Bourbon: Is it Infectious?

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ABSTRACT

Billions of people around the world is at a higher risk of many viral and bacterial diseases transmitted through various vectors like mosquitoes, ticks and other vectors, which is now a major health problem in many different countries having difficulty in prediction, assessment and prevention or control. Developing cutting edge technologies for rapid identification and diagnosis are the most crucial aspects for physicians, epidemiologists, molecular biologists and laboratory diagnosticians. Bourbon virus, which has recently been discovered, belongs to Thogotovirus is most likely to spread through tick or other insect bites. The emerging lethal Bourbon Virus, an enigmatic suffering is strongly suspected for mortality. Only one case has been identified thus far, researchers are still identifying and learning the exact mechanism and symptoms of the disease and In-silico approaches may help in this regard that may acumen to know the molecular aspects.

A mysterious anguish that leads to mortality of a farmer in Kansas, US on February 25th, 2015 has implicated a rise of another deadly virus after the impact of enigmatic sufferings from Ebola called the Bourbon Virus as reported by Vox media on February 25th, 2015, though the virus was identified in 2014. Bourbon Virus is an RNA virus, which causes enigmatic sufferings classified under Thogotovirus genus belong to the family Orthomyxoviridae. Similar to Bourbon virus other classification in the family includes Araguari, Aransas Bay, Dhori, Jos, Thogoto, and Upolu viruses (1-3), none of which had caused a fatality until Bourbon came in the picture. The virus was discovered in 2014 by Center for Disease Control and Prevention (CDC) from a blood sample of case patient. Globally seven cases were reported on Thogotovirus earlier in Western Hemisphere, this Bourbon virus case was accounted for a mystery case as it leads to fatality and considered as potential infectious virus. Because the virus has been recently discovered and tagged with various life threatening symptoms, it is necessary to gain profound understanding and knowledge to ensure effective treatment as well as cure. The previously healthy case patient had several tick bites on his body before he became ill with nausea, weakness and diarrhoea. The following day brought fever, headache, fatigue and joint pain. The patient was prescribed doxycycline because of a history of tick bites, fever and fatigue, but proved ineffective. The patient's body condition did not improve resulting in multi organ failure and ultimately death. Testing of the specimen with Plaque Reduction Neutralization techniques that are originally used to test for Heartland virus antibodies. DNA Sequencing and their classification analyses using Phylogeny proved crucial to identify and classify the virus as 'Bourbon Virus' as the member of Thogotovirus. The patient suffered from Bourbon virus was treated with commonly known antibiotic, Doxycycline but proved to be ineffective. But in other cases of tick-borne diseases this drug ensures the cure. Ticks, the vectors of Heartland virus and Lyme disease, are also associated with the Bourbon virus. Although the ticks vary by geographic climate and areas, they tend to be generally more active during warmer months. Commonly experienced symptoms are fever, body aches, fatigue or rashes. Yet the mechanism of infection through this virus is not fully understood, it is likely reported that the Bourbon Virus is...
transmitted through ticks and other tick borne vectors like insect bites. No proper diagnostic test is yet available, avoidance of bites is recommended strongly. As per the reported cases of several tick borne diseases like Lyme disease, which is most common disease accounting for over 22,500 confirmed and 7,500 probable Lyme disease cases in 2010 including Rocky Mountain spotted fever, tick-borne relapsing fever, and other related tick borne diseases by CDC. Similar to this virus another case in 2012 was reported with similar characteristics symptoms that were identified in Missouri and Tennessee residents named as Heartland virus. Experts say that both viruses have the similar distinguished features that are related to tick borne sufferings. The symptoms reported were nausea, weakness, diarrhoea, loss of appetite, chills, fever, headache, low platelets counts, low white-blood counts, muscle aches and gastrointestinal sufferings. General implications for this virus were reported as negative during testing the blood samples that then confirmed by doctors that the patient has been anguished by Bourbon virus or Heartland virus as a bout, the person had been perfectly healthier. The deadly impact of this virus has led us to think again in a perspective of proper diagnostics and treatment and low cost vaccines. As of now Ebola virus has been implicated as a bioterrorism for humans. Due to only one case reported regarding Bourbon virus it is difficult to justify the spectrum of illness and unusual symptoms retrieved from blood sample. May be there are many cases unreported regarding this virus but tendency to find new human diseases is always challenging and more over finding cure and diagnostics may be considered to be an achievement in modern scientific era with the utilization of clinical facilities and sophisticated diagnostics instruments. Not only the clinical methodologies can help in finding cure but also profound knowledge in computational approaches in molecular levels may assist with greater influence. Not knowing what caused that can cause a lot of issues.

REFERENCES
2. Bourbon virus", CDC website (Division of Vector-Borne Diseases, CDC), retrieved 4 March 2015