Race on for Ebola drug

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As the deadliest Ebola outbreak in history tightens its grip on west Africa, pharmaceutical companies have refocused their quest for a treatment or vaccine.

While several experimental drugs exist, few have moved beyond the stage of animal tests and negotiations are under way to try and fast-track drugs for the haemorrhagic fever that kills up to 90 percent of people it infects.

These are some of the candidate drugs.

VACCINES:

A vaccine being developed by British pharma company GlaxoSmithKline (GSK) may enter clinical trials to test for safety and efficacy next month, World Health Organisation vaccines head Jean-Marie Okwo-Bele has told French radio.

He said results may be out by the end of the year, and "since this is an emergency, we can put emergency procedures in place... so that we can have a vaccine available by 2015."

The GSK vaccine, being developed with backing from the US National Institute for Allergy and Infectious Diseases (NIAID), is made of an engineered virus, or vector, containing two non-infectious Ebola genes.

The vector enters individual cells of a patient and stimulate them to

create a protein against which the body will mount a defensive immune response.

NIAID director Anthony Fauci told AFP a vaccine "could be available for nursing staff by 2015".

The NIAID is also supporting the development of another vaccine which its maker, Johnson & Johnson subsidiary Crucell, said "has been shown to completely protect monkeys against the virus with a single dose".

A Phase I clinical trial with 32 volunteers started in 2006, and showed the drug to be safe at certain doses. A followup study is planned for late 2015 or early 2016.

American firm Profectus Biosciences has an animal virus-based vaccine in pre-clinical testing, and the Thomas Jefferson University in Pennsylvania is working on a candidate drug based on an established rabies vaccine.

- TREATMENTS

ZMapp, a cocktail of three antibodies manufactured by Mapp Biopharmaceutical, has been given to two American missionaries and more recently a Spanish priest, all infected with Ebola while working with patients in west Africa.

The Americans were said to have improved, but authorities say it is too early to tell whether this can be ascribed to the experimental drug, which has cured Ebola in mice and primates in tests.

US regulators last week loosened restrictions on another experimental drug, TKM-Ebola from Canada-based Tekmira, which may allow it to be tried on infected patients.

In tests on monkeys the drug, being developed under a $140-million (105-million-euro) contract with the US Department of Defense, provided 100 percent protection against an otherwise lethal dose of Ebola.

Other antiviral candidates include favipiravir, which started out as a flu treatment, and BCX4430—a broad-spectrum drug whose developers believe it may work against an array of viruses.

Herve Raoul, director of the high-security Inserm laboratory in Lyon, said finding an effective antiviral drug was of the highest priority.

A drug that can limit proliferation of the virus within a patient would allow their immune system to recover and make antibodies to fight the infection.

This would reduce the number of people falling severely ill, and create conditions conducive to improving sanitation, which is essential for halting the spread of a virus easily killed by soap and water.