University Health Network | Toronto General Hospital Centre of Excellence releases Canadian Statement on Zika Virus and Guillain-Barré Syndrome

March 31, 2016

The GBS/CIDP Foundation of Canada is actively monitoring the link between Zika virus and an increased incidence of Guillain-Barre syndrome in affected regions.

A new study published in the Lancet examines the rates of GBS during a Zika virus outbreak in French Polynesia, from October 2013 – April 2014 (Cao-Lormeau et al. *Lancet* 2016). During this large outbreak, 32000 patients were assessed for possible infection (Gourinat AC *Emerg Infect Dis* 2015: 21; 84-6). Previously, Zika had been reported as a mild illness consisting of fever, rash, joint /muscle pain. However, new reports emerged of Guillain-Barré syndrome in 42 French Polynesian patients. Given a population of approximately 275,000, this represents an incidence rate of over 15 cases per 100,000 population – higher than the expected GBS incidence rate of 2/100,000 person-years. The study also showed that patients presenting with GBS had 59 times greater odds of having antibodies against Zika virus as compared with controls presenting to the emergency room with non-febrile illness – thus implicating Zika as the cause of GBS in these 42 patients.

Since September 2015, there has been an ongoing outbreak of Zika virus in Brazil and other countries in Central and South America. Nine countries have reported either increased rates of GBS, or detection of Zika virus in patients suffering from GBS (http://www.who.int/mediacentre/news/statements/2016/zika-ec/en/). For example, in El Salvador, there were 46 GBS cases reported between Dec 1, 2015 and January 6, 2016; while typically, there are 14 cases per month nationwide. As a result of this spike in GBS cases, the GBS/CIDP Foundation of Canada is committed to ensuring that our own local and provincial health systems are well informed and prepared to deal with this epidemic. In addition, we hope to be able to provide support and expertise to the most affected areas of the world. Currently, there have been very few Canadians identified who returned to Canada sick with zika virus. None have developed GBS.

GBS/CIDP Foundation of Canada is a non-profit organization supporting individuals and their families affected by Guillain-Barré syndrome (GBS), Chronic Inflammatory Demyelinating Polyneuropathy (CIDP), and variants through, support, education, research, and advocacy. The foundation has a 16 member Medical Advisory Board comprised of the Nation's leading peripheral neuropathy experts in research and patient care. For information please visit gbs-cidp.org/Canada.

Recommendations have been provided by the Global Medical Advisory Board of the GBS|CIDP Foundation International, and are as follows:

a) Education will be needed to alert those infected by Zika of the symptoms of GBS so they may seek healthcare early. The GBS|CIDP Foundation has materials on its website.

b) Education of first responder healthcare workers will be needed as the complications of Zika include a number of diseases clinically similar to GBS and diagnostic confusion might arise.

c) Early neurologic consultation including nerve conduction studies will be needed. Differentiating GBS from other illnesses including primary Zika infection itself is important as a recent study suggested that early neurologic consultation can improve outcomes in GBS.

d) Hospitals will need to be prepared for GBS patients, some of whom will have long stays in the Intensive Care Unit.

e) Resources will be needed to provide the proven treatments, IVIg and plasma exchange.

f) Resources will be needed for additional rehabilitation required after the acute illness.

g) The IGOS Zika protocol, modeled on the successful IGOS protocol (www.gbsstudies.org) should be in place before the epidemics start to capture data.

h) Serological confirmation of Zika virus should be done in all cases of GBS with additional testing for the other triggers that may also lead to GBS such as dengue, chikungunya, C. jejuni, EBV, CMV, and hepatitis A/B/C/E.

i) Biospecimens such as sera, urine, and spinal fluid should be saved and stored according to pre-specified protocols for future studies as this provides an unparalleled research opportunity to understand GBS and bring new treatments forward.

j) Through the World Federation of Neurology, the American Academy of Neurology, and other organizations, neurologists should be engaged and prepared to see these patients and collect the important data.

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On behalf of the University Health Network/Toronto General Hospital COE