

Are the 2014–2016 Zika and Chikungunya epidemics in Colombia associated with a higher use of antihistamines?



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Dear Sir,

Concomitant circulation and epidemic peaks of the Zika (ZIKV), Chikungunya (CHIKV) and Dengue (DENV) viruses have been identified as public health problems in Latin America and the Caribbean [1]. The cutaneous manifestations of these arboviruses are reported for ZIKV as a nonspecific and diffuse rash consisting of macules and papules that appear 3–12 days after initial infection, and the eruption may be pruritic [2,3]. Due to the relative frequency of these manifestations and the availability of antihistamines for the symptomatic management of pruritus and other dermatological reactions, it was proposed to study the frequency of prescription and dispensing of antihistamines between 2014 and 2016, when the epidemiological peaks of infection by ZIKV and CHIKV occurred in Colombia.

We carried out a retrospective study based on the prescription records of antihistamines between July 2014 and July 2016, when the epidemiological peaks of infection occurred by ZIKV and CHIKV in Colombia (all reported and confirmed cases of ZIKV and CHIKV were obtained from the surveillance system [SIVIGILA] of the Colombian National Institute of Health, which is public, on a monthly basis during the same evaluation dates of the prescription records). Correlations between these arboviral diseases incidence and antihistamines uses were ran. A $p < 0.05$ was considered statistically significant.

In a population of 6.5 million during the 26 months of observation, a total of 62,480 prescriptions were made with an average of 2,408 different antihistamines monthly; loratadine (49.7%) and chlorpheniramine (29.2%) were the most frequent, with a minimum of 835 dispensations for July 2014 and a maximum of 5,220 in December 2014. December was the peak and correlated with the increase in reported cases of CHIKV, as observed in Fig. 1A. Fig. 1B, C and 1D show the results of the correlations between the frequency of cases of ZIKV, CHIKV and ZIKV + CHIKV (combined), and the use of antihistaminic drugs in this Colombian population, which in general presented as a positive slope ($p < 0.05$).

We found a significant correlation between the use of antihistamines and the epidemic peaks of arboviroses that have affected Latin America in recent years, which provides important information about the therapeutic behavior of these infections where only

management with analgesics such as acetaminophen is recommended, but as evidenced by these results, physicians frequently handle cutaneous symptomatic manifestations with antihistamines [4].

We observed that along with the increase in CHIKV infections, there was an increased use of antihistamines, which was expected due to the dermatological compromise that occurs, alongside a greater number of symptoms that leads patients to attend the health services where they are prescribed antihistamines by the physicians [3,5,6]. In contrast, with ZIKV there is a significant proportion of asymptomatic cases or with mild symptomatology that does not attend to health providers [2,7].

The epidemiological peak of ZIKV cases did not correlate directly with the increase in the prescription of antihistamines, however there was a considerable growth in the consumption of antihistamines in the 2 months prior to the increase in the cases of ZIKV. This could be due to underreporting, or due to a delay in the correct and timely identification of the infection.

This study is the first to report findings regarding the symptomatic management of the cutaneous manifestations of these arboviruses, which illustrates the lack of information and knowledge available for the management of these emerging diseases. Drugs are being used without adequate recommendations (so far no guidelines have been developed in the country yet) and without having the data that proves their effectiveness and safety. Although antihistamines are relatively safe and low cost drugs, they are also adding to the burden of disease for health systems and are not being adequately measured or monitored, as are not part officially of the data compiled in the surveillance.

It can be concluded that the use of antihistamines increased in relation with the occurrence of reported arbovirus infections, being more pronounced with CHIKV. The data will be useful for decision makers to better manage the use of pharmaceutical resources, seeking a rational, effective and safe use of drugs.

Conflicts of interest

No competing interests were disclosed.

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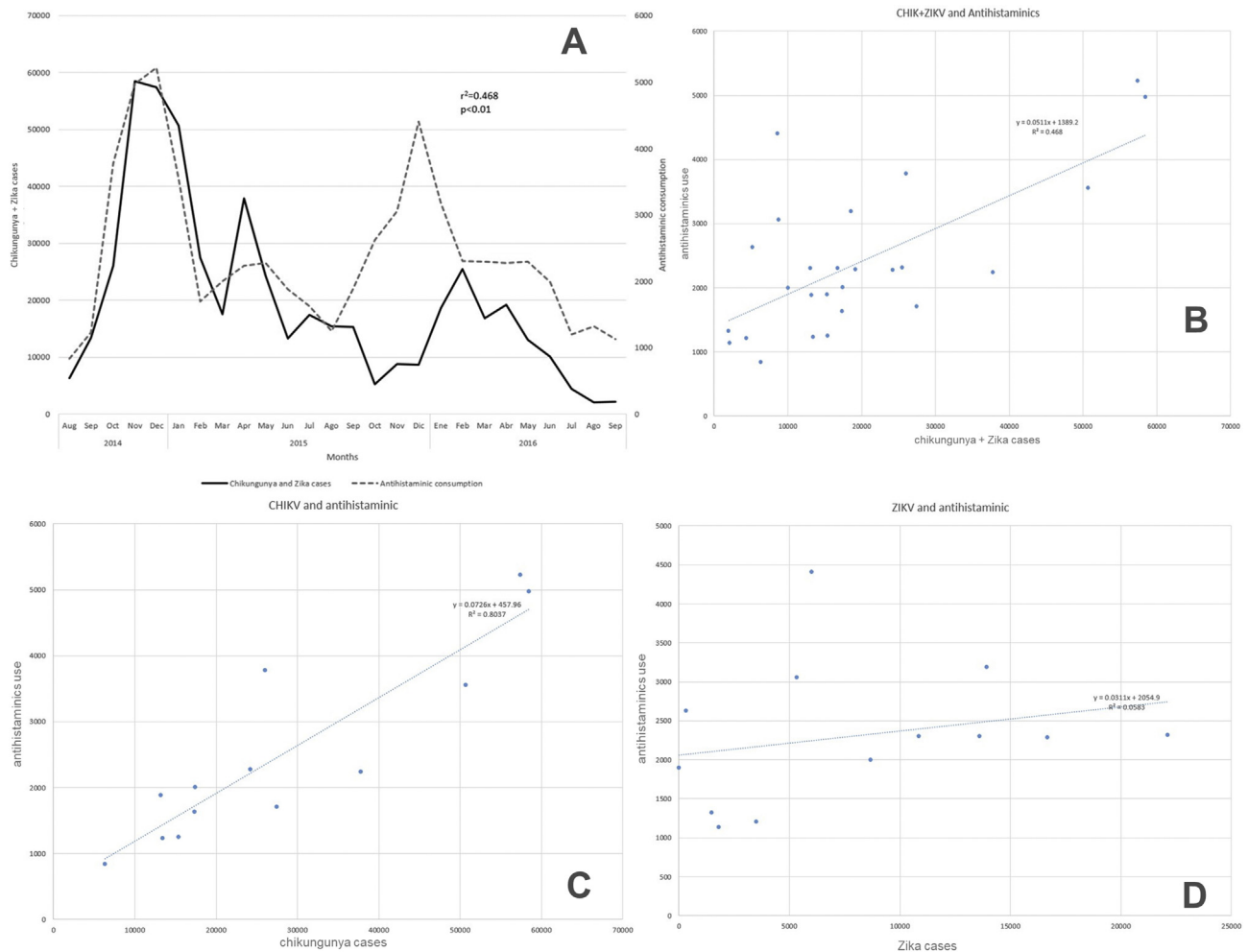


Fig. 1. A. Cases of Chikungunya + Zika virus and prescription of antihistamines in a Colombian population, 2014–2016. B. Correlation diagram between chikungunya + zika cases and use of antihistamines in a Colombian population, 2014–2016. C. Correlation diagram between chikungunya cases and use of antihistamines in a Colombian population, 2014–2016. D. Correlation diagram between Zika cases and use of antihistamines in a Colombian population, 2014–2016. (The data was taken from a database of drug dispensing widely used in pharmacoepidemiological studies of Audifarma, a major provider of drugs in Colombia).

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