Reviewer's report

Title: Severity of acute hepatitis and its outcome in patients with dengue fever in a tertiary care hospital Karachi, Pakistan (South Asia):

Version: 3 Date: 5 January 2010

Reviewer: Dorothea Nitsch

Reviewer's report:

The authors have answered most of my questions to satisfaction. There are a few queries with regards to the display of data which need to be addressed.

Major Compulsory Revisions

-The authors should mention under study design at start that they conducted a cohort study of all dengue patients admitted to their hospital who were uniformly tested on day of admission according to a standardised in hospital protocol. Adding this at the end does not give enough emphasis to this very important feature of this study.

-They should mention how many patients of all dengue admissions were excluded due to pre-existing liver problems. If that was 50% then the cohort that was analysed is not representative of all dengue patients but only those who did not have pre-existing liver disease. I presume that alcohol consumption and Hepatitis C is fairly low, but I don't know enough about the local setting, the authors need to clarify this for the reader.

-Some analyses excluded those with no liver problems, i.e. those with no ALT elevations. I don't think this exclusion is necessary, the authors could compare those without ALT increase to those with mild/moderate and those with severe ALT elevations.

-All the mortality analyses are biased by the fact that length of follow-up differed between groups. Hence, authors have used Cox-regression for mortality analyses, which is correct. However, figure 1, and table 1 are misleading as proportions do just take totals at the end which is not allowing for the difference in length of follow-up.

In line with the analytic strategy of the authors they should also show their crude data accordingly: Figure 1 should be a Kaplan-Meier plot of survival (or mortality, whatever the authors prefer) over time (days of stay), with numbers at risk in each group displayed below the graph. Ideally one would see 3 lines - those without ALT elevations, those with mild/moderate and those with severe increases. Here a log-rank test should be used.

-Table 1 must have some errors in terms of copying the numbers from the output. I don't understand how the percentages and the numbers work out- the column heading for mortality indicates that % is in the bracket and numbers of people is given in front, but it is the other way round in the table. Also, how are 3 out of 81
people with severe hepatitis and dengue fever only 0.6%? Or why are 9 out of 22 people (bottom row) only having a mortality of 10.8%? This is possible, if mortality is an incidence rate (so number over person-time), but then it would be necessary to relabel the column accordingly, and also give confidence intervals. P-values in this table should be consistently displayed. ‘<0.00’ is incorrect.

- Figure 2 should add a measure of uncertainty to the bars, perhaps a box-plot would be better.

- Table 2 should add total numbers and all p-values should use Fisher's exact tests to be on the safe side.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I declare that I have no competing interests.