Reviewer's report

Title: The incidence, etiology and outcome of acute seizures in children admitted to a rural Kenyan district hospital

Version: 1 Date: 30 October 2007

Reviewer: Gretchen L Birbeck

Reviewer's report:

General
To Authors:

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. Providing outcomes data and risk factor assessment for the combined ("lumped") group of all children presenting with acute seizures really doesn’t provide much information to clinicians or epidemiologists when the lumped group of acute seizures includes such diverse conditions as cerebral malaria, febrile seizures and meningitis. Clearly defining etiological sub-groups and then providing risk factors for and outcomes among those clearly defined sub-groups would be much more interesting and valuable data.

2. Data presented represents the incidence of seizures presenting for care in the region, not the incidence of acute seizures in the region. Although the study team has a defined patient base, it would be erroneous to assume that all (or even most) children with acute, fever-associated seizures present for care. The fact that this study found incidence rates for acute seizure highest in populations living near the hospital further supports this reality. Therefore, all statements re: the incidence rates reported in the paper need to reflect that it only provides incident data for those children presenting to a hospital for care. Although buried in the discussion the authors acknowledge that their estimate is an “absolute minimum”, the limitations of the data in this regard aren’t evident on a casual review of the abstract or paper.

3. Was any standardized data collection instrument used for this work, or was data ascertained as part of routine care and then extraction of data elements from the usual medical record was conducted later? If a standardized intake form or assessment was completed, please provide that form for review. If no such standardized data was routinely collected prospectively as part of the study, can one assume that anything “not documented” was assumed to be absent (ex. family history of epilepsy)? Providing the “not documented” rate for data elements included in the analysis is needed.

4. Precisely how was “malaria” as a primary diagnosis defined in this work? How
do children with “malaria as the primary diagnosis” differ from children with a positive malaria slide? How was this clinical distinction made? This is particularly problematic since without funduscopic confirmation of malarial retinopathy, the diagnosis of “clinical malaria” invariably includes a number of children with incidental parasitemia plus another etiology for seizure. The authors conclude that the most common cause of acute seizures in this study was malaria, but no clear operational definition of malaria is provided. Since asymptomatic parasitemia is common in this region, this is an important issue.

5. Table 1 needs to include data on parasitemia, particularly since malaria is reported to be the commonest cause of acute seizures in this study.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Was HIV status assessed at all? What role, if any, did HIV-related illness play in the cases and comparison patients in this work?

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Discretionary Revisions (which the author can choose to ignore)

“Fewer children with seizures were severely wasted”
What do the authors attribute this to? Less severe malaria among the wasted? Bias in who parents bring to hospital?

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests