Source : www.thehindu.com Date : 2019-08-16

TAMING EBOLA IN DEMOCRATIC REPUBLIC OF CONGO

Relevant for: Developmental Issues | Topic: Health & Sanitation and related issues

A health worker filling a syringe with Ebola vaccine before injecting it to a patient, in Goma, Democratic Republic of Congo, earlier this month. | Photo Credit: BAZ RATNER

There is good news a year after Ebola struck the Democratic Republic of the Congo (DRC), making 2,619 people ill and killing 1,823. Assuming that the final test results are valid, the disease — which has had an overall fatality rate of about 67% in the current outbreak in DRC — can be treated with drugs, especially if treatment is started early.

Earlier, Merck's preventive Ebola vaccine (rVSV-ZEBOV-GP), which has had a 97.5% efficacy, helped slow the virus's spread, but was not able to stop the disease in its tracks.

Now, four candidate drugs — Zmapp, remdesivir, REGN-EB3 and mAb114 — have been tested in a randomised trial, which began in November last year and, as on August 9, had enrolled 681 of the target 725 patients. Preliminary results, of 499 of the participants, show that two of the candidates, REGN-EB3 and mAb114, were highly effective in treating people infected with the virus. While REGN-EB3 "crossed the efficacy threshold" set for the trial, the efficacy of mAb114 was also comparable, say the results.

The overall mortality among patients randomly chosen to receive REGN-EB3 and mAb114 was 29% and 34% respectively. In the case of Zmapp and remdesivir, the overall mortality was way higher at 49% and 53% respectively.

The striking difference in efficacy was in patients who were recently infected (and so had a low viral load). Further, REGN-EB3 cured the disease in 94% of such patients, while, in the case of mAb114, it was 89%.

Taking into consideration the superiority of the two candidates, data and safety monitoring board recommended that all future patients be given either of the two, though they have not yet been licensed.

REGN-EB3 is a cocktail of three antibodies generated by injecting Ebola virus into a mice model that has a human-like immune system, while mAb114's development goes back to the Ebola outbreak in 1995 in Congo.

The first step towards finding a cure was taken in 2005 by veteran Congolese microbiologist Jean Jacques Muyembe Tamfum, who helped discover Ebola virus in 1976 and is now tasked with bringing the current outbreak under control. Mr. Tamfum transfused blood of Ebola survivors into eight people with disease and though antibodies were not isolated, seven of the eight survived. In 2006, antibodies isolated from two survivors led to the development of mAb114.

While we will have to wait till end September or early October before final analysis of all the trial data is performed, there is a high possibility that the final results will be along the same lines as the preliminary results, which were based on the data of 499 patients — nearly 69% of the total number of participants.

Vaccination strategies have so far faced huge challenges, including those relating to tracing primary contacts and contacts of contacts, and the mistrust among the infected people towards authorities and health-care workers. However, in all likelihood, the attitude of people will change, and they will become more willing to seek medical care without delay, once they know that Ebola is a curable disease.

Trial of a new Ebola preventive vaccine from Johnson & Johnson has already begun in Uganda.

While the interim analysis shows Merck's vaccine to be highly effective, the durability of protection is not known. Further, a high coverage will be required to prevent outbreaks. And when outbreaks do occur, the availability of an approved treatment will be important for optimal responses.

If the final results of Merck's preventive vaccine trial and the two drugs to treat the disease do not spring any adverse surprise, Ebola, which has had a free run so far, is all set to be tamed.

prasad.ravindranath@thehindu.co.in

END