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Study details possible link between Zika and severe joint condition

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Scientists in Brazil studying a possible link between Zika virus infection in the womb and severe joint abnormalities in babies say they should be added to the growing list of conditions to watch for.

In an analysis of seven cases of children with joint deformities, the researchers said the abnormalities - a condition known as arthrogryposis - could be a result of Zika's effect on the developing baby's motor neurons, cells that control the contraction or relaxation of muscles.

In all the cases, the mother also had either documented Zika infection, a Zika-like rash during pregnancy or had given birth to a baby with an abnormally small head.

The Zika outbreak was first detected last year in Brazil, where it has been linked to more than 1,700 cases of microcephaly, a birth defect marked by small head size that can lead to severe developmental problems in babies.

The mosquito-borne virus has moved rapidly through the Americas and has recently begun spreading within the United States, where Aedes aegypti mosquitoes thrive in the warm south.

Because this latest research, published in the British Medical Journal (BMJ) on Tuesday, was an observational study looking back at cases of arthrogryposis, it could not draw definitive conclusions on whether Zika is a direct cause.

But the scientists, based in Recife - the Brazilian city at the center of the Zika epidemic - said the condition might be related to the way Zika affects the brain and the way motor neurons carry signals to an unborn baby's muscles.

If the signals are weak or deficient in some way, this can lead to fixed postures in the womb and consequently to deformities in a baby's joints, said Vanessa van der Linden, a researcher at Recife's Association for Assistance of Disabled Children, who led the study.

"We don't know for sure, but we think there's a problem with the motor neurons ... and that the damage is probably because of the virus," she said in a telephone interview. "We need to study more cases to understand this better."

All the children studied also showed signs of brain calcification, a condition in which calcium builds up in the brain. Scientists think Zika infection destroys brain cells and forms lesions similar to scars on which calcium is deposited.

Scientists have now established a strong link between Zika and microcephaly, but Jimmy Whitworth, a professor of International Public Health at the London School of Hygiene & Tropical Medicine, said these latest findings, alongside other studies, also reveal more of Zika's harmful consequences.

"It is becoming increasingly clear that this virus can cause a wide range of other abnormalities including visual and hearing defects and brain damage in babies with normal sized heads," he said.

The finding that the affected babies all had patterns of peripheral nerve damage, which had caused contracting of the joints, was "consistent with our knowledge that Zika virus is particularly damaging to nervous tissue", he said.

(Reporting by Kate Kelland; Editing by Janet Lawrence)