EPILEPSY

Preventing epilepsy in malaria survivors

Nearly one-third of cerebral malaria survivors develop epilepsy or other neurological conditions soon after recovery. A new study has demonstrated that improved seizure control and management of aggressive fever caused by malaria could provide the key to decreasing the risk of developing epilepsy.

“A prospective study was needed to identify potential opportunities for interventions that might prevent epilepsy,” explains lead investigator Gretchen Birbeck. To determine whether the seizures and fevers experienced by patients with malaria represent risk factors for epilepsy in later life, the Blantyre Malaria Project Epilepsy Study monitored 132 Malawian children who were recovering from retinopathy-positive cerebral malaria—along with 264 unaffected children—for 495 days. Individuals with a pre-existing propensity towards seizures were excluded from the cohort.

Of the children who survived cerebral malaria, 10% went on to develop epilepsy within 3 years. Aside from epilepsy, other adverse effects were reported—notably attention-deficit hyperactivity disorder, which was observed in ≈15% of the survivors.

Birbeck’s team hopes to concentrate their future research efforts on the prevention of epilepsy and its sequelae in Africa. The team was motivated by the

plight of patients with epilepsy who must endure the social stigmas that accompany their condition, which prevents some individuals from seeking medical attention for seizure-related injuries.

In resource-limited areas, the drugs typically used to treat seizures—including benzodiazepines and phenobarbital—often cause respiratory suppression, and ventilation support is frequently not accessible. Finding suitable, inexpensive drugs that can be administered within basic clinical environments is, therefore, an important challenge in improving the lives of those affected by epilepsy.

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Necessary technologies, such as EEG, which is needed to monitor undetected seizures, are scarce. As Birbeck explains, “before malaria retinopathy was described in this resource-limited setting, it was impossible to know whether malaria was causing the fever or if the parasitemia was incidental.” The Blantyre Malaria Project at Queen Elizabeth Central Hospital in Malawi provided sophisticated medical infrastructure, enabling the identification of malaria-specific retinopathy, allowing, says Birbeck, a much improved study.

The Blantyre Malaria Project Epilepsy Study team making home-based visits to ascertain outcomes in cerebral malaria survivors. Photograph by Michael J. Potchen.

Birbeck and her team’s next priority will be to plan clinical trials to find out whether better control of fever and seizures can decrease the risk of epilepsy. The challenge now is to discover a means of intervening in a way that is practical within basic settings. “The benefits of being able to institute some additional treatments, beyond just clearing the parasite, to reduce long-term neurological devastation, is definitely worth pursuing,” concludes Birbeck.

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