Pediatric Oncall Journal

DOI: https://doi.org/10.7199/ped.oncall.2024.13

PEDIATRIC ONCALL
CHILD HEALTH CARE

LETTER TO EDITOR (VIEWERS CHOICE)

ONCHOCERCIASIS ENDEMICITY AND CHILDHOOD EPILEPSY IN RURAL CAMEROON

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KEYWORDS

Onchocerciasis, Epilepsy, Cameroon.

ARTICLE HISTORY

Received 15 January 2024

Accepted 30 January 2024

We read with interest Enyama et al.'s paper describing persons with epilepsy (PWE) in Ntui from the clinical and management perspectives.[1] While their title is emphatic on the endemicity of onchocerciasis in the study site, regrettably little is discussed regarding its association with epilepsy. We recently conducted door-to-door surveys in the same Ntui health district and found that epilepsy prevalence ranged from 3.5-5.1% in the study villages, with epilepsy and onchocerciasis correlating positively.[2] Furthermore, two cohort studies conducted by our group have confirmed the association between these two conditions in the Mbam-Sanaga valley (Cameroon), with a clear temporality and dose-effect: infection with Onchocerca volvulus occurring first, and exposed/infected individuals developing epilepsy later in a parasitic load-dependent fashion.[3,4] Analysis of available evidence on onchocerciasis and epilepsy using the Bradford Hill criteria strongly supports a causal role of onchocerciasis in epilepsy development, in what is now known as "onchocerciasis-associated epilepsy" (OAE).[5]

It is likely that over 90% of epilepsy cases encountered in the Mbam area (Cameroon) are associated with onchocerciasis, with reports of typical phenotypic presentations of OAE like the nodding syndrome and Nakalanga syndrome.[2,6] The findings of Enyama et al.,[1] showing that other risk factors for childhood epilepsy such as prolonged labour (15% of PWE) and resuscitation at birth (7.5%) are rather infrequent in this area, confirm the argument we have put forward for the important role of onchocerciasis for epilepsy prevalence in these areas. The occurrence of epilepsy in another member of the same nuclear family was common (84.1%) in the Enyama et al. study[1], and could be erroneously interpreted as a genetic trait in favour of familial epilepsy. A more plausible explanation would be that several cases occur in the same household due to the proximity of their residence to blackfly breeding sites thereby increasing the risk for all individuals in that household of acquiring O. volvulus infection and potentially developing OAE depending on the intensity of the environmental exposure and consequent microfilarial load. This is supported by the inverse relationship between epilepsy prevalence and distance from the river (blackfly breeding sites) observed in Ntui,[2] and the household clustering of PWE which has been reported in several onchocerciasis-endemic settings.[7,8] In Maridi (South Sudan), villages/households close to blackfly breeding sites were most affected by epilepsy, even among immigrants with no previous personal/ancestral history of epilepsy.[8]

To address the epilepsy problem in onchocerciasis-endemic rural areas, a comprehensive approach integrating components from both epilepsy care and interventions against a predominant risk factor – onchocerciasis is required.[9] Community-based strategies for PWE follow-up and general public sensitization will help to reduce the epilepsy treatment gap and facilitate the social rehabilitation of affected children, including school attendance. Beyond optimising therapeutic coverage during the annual community-directed treatment with ivermectin, alternative strategies for onchocerciasis prevention must be instituted to accelerate elimination prospects; for instance, the "slash and clear" vector control intervention which we recently implemented in Ntui (Mbam), with the aim of breaking the O. volvulus transmission cycle and ultimately reducing OAE incidence in the at-risk communities.[10]

Compliance with Ethical Standards

Funding None

Conflict of Interest None

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