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EDITORIAL

Zika and microcephaly in Latin America: An emerging threat for pregnant travelers?

Latin America has witnessed the arrival of significant emerging arboviruses, such as chikungunya (CHIKV) and Zika (ZIKV) during the last three years (2013–2015) [1,2]. In both cases, they have rapidly expanded over multiple countries in the region. In South America, new significant clinical manifestations and evolutions not previously described in other regions of the world have been noted [3].

In this setting, pregnant travelers health has been significantly affected given the possible occurrence of infection and consequences of infection during pregnancy and also the threat of congenital cases, even fatal in some occasions [4]. In the specific cases of ZIKV, in Brazil, the increase in congenital microcephaly cases observed during the last months have raised significant concern for all other countries where this arbovirus has appeared and where conditions for transmission are suitable. As of February 2016, ZIKV is present in Brazil, Colombia, Mexico, Guatemala, Honduras, El Salvador, Panama, Dominican Republic, Puerto Rico, Guadeloupe, Barbados, Ecuador, Venezuela, Surinam, Guyana, French Guyana, Bolivia, Paraguay, Costa Rica, Nicaragua and Peru.

Although the mechanisms of ZIKV pathogenesis appear to fall in line with the requirements for centrosome abnormalities, there is as of yet no evidence to prove full culpability [5], but the association and significant increase of microcephaly in areas where ZIKV is now endemic demands the attention of health authorities. Travel warnings suggest that pregnant women avoid travel (to endemic countries -USA) or even (to endemic areas, below 2200 masl- Colombia). Future studies need to be performed in order to establish and solidify this link. In particular, vertical transmission of ZIKV needs to be concretely demonstrated as well as any direct or indirect effects of infection on neural development. This should include a complete study of risk factors for microcephaly, because, there are multiple etiological agents linked to microcephaly, including non-infectious causes (Table 1). Recent declarations of the World Health Organization [8], indicate that a causal relationship between Zika infection during pregnancy and microcephaly is strongly suspected, though not yet scientifically proven.

Furthermore, studies should explore other aberrations in foetal development apart from microcephaly [5], but

Table 1 Etiological agents and risk factors for microcephaly.

Period and types	Etiologies
Congenital	
Genetic	Inherited genetic disorders, syndromes and mutations
External, chemical agents	Brain injury due to teratogenic drugs, toxins and chemical products, including foetal alcohol syndrome, radiation
Metabolic diseases	Diabetes
Nutritional	Malnutrition (maternal malnutrition, maternal folate deficiency, placental insufficiency)
Vascular	Hypoxic-ischemic lesions
Infectious	Transplacental infections of the central nervous system
	STORCH infections: syphilis, toxoplasmosis, rubella, cytomegalovirus, herpes simplex virus
	HIV
	Other viruses
Post-partum	
	Brain vascular and non-vascular injuries
	Meningitis
	Encephalitis
	Congenital encephalitis due to HIV
	Cupper intoxication
	Chronic renal failure

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recently from Brazil there is new evidence indicating that ZIKV intrauterine infection can causes foetal brain abnormality and microcephaly [6].

Adherence to national and international protocols related to microcephaly and ZIKV is of utmost importance, wide training and education of healthcare workers, including travel medicine practitioners is also of high relevance with regard to this threat. Also very important are, increased personal protection measures when visiting endemic zones and enhanced vector control by health authorities in countries with circulation of this and other arboviruses.

In Brazil, three deaths have been reported in association with ZIKV, one of them in a newborn, but recently in Colombia, a report of a death in a teenager with sickle cell disease has been recently published [7], suggesting that comorbidities are a risk factor for severe evolution, as expected.

Conflict of interest

None declared.

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