



Zika infection in pregnancy: Follow up and outcomes, where are all the data?



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Zika virus (ZIKV) infection has emerged in the Americas as a major threat for people living in tropical and subtropical areas with *Aedes aegypti* and *Aedes albopictus*. The infection also poses a risk to travelers visiting those regions [1,2]. Up to the period 2015–2016, ZIKV caused outbreaks and epidemics in almost 50 countries and then remained as endemic in such regions where entomological and ecoepidemiological conditions were favorable [2].

Beyond the period of acute and heightened international interest, especially after being declared a Public Health Emergency by the World Health Organization [3], research still needs to address many unanswered questions about the consequences of this viral infection, particularly during pregnancy and childhood [2,4,5]. In this setting, the study of Rodriguez-Morales et al., published in Travel Medicine and Infectious Disease (TMAID) [6], is of particular importance as it reports on the clinical manifestations and outcomes of ZIKV infection in pregnant women and their newborns in a department from Colombia.

As expected, these pregnant women presented particularly rash, fever and infections during all the trimesters of gestation. Microcephaly was observed in less than 3% [6], which is consistent with similar studies, but it draws special attention to the Congenital Zika Syndrome (CZS) that may include other complications and manifestations beyond the finding of a head circumference percentile below -2 SD [1]. This study also underlines the potential influence of co-infections during pregnancy, an issue recently highlighted in other reports and studies in the Americas [7–9].

Brazil and Colombia have been fore runners in research on this topic in the South American region, but more studies from other neighboring countries, especially in the Andean region, such as Bolivia [10], are urgently needed, in order to better define the impact of ZIKV among those populations.

For example, in countries such as Bolivia, since its epidemiological registry started in 2016, almost 2600 suspected cases of Zika were reported spanning the epidemics period with a significant rise in 2017 [11]. Overall, 33.7% of these cases were in women aged 15–39 years

old. Even though 31 microcephaly cases associated with Zika were reported, there is a lack of studies about Zika in pregnancy and its implications. A recent study revealed that ZIKV has been circulating in tropical areas (e.g. Beni, Santa Cruz de la Sierra) [10], where *Aedes aegypti* is endemic [12] and most of the suspected cases are located (e.g. 17.3% Beni, and 63.1% Santa Cruz de la Sierra). Consequences of those infections as well those undiagnosed, asymptomatic women and their outcomes, are many questions that studies such as those from Rodriguez-Morales et al., published in TMAID [6], raise questions regarding outcomes for other epidemiological settings such as Bolivia. Even more, a study among 814 volunteer blood donors from the cities of Santa Cruz de la Sierra, La Paz, Cochabamba, Tarija and Beni screened for IgG against ZIKV, found that 39% in Beni, 21.5% in Santa Cruz and 0.5% in Tarija were seropositive (0% for La Paz and Cochabamba) [10].

Although the epidemic is over in most countries, further studies are necessary to investigate the effects of ZIKV on pregnancy outcomes and child development. As Rodriguez-Morales et al. stated [6], given the complex ecoepidemiological scenario, microcephaly and the CZS should remain a matter of concern in endemic areas as well in pregnant women travelling to and returning from there, including Bolivia as well. Despite being a relatively low-frequency event, CZS represents a threat for childhood development, requiring additional studies and follow-up. For the near future, this may have also implications for other potential emerging arboviral diseases with possible sequelae during pregnancy and early childhood. More studies contributing to the clinical description of pregnant women with ZIKV are urgently needed in different endemic areas, including Bolivia.

Conflicts of interest

None.

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