatric condition likely to affect participation in the study.
10. Participants who are pregnant, breastfeeding or lactating, or are planning pregnancy during the course of the study.
11. History of a bleeding disorder (e.g. clotting factor deficiency, acquired coagulopathy or platelet disorder), or prior history of significant bleeding or bruising following IM injections or venepuncture.

12. History of confirmed major thrombotic event (including cerebral venous sinus thrombosis, deep vein thrombosis, pulmonary embolism); history of antiphospholipid syndrome, or history of heparin-induced thrombocytopenia.
13. History of capillary leak syndrome.
14. History of Guillain-Barre syndrome, transverse myelitis or other neuroinflammatory syndrome
15. Moderate, severe and/or uncontrolled cardiovascular disease, respiratory disease, gastrointestinal disease, liver disease, renal disease, haematological, immunological, endocrine disorder, or neurological illness (note, mild well-controlled co-morbidities in a healthy participant are acceptable as judged by the Investigator)
16. Suspected or known current alcohol abuse as per investigator's discretion.
17. Suspected or known injecting drug use within the 5 years preceding enrolment.
18. Acute or chronic hepatitis B or hepatitis C infection.
19. HIV infection.
20. Any clinically significant finding on screening that is either unlikely to resolve or does not resolve (for example on repeat testing at the discretion of an Investigator) within the recruitment timeline of the study.
21. Any other significant disease, disorder or finding which may significantly increase the risk to the volunteer if included in the study, affect the ability of the volunteer to participate in the study, or impair interpretation of the study data.
22. Member of the study team. This may include: anyone on the delegation log; anyone who might be anticipated to be placed onto the delegation log in the course of the study; anyone who has access to personal data on study participants (beyond name, contact details, DOB); and anyone who attends meetings where details of the study are discussed, for example safety updates.

Date of first enrolment
15/05/2024

Date of final enrolment
31/01/2025

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
University of Oxford
Oxford Vaccine Group
Oxford
England
OX3 7LE

Sponsor information

Organisation
University of Oxford

ROR
https://ror.org/052gg0110

Funder(s)

Funder type
Government

Funder Name
Innovate UK

Alternative Name(s)
Technology Strategy Board

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Funder Name
Calleva Foundation

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 (further details will be provided later).

IPD sharing plan summary
Published as a supplement to the results publication