FREE
ARVO Annual Meeting Abstract | June 2020

Visual Acuity alterations in Congenital Zika Syndrome (CZS) children from Rio de Janeiro.

Luiz Claudio Portnoi Baran; Diego da Silva Lima; Marcelo Fernandes da Costa; Heydi Segundo Tabares; Leonardo Aparecido da Silva; Sarah Leonardo Dias; Andrea Zin; Dora Fix Ventura

— Author Affiliations & Notes

Luiz Claudio Portnoi Baran
Institute of Psychology, USP, São Paulo, São Paulo, Brazil

Diego da Silva Lima
Institute of Psychology, USP, São Paulo, São Paulo, Brazil

Marcelo Fernandes da Costa
Institute of Psychology, USP, São Paulo, São Paulo, Brazil

Heydi Segundo Tabares
Institute of Psychology, USP, São Paulo, São Paulo, Brazil

Leonardo Aparecido da Silva
Institute of Psychology, USP, São Paulo, São Paulo, Brazil

Sarah Leonardo Dias
Institute of Psychology, USP, São Paulo, São Paulo, Brazil

Andrea Zin
IFF, Fiocruz, Rio de Janeiro, Rio de Janeiro, Brazil

Dora Fix Ventura
Institute of Psychology, USP, São Paulo, São Paulo, Brazil

Footnotes

Commercial Relationships **Luiz Portnoi Baran**, None; **Diego da Silva Lima**, None; **Marcelo Fernandes da Costa**, None; **Heydi Segundo Tabares**, None; **Leonardo Aparecido da Silva**, None; **Sarah Leonardo Dias**, None; **Andrea Zin**, None; **Dora Ventura**, None

Support : FAPESP: Thematic Project 2014/26818-2 (DFV), Regular Project 2016/04538-3 (DFV and MTSB); BPE 2016/22007-5 (MTSB), MSci Fellowships 2016/14793-0 (LB) and 2016/24631-8 (DL). London Sch. Hygiene Tropical Med.(ER1605), DFV is a CNPq 1 A productivity fellow (309409/2015-2)

Investigative Ophthalmology & Visual Science June 2020, Vol.61, 5293. doi:

Abstract

Purpose : To evaluate visual acuity (VA) in CZS children with and without microcephaly in the city of Rio de Janeiro, RJ, Brazil.

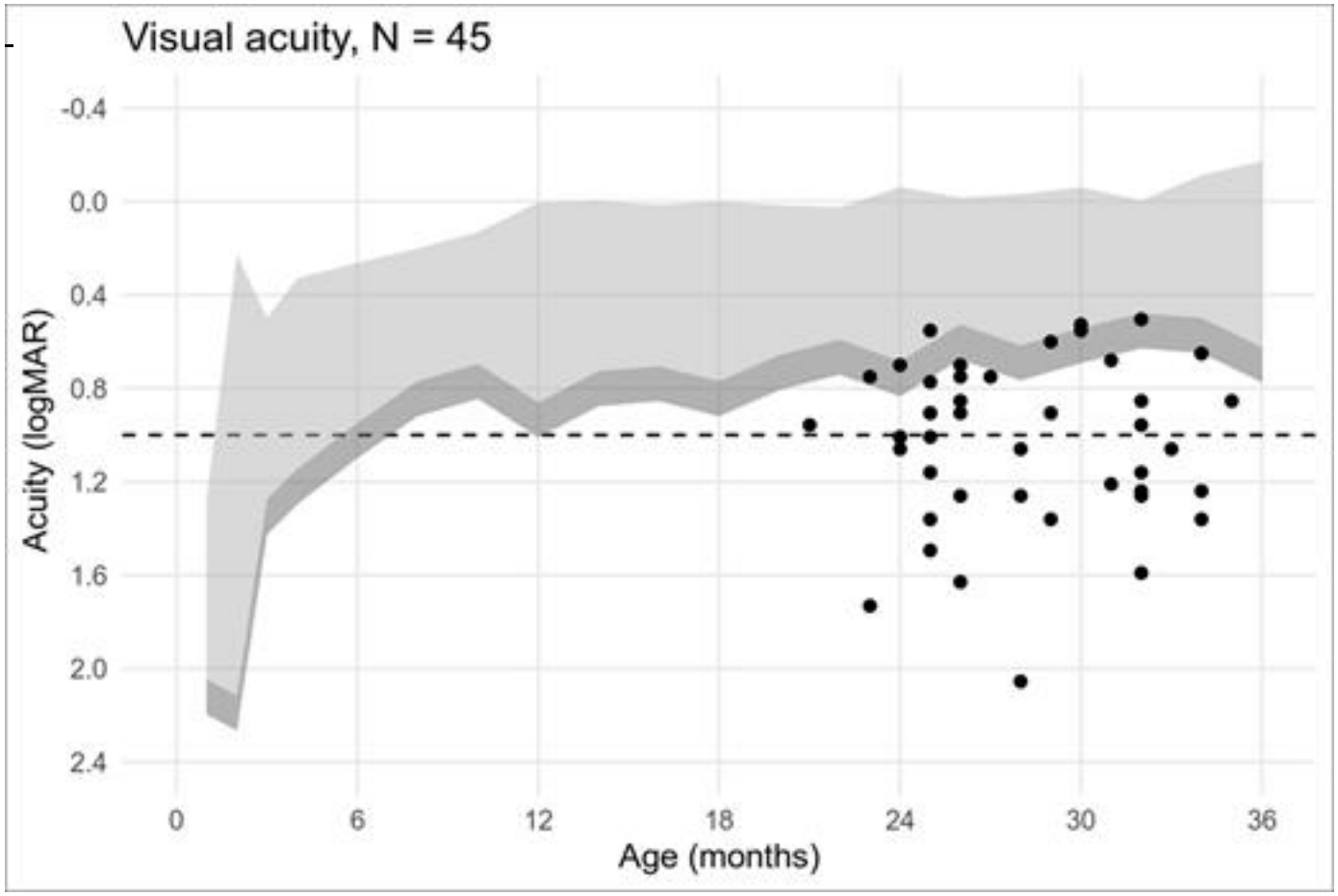
Methods : 45 children with Congenital Zika Syndrome, from Rio de Janeiro, RJ, Brazil, were examined using the Teller Acuity Cards. VA was compared with prior norms and with another cohort from Jundiaí, SP, evaluated by our research team. They had Zika virus-infection confirmed by maternal Real Time Quantitative PCR, serology assay or clinical

evaluation. This research was approved by the Ethics Committees for Human Research of the University of São Paulo's Institute of Psychology (67031216.0.0000.5561) and of the Instituto Fernandes Figueira (IFF) – Fiocruz (526756616000005269) and is in accordance with the Declaration of Helsinki

Results : Most children (41/45 – 91%) had abnormal VA for their age. Out of the total sample of 45 children we had 3 within the normal limits, another 5 within the range of measurement error and 13 between that limit and the legal blindness level (VA 20/200), or a total of 21/45 (47%) with some degree of vision. The remaining children (12/45, 27%) had VA below that value. The only child that did not present microcephaly, had fundoscopic abnormalities. Among the children with microcephaly, 35/44 (78 %) presented visual fundus alterations. A logarithmic regression between VA (LogMAR) and age, calculated to quantify the VA developmental time course showed absence of correlation (R2 = 0.0076; p= 0.087).

Conclusions : There is a strong link between the Congenital Zika Syndrome and VA losses. However, it is difficult to establish if the VA impairment was due to retinal damage, central nervous system damage or a combination of both. It is very relevant to note that about half the sample showed some degree of vision, from normal to the legal blindness limit, while the other half were below that range. This finding reinforces the importance of evaluating VA in CZS children and might have an impact in the management of these children.

This is a 2020 ARVO Annual Meeting abstract.



View Original Download Slide

Figure 1 - Visual acuity as a function of age in children with CZS from the Rio de Janeiro cohort. Dots correspond to individual VAs from each of the 45 children examined. The light grey area is delimited by the higher and lower tolerance limits. The darker range corresponds to possible measurement error (0.5 octave). The dotted line corresponds to 20/200 VA.