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Congenital malformations in sub-Saharan Africa—warnings of a silent epidemic?

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SARS-CoV-2 has tragically shown the cost of a global pandemic. Only a few years earlier, the outbreak of Zika virus in Brazil and elsewhere in South America caught the international community by surprise. There was no epidemiological surveillance for Zika virus established at the time, since the African-origin virus was previously endemic in Africa and Asia only; clinicians either failed to notify authorities of suspected cases, or reported Zika, dengue, and chikungunya infections in parallel, with limited diagnostic facilities available to differentiate between them.[1] A lack of common understanding about diagnosis and symptoms produced different case definitions and a wide range of case estimates;[2] early estimates of the risk of microcephaly varied across Brazil.[3] These challenges delayed meaningful epidemiological interpretations and probably contributed to an increase in unsafe abortions[4] and pregnancy delays[5] throughout Latin America for fear of the Zika-associated complications.

Intensive global research established beyond doubt the association between maternal Zika virus infection and congenital malformations.[6,7] However, we do not know if this association is unique to the Latin American outbreak and virus lineage, or whether similar symptoms occur elsewhere; and to what extent congenital malformations associated with Zika virus or other infections are present in Asia and Africa.

In sub-Saharan Africa, surveillance data for both congenital malformations and laboratory diagnostics of Zika and related viruses are largely unavailable.[8] Regardless, observed reintroduction of the Latin American outbreak lineage into Angola[9] underscores a pressing question: what are, or will be, the spectrum of clinical manifestations of Zika virus infections in sub- Saharan Africa? Would we be able to detect a signal of Zika virus-induced decreased head circumference or even microcephaly? In Latin America, the standards produced by Estudio Colaborativo Latino Americano de Malformaciones Congenitas were instrumental to detect the signal of microcephaly at an early stage. Data from two African countries (Côte d'Ivoire and Cameroon) show a large variability in head circumference without the presence of Zika virus-induced microcephaly.[10]

In addition, the origin of the Latin American Zika outbreak remains poorly understood and longer-term consequences of various vector-borne diseases, including chikungunya and dengue, on maternal health and child development are only partly understood.[11,12]

To address gaps in knowledge, we need to improve our understanding of the epidemiology and aetiology of congenital malformations and develop better tools for diagnosis, management, and prevention of infection-related causes in sub-Saharan Africa.[11]

We therefore call for greater and more comprehensive action in research, capacity building, and development of a public health approach to congenital abnormalities in sub-Saharan Africa. Recent investments in surveillance and diagnostic capacity as part of the COVID-19 pandemic response could serve as a catalyst for greater attention on arboviruses as well.

The immediate aim should be to provide decision makers with a baseline frequency of congenital abnormalities, which is granular enough to account for regional variability. This baseline includes the simple routine measurement of head circumference at birth, which would allow detection of microcephaly. Of equal importance is strengthening health system responses to children who are born with congenital abnormalities in sub-Saharan Africa to ensure that new knowledge on the public-health burden goes hand in hand with the development of services and interventions to improve health and wellbeing of parents and affected children.

Beyond the immediate benefit of preparedness for potential Zika epidemics in sub-Saharan Africa, such work is of great importance for achieving universal health coverage and improving maternal and child health.

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