
Editorial

Future Hopes of a Vaccine to Trigger Immune Response

The five articles in this number of Vidurava cover a range of fields related to the mosquito-borne disease dengue, and consequently provides almost all the necessary information on the onset of disease, its clinical manifestation, disease management, entomological aspects as well precautionary measures for prevention and control of the spread of the disease. The disease is seen to range from the milder self-limiting dengue fever (DF), to the more severe Dengue Haemorrhagic fever (DHF), and to the life-threatening Dengue Shock Syndrome (DSS). The consoling aspect of the disease seems to be the fact that around 75% of the patients may remain asymptomatic, while the rest may develop symptoms, and of this lot only about 1-2 percent will develop into the severe forms DHF or DSS.

Of the disease symptoms, the phenomenon referred to as fluid leakage, causes various complications, including increasing the severity of the disease resulting in liver and kidney failure and finally death. It is however, consoling to note that at least one drug called Rupatadine has been shown to contain or block what the medical scientists call the “Platelet Activating Factor” (PAF), which seems to promote the fluid leakage process resulting from increased capillary permeability.

In the meantime a news release of the National Institute of Health (NIH) of the US Department of Health and Human Services dated 21st February 2017, refers to the development of an experimental vaccine, which is said to target the mosquito saliva. According to this news release, The National Institute of Allergy and Infectious Diseases (NIAID), a constituent of NIH, has launched a phase I clinical trial to test the investigational vaccine intended to provide broad protection against a range of mosquito-

transmitted diseases such as Zika, Malaria, West Nile Fever and Dengue Fever. This investigational vaccine called AGS-v is said to have been developed by a London-based pharmaceutical company called SEEK.

According to information provided, unlike other vaccines targeting specific mosquito-borne diseases, the AGS-v candidate is said to be designed to “trigger an immune response” to mosquito saliva rather than to a specific virus or parasite carried by mosquitoes. Currently a statistically designed study is claimed to be underway, where a set of ‘participants’ enrolled, are expected to be randomly assigned to receive one of three vaccine regimens over a pre-designed timeframe. The study is expected to be completed by summer 2018.

What seems to be significant about this study is that unlike other vaccines targeting specific mosquito-borne diseases, the AGS-v candidate is expected to not only to trigger an immune response to mosquito saliva rather than to a specific virus or parasite carried by mosquitoes, but also that mosquitoes who take a blood meal from a ASG-v- vaccinated participant, may have altered behaviour possibly resulting in early death or a reduced ability to reproduce. The experimental vaccine may also consequently hinder disease transmission by controlling the mosquito population. (see fact sheets and other NIAID-related materials on the NIAID website).

The Director of NIAID commenting on the expectations has said that “A single vaccine capable of protecting against the scourge of mosquito-borne diseases is a novel concept that, if proven successful would be a monumental public health advance.”

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