



International Conference and Exhibition on

VIROLOGY

5-7 September 2011 Baltimore, USA

In the war of viral infections IgE may play an important role: Antibody kinetics in Dengue

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Although models of IgE antibody response during infectious disease are almost non-existent, our studies evaluating the dynamics of antibody responses indicate that IgE plays a critical athological role that has been overlooked. Studies of the dynamic antibody response have shown that only half of the patients develop rapid IgM responses that can be detected between days 3 to 7 of illness, and that decline to undetectable levels over 3-6 months. Moreover, less than half of the secondary dengue cases can be detected during this time interval by basic IgM testing. Of concern, some patients delay antibody production, thus further complicating the early detection of cases during a dengue outbreak. Elevations of other antibodies have been observed during the first 2 months after dengue infection: IgA to 154% by 15-20 days, IgG to 135% by 10-15 days, and IgD to 141%. IgE production and response are highly specific, stronger and faster than those observed with other antibodies. Furthermore, antibody kinetics at the different stages of the disease are very different. Analyses have also revealed significant differences on IgE levels between subjects with primary and secondary infections. The implications of IgE are far- eaching given that IgE can attain a maximal response in as few as 3 days, and is significantly higher in dengue hemorrhagic fever and/or dengue shock syndrome patients, compared to dengue fever and non-dengue patients. These antibody kinetics have important research, clinical and diagnostic implications.

Biography

Dr. Míguez is a Professor at Florida International University, whose research on the IgE on infectious diseases has been extensively recognized. With over 15 years of government funded immunological research, she has pioneered the discovery of specific IgE responses to virus, including dengue, HIV and herpes virus. These studies have resulted in multiple patents and over 80 peer reviewed publications.