

FOLLOW-UP OF CHILDREN BORN TO MOTHERS WITH VIRUS ZIKA INFECTION DURING PREGNANCY: SITUATION TWO YEARS AFTER THE WORLDWIDE ALERT

D.Aguilera-Alonso¹, S. Pérez Muñoz¹, E. M. López Medina¹, F. Baquero-Artigao¹, T. Sainz¹, M. Cabrera Lafuente², D. Montero Vega³, J. Villota Arrieta¹, M. J.Mellado Peña¹, M. G. López-Hortelano¹.

(1) Department of Infectious Diseases and Tropical Pediatrics, Hospital La Paz, Madrid, Spain. (2) Department of Gynecology and Obstetrics, Hospital La Paz, Madrid, Spain. (3) Department of Microbiology, Hospital La Paz, Madrid, Spain

BACKGROUND

- Zika virus infection (ZVI) is a significant public health problem due to its association with neurological pathology, especially in children born to mothers with ZVI during pregnancy.
- During the first trimester of pregnancy, maternal ZVI presents a risk of fetal anomalies between 1-13% according to the population evaluated. Most of the data available come from endemic areas and it is complicated to calculate the risk of fetal involvement in regions without autochthonous cases.

OBJECTIVE

- To analyze the characteristics and development of children born to mothers with ZVI during pregnancy in a Spanish National Referral Centre for Tropical Diseases after two years of follow-up.

METHODS

- We reviewed the infants born to mothers with a recent ZVI diagnosed confirmed or probable during pregnancy from January 2016 to December 2017, evaluated at a Spanish Referral Center for Pediatric Tropical diseases.
- Following the protocol established in our center, after infection diagnosed in the mother, the children were evaluated at birth with a serological study (IgG and IgM against Zika virus by ELISA and confirmed with anti-Zika antibodies by plaque-reduction neutralization test), Zika virus PCR in blood and urine, shell-vial culture of CMV in urine and a detailed physical examination with complete somatometry.
 - The ocular fundus exam, auditory evoked potential and brain ultrasonography are performed at birth.
 - Children are evaluated at one, three, six and nine months old with serological studies and other supplementary tests according to the previous results.

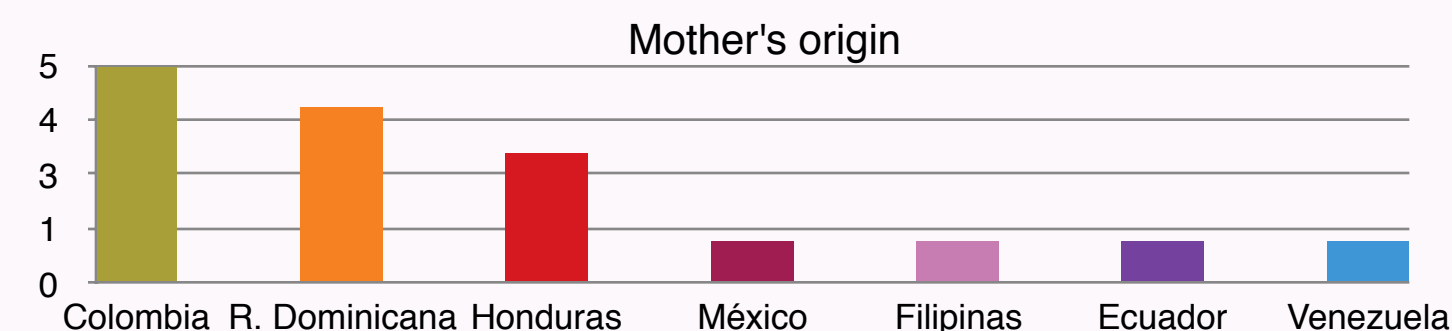
RESULTS

Maternal background

- All were from endemic areas.
- Mean gestational age at diagnosis of 18 weeks (rank: 8-34).
- Prenatal ultrasounds were pathological in 2/16 case: one showed microcephaly and corpus callosum alteration and other one corpus callosum alteration.

Symptoms during pregnancy: 9/16 mothers

Symptom	Number
Fever	7
Rash	6
Asthenia	4
Headache	2



Newborn characteristics

- Sixteen term newborns were included.
 - All with normal physical examinations and anthropometry according to gestational age.
 - During follow-up, all had normal physical examinations and anthropometry.
- Eye fundus:** normal in all newborns.
 - Auditory evoked potential:** normal in all newborns.
 - Cerebral ultrasound** at birth showed malformations in 2 cases: lenticulostriate vasculopathy and mild periventricular echogenicity. Normalized during follow-up.

Test	Positive	Negative	Indeterminate	Total
IgM Zika	1	15	-	16
IgG Zika	16	-	-	16
Anti-Zika antib. by neutra.	8	-	8	16
Blood Zika PCR	2	6	-	8
Urine Zika PCR	1	10	-	11
IgG Dengue	5	1	-	6
IgG Chikungunya	4	1	-	5

	+	-	Total		1 month	3 months	6 months	9 months
IgM Zika	0	16	16	IgG Zika positive	10	3	1	-
IgG Zika	16	0	16	IgG Zika negative	5	8	3	-
Blood Zika PCR	0	14	14	Discharged	-	-	6	3
Urine Zika PCR	0	14	14	Keep on follow-up	15	13	6	3
CSF Zika PCR	0	2	2	Lost of follow-up	1	2	1	-

DISCUSSION

- No child born to mother with ZVI during pregnancy developed congenital infection nor significant adverse outcomes during follow-up.
- Maternal antibodies in a half of the children became negative at the first and third months.