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: Cheng-Hsien Lu

Reviewer’s report:

General

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

Ms: BMC Pediatrics-5964493231619611

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

This is a prospective study of 4921 pediatric patients, aged 0-13 years, admitted to Kilifi District Hospital over a period of 2 years from December 2004 to November 2006 and who were resident in a defined area in coastal Kenya. According to the study design, three separate sets of analyses were conducted for this study. First, baseline characteristics of patients (N=900) with seizure were compared to those of patients who had no seizure (N=4021); Second, risk factors predictive of fatality among those patients who had seizure (N=900, Numbers of fatal cases=28), and third, risk factors predictive of neurological deficits among those patients who survived from acute symptomatic seizure (N=872, Numbers of patients with neurological deficits=11). Major criticisms are as follows:

1) Materials and Methods section:

1. How many cases receive CSF study? Is CSF study performed in every case or in only cases with acute symptomatic seizure?

2. Lines 1-3, on Page 6, did every case receive the complete studies which you mention in the manuscript? How many amount of blood samples are collected in every case, especially in sick neonate?

3. Lines 10-13, second paragraph in the Methods section on Page 6, therapeutic guideline for malaria and bacterial meningitis in your study should be described in detail, including duration and dosage of antimicrobial agents.

4. Line 8, first paragraph of the section on Page 7, you mentioned, “We then compared the clinical and laboratory features and the diagnoses in patients with and without seizures to describe the clinical risk factors for seizures and examined the risk factors for poor outcome”. Please define “poor outcome” in your study by using scientific scale, and make a comparison according to the definition.
5. Lines 1-2 from the bottom, last paragraph in the Method section on Page 7, in my opinion, only p value<0.05 at univariate were included in the stepwise logistic regression model.

2) Result section:

1. The result section should be described more detailed. There are many data missing, including the timing of seizure (immediate after hospitalization or seizure after hospitalization), and the duration of seizure.

2. Please describe the etiologies of death among seizure patients in text. Were all of them caused by the complications of seizure or the severity of infection? In my opinion, seizure is one of the clinical features in the critically ill patients after infection rather than the major cause of mortality or morbidity.

3. Please add the mean duration of hospitalization in those patients with or without seizure.

4. Page 10 and 11, in the Result section, the exact numbers of causative pathogens of bacteremia and bacterial meningitis should be described in detail in the text or in the footnote of Table 3. By the way, “viridians streptococci” is a group of streptococci, and should not be italic.

5. Last paragraph of the Result section on Page 12, authors should use scientific scale to evaluate the therapeutic outcome, especially in the neonatal group.

3) Discussion section

1. Discussion should be rewritten according to the result of your study.

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

'I declare that I have no competing interests'