

The Urgent Need for a Vaccine for Humans against the Deadly Tick Borne Neuropathogenic Powassan Virus Infecting Humans in the Era of COVID-19 Especially When deadlier Concomitant COVID-19 and Powassan Virus are Now Being Reported

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Quotation: *"Because of the high levels of mortality associated with Powassan Virus infections it is of the utmost importance that the research and development of this and all other vaccine preparations for Powassan Virus move forward with dispatch".*

The Powassan Virus is a Tick Borne Neuropathogen which has ramifications that are deadlier than Lyme Disease [1,2]. This virus is deadlier than Lyme Diseases because it is able to be associated with rapid onset of neurological symptoms and its brief transmission time, namely, 15 minutes after attachment to its victim [1,2].

The symptoms associated with this deadly neuropathogen can begin to manifest themselves from seven days to one month [2]. The Powassan Virus is found in the Western Hemisphere and is the only flavivirus that is associated with ticks.

The virus has been found to be fatal in 10% of cases and is linked to a vast array of neurological manifestations such as: encephalitis, meningitis, fevers, seizures, neurological deficits, hemiplegia, mental status changes, hearing impairment and chronic motor difficulties [1,2]. The outcome of this disease is especially severe in individuals who have pre-existing conditions [1-3]. Sadly, at this time there aren't any vaccines or other therapeutic regimens to prevent or treat a human victim of Tick Borne Powassan Virus [2].

The literature is now starting to report the presence of concomitant Tick Borne Powassan Virus the COVID-19 in areas that are endemic for ticks such as Northern New Jersey New York State, Northeastern Pennsylvania, Northeastern States and the Great Lakes region of US and Canada [1-5,7]. This new scenario brings forth a new scenario in which the victim of this newly emerging deadly duo of Powassan Virus plus COVID-19 can acquire a deadlier form of COVID-19 infection [5].

Coronavirus COVID-19 is a viral pathogen that is most frequently associated with the respiratory tract and droplet infections which are spread from person to person via coughing, sneezing or speaking [2]. The symptoms commonly linked to COVID-19 can appear from 2 to 14 days from the period of exposure [2]. COVID-19 infections can be mild to severe with cases developing into pneumonia and can involve multi-organ failure [2]. Vaccine preparations have now been developed, and they are starting to improve the outcome of infections associated with COVID-19 infections circa May 2021 as relates to prevention and treatment [6].

As Concerns the treatment and outcome of patients with Powassan, Virus the picture has been quite bleak. Ten percent of the cases of Powassan Virus ended in death with dire neurological ramifications and which also included cases of encephalitis, and meningitis [1,2,7].

In October of 2020, the Wistar Institute announced that it had developed a synthetic DNA Vaccine against the Powassan Virus [7]. The sites on the virus that this Powassan Virus vaccine targeted were portions of the viral envelope protein [7].

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The initial early pre-clinical studies with this vaccine brought about broad T and B cell immune responses when tested in animal model studies [7].

This vaccine preparation marks one of the earliest efforts to develop a means to prevent infection with Powassan Virus in lab mice.

Thus, because of the high levels of mortality associated with Powassan Virus infections it is of the utmost importance that the research and development of this and all other vaccine preparations for Powassan Virus move forward with dispatch, as was the case with the rapid and successful development, and deployment of the Vaccine Preps for COVID-19!!

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