Session: 78. Zika Virus
Thursday, October 5, 2017: 12:30 PM

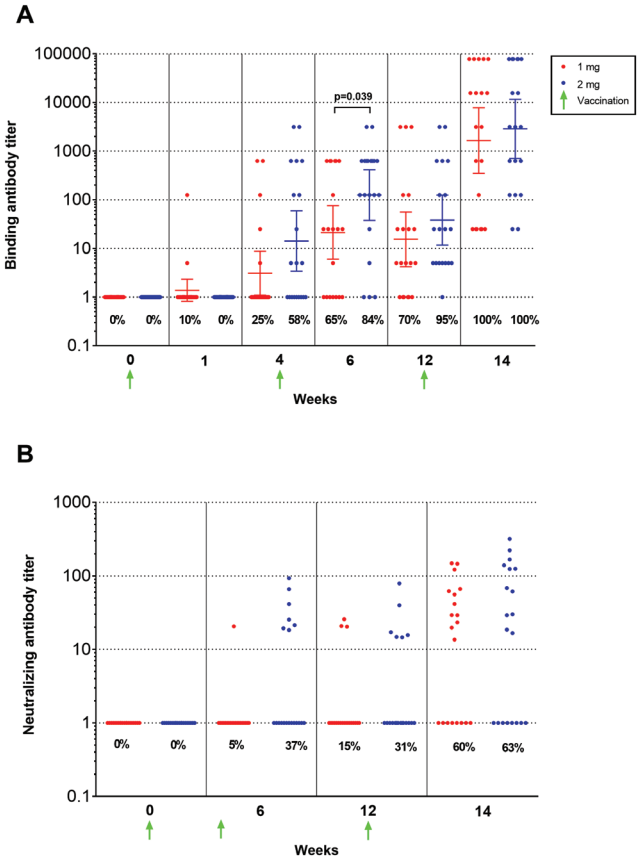
Background. While Zika virus (ZIKV) infection is typically self-limited, congenital birth defects and Guillain-Barré syndrome are well-described. There are no therapies or vaccines against ZIKV infection.

Methods. ZIKA-001 is a phase I, open label, clinical trial designed to evaluate the safety, side effect profile, and immunogenicity of a synthetic, DNA vaccine (GLS-5700) targeting the pre-membrane+envelope proteins (prME) of the virus. Two groups of 20 participants received GLS-5700 at one of two dose levels: 1 mg or 2 mg DNA/dose at 0, 4, and 12 weeks. Vaccine was administered as 0.1 or 0.2 ml (1 or 2 mg) intradermal (ID) injection followed by electroporation (EP) with the CELLECTRA®-3P device

Results. The median age of the 40 participants was 38 (IQR 30–54) years; 60% were female 30% Latino and 78% white. No SAEs have been reported to date. Local minor AEs were injection site pain, redness, swelling and itching that occurred in half of the participants. Systemic adverse events were rare and included headache, myalgias, upper respiratory infections, fatigue/malaise and nausea.

Four weeks after the first dose 25% vs. 60% of the participants in the 1 mg and 2 mg dose seroconverted. By week 6, 2 weeks after the second dose, the response was 65 and 84% respectively and 2 weeks after the third dose all participants in both dosing groups developed antibodies. At the end of the vaccination period over 60% of vaccinated person neutralized Zika virus in a vero cell assay and greater than 80% on neuronal cell targets. The protective efficacy of the antibodies generated by the vaccine was evaluated in the lethal IFNAR−/− mouse model. After the intraperitoneal administration of 0.1 ml of either baseline, week 14 serum or PBS the animals were challenged with 10^6 PFUs of ZIKV PR209 isolate. Whereas animals administered PBS (control) or baseline serum succumbed after a median of 5 days, those pretreated with week 14 serum from study participants survived suggesting that the humoral response generated by the vaccine is protective in this model.

Conclusion. Our trial shows for the first time in humans the safety and immunogenicity of an engineered DNA encoding consensus viral protein against ZIKV. Future studies will evaluate the effectiveness of the vaccine.



Disclosures. **C. C. Roberts**, GeneOne: Member, Salary. **S. White**, GeneOne: Member, Salary. **A. S. Khan**, Inovio: Employee and Shareholder, Salary and Stock. **J. Boyer**, Inovio: Employee and Shareholder, Salary and Stock. **Y. K. Park**, GeneOne: Board Member, CEO and Employee, Salary and Stock. **S. Trottier**, Canadian Institutes of Health Research: Investigator, Research grant. **C. Remigio**, GeneOne: Employee and Shareholder, Salary and Stock. **G. P. Kobinger**, GeneOne: Grant Investigator and Scientific Advisor, Grant recipient and Research support. **D. Weiner**, GeneOne: Grant Investigator and Scientific Advisor, Grant recipient, Licensing agreement or royalty and Stock. **J. Maslow**, GeneOne: Employee, Salary and Stock.

840. Zika Virus Epidemic in the Dominican Republic, 2016

Farah Peña, MD[1]; Raquel Pimentel, MD[1]; Shaveta Khosla, MPH[2]; Supriya Mehta, MHS, PhD[2] and Maximo Brito, MD, MPH[3]; [1]Epidemiology Directorate, Ministry of Health, Santo Domingo, Dominican Republic, [2]School of Public Health, University of Illinois at Chicago, Chicago, Illinois, [3]Division of Infectious Diseases, University of Illinois at Chicago, Chicago, Illinois

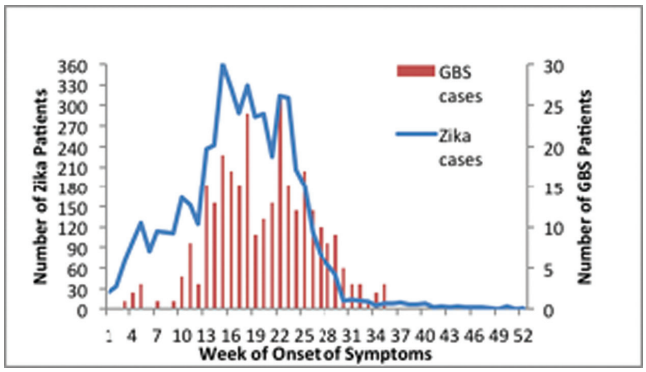
Session: 78. Zika Virus
Thursday, October 5, 2017: 12:30 PM

Background. The first cases of Zika (ZIKV) in the Americas were reported in Easter Island, Chile in 2014. The epidemic spread to Brazil and Central America in 2015. We describe the extent and distribution of the countrywide ZIKV epidemic in the Dominican Republic.

Methods. The DR Ministry of Health (MoH) instituted active surveillance, monitoring and mandatory reporting of suspected cases of ZIKV in 2015 through the National System of Epidemiologic Surveillance (SINAVE). In the pre-epidemic period, the MoH conducted active search and blood testing of suspected cases in communities rumored to have cases of the disease. During the epidemic, the MoH conducted weekly monitoring of all cases of febrile exanthems, flaccid paralysis and meningitis, and also conducted rapid surveys in highly populated areas to identify local outbreaks. Data from SINAVE was exported and analyzed using SAS.

Results. A total of 5226 cases ZIKV were reported to the MoH from January 2016 to December 2016 (figure). Cases were 74% female, of whom 1275 (33%) were pregnant. Most of the cases (51%) were diagnosed in the age group of 20 to 39, and did not differ by gender. The majority (58%) of cases were reported from a metropolitan area. Almost all cases (82%) were treated in the outpatient setting, while 17% were hospitalized. Only 3 patients died and 95% had an uncomplicated course. There were 285 cases of Guillain BarrŽ Syndrome (GBS; Figure), with the epidemic curve showing a peak 2–4 weeks following the peak of the epidemic. Compared with patients with suspected ZIKV (n = 1054), those with GBS were more likely to be male (47% vs. 19%, $P < 0.001$), aged ≥40 years (53% vs. 19%, $P < 0.001$),, more likely to have complications (18% vs. 6%, $P < 0.001$) and comorbidity (2% vs. 0.2%, $P = 0.04$) Seventeen (6%) of confirmed GBS cases resulted in death.

Figure. Cases of Zika and GBS, Dominican Republic, 2016



Conclusion. The DR reported one of the largest ZIKV outbreaks in the Americas. The epidemic started early in 2016 and had all but subsided by May 2017. Although most cases had an uncomplicated course, incidence of GBS was high.

Disclosures. **All authors:** No reported disclosures.

841. Dengue IgG Seropositivity and Zika Viral Load

Jennifer Read, MD, MS, MPH, DTM&H (FAAP, FIDSA)[1]; Luisa I. Alvarado, MD, FAAP[2]; Brenda Torres-Velasquez, PhD[1]; Jorge L. Munoz-Jordan, PhD[1]; Manuela Beltran, MS[1]; Sheila Capre, MD[2]; Laura Adams, DVM MPH[1]; Sanet Torres-Torres, MD[2]; Gilberto Santiago, PhD[1]; Lillian Rivera, MD, FAAP[2]; Aidsa Rivera-Sánchez, MS[1]; Olga D. Lorenzi, MS[1]; Tyler Sharp, PhD[1]; Carlos Garcia-Gubern, MD[2] and Stephen Waterman, MD[1]; [1]Centers for Disease Control and Prevention, San Juan, PR, [2]Ponce Health Sciences University Consortium, Ponce, PR

Session: 78. Zika Virus
Thursday, October 5, 2017: 12:30 PM

Background. Secondary dengue virus (DENV) infections are typically more severe than primary infections. It is not known whether previous DENV infection is associated with higher Zika virus (ZIKV) quantitative RT-PCR results (viral loads (VLs)) in areas endemic for DENV such as Puerto Rico. Our objective was to analyze the association between previous DENV infection (DENV IgG-positive) and ZIKV VL among children with symptomatic ZIKV infection enrolled in the Sentinel Enhanced Dengue and Acute Febrile Illness Surveillance System (SEDSS) in Puerto Rico.

Methods. The study population for this analysis comprised individuals <18 years of age enrolled in SEDSS during 2016 who were ZIKV PCR-positive in serum (using the CDC Trioplex RT-polymerase chain reaction (RT-PCR) assay) within 5 days post-onset (DPO) of symptoms. ZIKV VLs (genome copies/mL) were determined using an RNA standard curve generated from the RT-PCR assay