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Zikaction Paediatric Registry: Maternal characteristics and clinical, radiological, and follow-up features of children born with Congenital Zika Infection in Brazil

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Background: In 2015, Brazil experienced an unexpected increase in newborns with microcephaly. Subsequently, the association between microcephaly and Congenital Zika Infection (CZI) was confirmed.

Aims: This study, part of the ZIKAction Paediatric Registry, intends to describe clinical, radiological, neurodevelopmental, and laboratory features and follow-up of children with CZI in Bahia, Brazil.

Methods: This observational study had following inclusion criteria: intrauterine exposure to ZIKV, laboratory-confirmed CZI, or meeting the definition of suspected CZI, based on clinical and radiological features.

Results: Of 129 participants, 57% were female. Most mothers (75%) had symptoms suggestive of Zika infection during pregnancy. Median gestational age at delivery was 38 weeks, with 19% delivered preterm. Median birth length and weight were 46cm and 2690g, respectively. Most infants (118, 91.5%) had microcephaly (median head circumference Z-score -3.51, IQR -4.69,-2.73), and 17 (13.2%) have arthrogryposis. During follow-up, 96% and 92% of children had hearing and ophthalmological assessments, with 21% and 57% having abnormalities respectively. Brain image was abnormal in all cases, with ventriculomegaly (70.1%), cerebral parenchyma calcifications (62.1%), and cortical atrophy (48.6%) were main findings. Median age at last follow-up was 5 years; to date, 54 (42%)

participants needed hospitalization, 44 (35%) needed care in the emergency department, and two (1.5%) died.

Conclusion: CZI is an emerging disease shown to have a varied spectrum. Registry children were biased towards those with more severe disease, with several abnormalities and complications observed. Continued long-term follow-up is essential to understand the prognosis and clinical spectrum as these children reach school-age.