

Neurological Disorders and Radiological Findings. How Are They Related in Congenital Zika Syndrome?



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Objective: We aimed to identify distinct CT brain scan findings associated with congenital ZIKV infection and correlate them with neuro-clinical disorders in babies with MCP. Their mothers had exanthematous diseases (ED) compatible with ZIKV infection during their pregnancy.

Background: Although Zika virus (ZIKV) infection causes a broad spectrum of congenital neurological disorders, radiographic correlates of clinical outcome are lacking. During 2015–2016 ZIKV outbreak we faced a high incidence of microcephaly (MCP) in Rio Grande do Norte State (RN), located in northeast of Brazil. Among all regions, the northeast was the most affected by ZIKV.

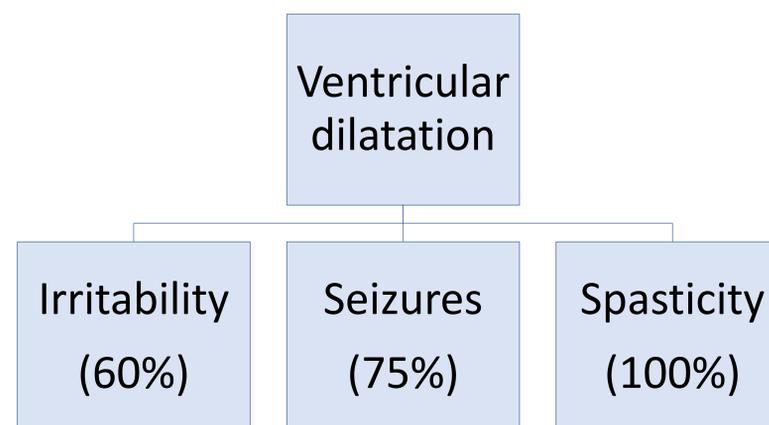
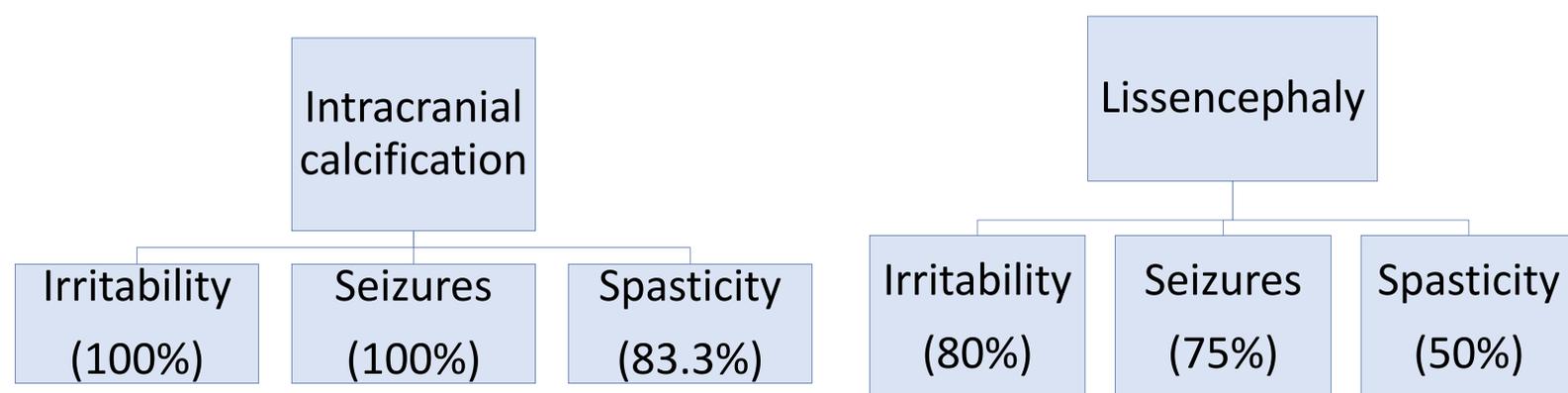
Design/Methods:



Cohort Study

- Medical evaluation was performed on 38 babies with MCP, up to 17 months old, followed at a center for child rehabilitation in RN.
- All subjects underwent CT brain scan.
- Cohort enrollment occurred with subjects born between January 2015 and May 2016.

Results: 38 babies with MCP underwent head CT. 68.5% were male, 31.5% were female. The main clinical presentations were spasticity, irritability and seizure. On CT, all subjects had brain volume reduction. Intracranial calcification (IC) was observed in all of the subjects who presented with irritability and seizures (n = 27) and in 83.3% of subjects with spasticity. Lissencephaly was seen in 80% of subjects with irritability, 75% of subjects with seizures and 50% with spasticity. Ventricular dilatation was seen in 19 subjects, all of whom had spasticity, 60% who presented with irritability and 50% who presented with seizures.



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Conclusions: These new data from a relatively large study, demonstrate that neuroradiographical findings are associated with clinical syndromes in affected neonates. IC was the most prevalent CT scan finding (after reduction in the brain volume). It seems to be the most common radiological finding related to neuro-clinical disorders in ZIKV infection. **This study may be used to better describe the congenital Zika syndrome**, its clinical/radiological outcomes and natural history.