

SA's first Covid-19 vaccine trial starts

The first Covid-19 vaccine clinical trial on the continent was announced during a virtual press conference hosted by the University of the Witwatersrand, Johannesburg (Wits).



Source: sanews.org.za

“This is a landmark moment for South Africa and Africa at this stage of the Covid-19 pandemic. As we enter winter in South Africa and pressure increases on public hospitals, now more than ever we need a vaccine to prevent infection by Covid-19. We began screening participants for the South African Oxford 1 COVID-19 vaccine trial last week and the first participants will be vaccinated this week,” says Shabir Madhi, professor of vaccinology at Wits University and director of the South Africa Medical Research Council (SAMRC) Vaccines and Infectious Diseases Analytics Research Unit (VIDA), who leads the South African Ox1Cov-19 Vaccine VIDA-Trial.

Prior to launch, the South African study was subject to rigorous review and has been approved by the South African Health Products Regulatory Authority (SAHPRA) and the Human Research Ethics Committee of the University of the Witwatersrand.

Furthermore, after eliciting and considering public comment, the Department of Agriculture, Forestry and Fisheries approved import of the investigational vaccine for use in the trial.

Dr Sandile Buthelezi, director general at the Department of Health, said government is excited at the launch of the vaccine

trial, which will go a long way to cement South Africa's leadership in the scientific space. "With Covid-19 infections increasing every day, the development of the vaccine will be the last solution in the long term, and we are fully behind the team leading this trial."

Wits University is collaborating with the University of Oxford and the Oxford Jenner Institute on the South African trial.

SA's participation in international trials

The vaccine is being evaluated in a large clinical trial in the UK where more than 4,000 participants have already been enrolled.

In addition to the South African study, similar and related studies are about to start in Brazil. An even larger study of the same vaccine of up to 30,000 participants is planned in the USA.

It is essential that vaccine studies are performed in southern hemisphere countries, including in the African region, concurrently with studies in northern hemisphere countries. "This allows evaluation of the efficacy and safety of candidate vaccines to be assessed in a global context, failing which the introduction of many life-saving vaccines into public immunization programmes for low-middle income countries frequently lags behind those in high-income countries," says Professor Helen Rees, chair of SAHPRA and executive director of the Wits Reproductive Health and HIV Institute (Wits RHI), said

She also co-directs the Wits African Leadership in Vaccinology Excellence (ALIVE) flagship programme and is engaged in global discussions with Gavi, the Vaccine Alliance and the World Health Organisation to ensure equitable access for all countries, including those in Africa, should a successful vaccine be developed.

About the SA vaccine on trial

The technical name of the vaccine is ChAdOx1 nCoV-19, as it is made from a virus called ChAdOx1, which is a weakened and non-replicating version of a common cold virus (adenovirus). The vaccine has been engineered to express the SARS-CoV-2 spike protein.

The vaccine being used in the South African trial is the same as that being used in the UK and Brazil.

The vaccine was made by adding genetic material – called spike glycoprotein – that is expressed on the surface of SARS-CoV-2 to the ChAdOx1 virus.

This spike glycoprotein is usually found on the surface of the novel coronavirus and is what gives the virus its distinctive crown-like appearance. These spikes play an essential role in laying a path for infection by the coronavirus. The virus that causes Covid-19 uses this spike protein to bind to ACE2 receptors on human cells.

ACE2 is a protein on the surface of many cell types. It is an enzyme that generates small proteins that then go on to regulate functions in the cell. In this way, the virus gains entry to the cells in the human body and causes Covid-19 infection.

Researchers have shown that antibodies produced against sections of the spike protein after natural infection are able to neutralize (kill) the virus when tested in the laboratory.

By vaccinating volunteers with ChAdOx1 nCoV-19, scientists hope to make the human body recognise and develop an immune response (develop antibodies) to the spike glycoprotein that will help stop the SARS-CoV-2 virus from entering human cells and causing Covid-19.

Local application of a global response

In addition to the more than 4 000 people already vaccinated in the UK with the ChAdOx1 nCoV-19 vaccine, other vaccines made from the ChAdOx1 virus have also been given to more than 320 people to date.

These vaccines have been shown to be safe and well-tolerated, although they can cause temporary side effects, such as a temperature, headache or a sore arm.

There are currently over 100 candidate Covid vaccines in development around the world and many of South Africa's best vaccine research institutions will soon be involved in a range of vaccine studies evaluating other types of potential Covid vaccines.

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