Surveillance unlikely to detect European changes in birth defect linked to Zika virus

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A study published by *The BMJ* today finds that surveillance systems in Europe could detect increases in microcephaly (babies born with an abnormally small head) due to the Zika virus of a similar magnitude to those observed in Brazil.

However, the smaller increases expected in Europe (due to the Aedes mosquitos not being indigenous in Europe) would be unlikely to be detected.

While Zika virus is an unlikely threat in much of Europe, the researchers call for clear diagnostic criteria for microcephaly to be adopted across Europe.

Zika infection during the first trimester of pregnancy increases the risk of microcephaly. The emerging microcephaly epidemic across South America was confirmed by congenital anomaly registries - highlighting the importance of ongoing, accurate surveillance to evaluate the severity of any new epidemic.

In Europe, congenital anomalies are monitored by a network of registers known as EUROCAT (the European Surveillance of Congenital Anomalies).

A team of researchers, led by Professor Joan Morris from Queen Mary University of London, set out to estimate the prevalence of microcephaly in Europe, find out if the diagnosis of microcephaly is consistent across

Europe, and evaluate whether changes in prevalence would be detected by the EUROCAT system.

24 EUROCAT registries in 15 countries reported 100 cases of microcephaly not associated with a genetic condition among 570,000 births annually.

Sixteen registries responded to a questionnaire of whom seven (44%) used the EUROCAT definition of microcephaly (a reduction in the size of the brain with a skull circumference more than 3 standard deviations (SD) below the mean for sex, age and ethnic origin).

Three registries (19%) used a less stringent 2 SD cut-off, while five (31%) were reliant on the criteria used by individual clinicians. One registry changed criteria between 2003 and 2012.

The researchers found that the reported prevalence of microcephaly across Europe varied considerably, due to the different diagnostic criteria applied and varying levels of ascertainment. Overall prevalence was 1.53 per 10,000 births with registries varying from 0.4 to 4.3 per 10,000.

There was no indication that registries employing a more stringent diagnostic criteria had a lower prevalence compared with those with less stringent criteria. Registries with the 3 SD cut-off reported a prevalence of 1.74 per 10,000 compared with those with the less stringent 2 SD cut-off of 1.21 per 10,000.

The prevalence of microcephaly in Europe would need to increase by over 35% in one year or by over 300% in a single registry to be identified as a statistically significant increase.

In a linked editorial, Dr Russell Kirby at the University of South Florida

says that surveillance is an essential part of the response to Zika and must be improved.

While birth defects registries perform a vital population health function, registers of pregnancies affected by Zika virus with long term follow-up of both mother and child "must be set up urgently to fully understand the natural history of the Zika syndrome and its impact on child growth and development," he concludes.

More information: Prevalence of microcephaly in Europe: population based study, www.bmj.com/content/354/bmj.i4721

Editorial: Population surveillance for microcephaly, www.bmj.com/content/354/bmj.i4815

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