Geographical location is associated with raised dengue immunoglobulin G titres for three-year-old children living in Havana, Cuba: A population-based study

Abstract

Background

Identifying risk factors for dengue virus exposure can help public health authorities target their interventions to gain the most potential benefit for the community.

Methods

We used data from an established population-based study of three-year old children living in Havana, Cuba. Data were collected on environmental and developmental exposures. A blood sample was used to measure dengue serological immunoglobulin G (IgG) titres.

Results

Geographical location of residence was a strong risk factor for elevated IgG titres ($p<0.001$). The biggest reduction in risk was observed in individuals who lived in Arroyo Naranjo municipality (odds ratio OR 0.52: 95% confidence intervals CI: 0.51 to 0.52) compared to the reference municipality of Habana del Este.

Conclusions

Geographical location was independently associated with higher dengue IgG levels. This has potential to support public health surveillance programmes in targeting mosquito eradication interventions, as well as increasing understanding of the biological consequences of dengue virus exposure.