Reviewer's report

**Title:** Case Control Study to Identify Risk Factors for Acute Hepatitis C virus Infection in Egypt

**Version:** 2  **Date:** 23 March 2012

**Reviewer:** patrizia lorenzini

Optimizer's report:

Major compulsory revision

1. I presume that the questionnaire administrated to cases and controls that investigated behaviors and activities in the 6 months prior contained several information supposed to be relevant for the HCV infection. In the paragraph “Statistical analysis” the crude OR was calculated for “variables that might influence the occurrence of acute HCV”, but it would be preferable to list in the paragraph all factors considered in the univariate analysis.

2. In the paragraph “Statistical analysis” it is not clear which variables were present in the initial model used in the removal stepwise procedure. If needed specify also how these factors were selected. Other important information which should be indicated is the significance level used for removal or for addition in the stepwise procedure.

3. Univariate analysis shown in table 2 (but also table 3 and table 4) do not cover all the variables described in the text, so it is unclear which other variables were analyzed in each of 3 different groups of exposure.

4. Why the multivariable analysis did not adjust for socio-demographical factors described in table 1 (except for matching variables)? The education, the occupation status and the history of chronic illness seem to have some categories significantly associated with an higher risk of HCV infection.

5. In the abstract the authors present only OR from univariate analysis, but the results from multivariable analysis should not be ignored. If it were possible, the interval confidence for OR should be indicated. Further in the last sentence “36% of cases were attributable to hospital admission” there is an incorrect conclusion, because 36% of cases have experienced an hospital admission but there is no certainty that it was the cause of HCV infection. Moreover the percentage is incorrect (from table 2 42%).

Minor Essential Revisions

1. In the last part of results “No significant risk” should be replaced with “no significant difference in the risk”.

2. In table 1 it is not possible to determine precisely what the OR shown for age represents, so the risk associated with what unit increase in age (e.g. per 1 year
increase)? Further there is a problem with the lower limit of 95% confidence interval as it has a negative value. In row 9 the percentage symbol with male variable is not necessary.

3. In table 1 for the variable age groups it would be more helpful if the OR of different age categories would be calculated with respect to a unique reference category, to have comparable risks. The same modification is necessary for the other variables in the table.

4. Add p-values to all tables.

5. In the paragraph “Univariate analysis” receiving dental care in an outpatient setting was defined as associated but not statistically significant. In table 2 the factor seems to be significant with a border line significance. On the contrary when the authors say “Among women, the risk of HCV infection was higher for females who visited a family planning clinic…”, they refer to a risk factor which is really not significant and it should be said. To avoid confusion it would be useful to show p-value in each table.

Further in the second paragraph of “univariate analysis” labor for females is associated with the risk of HCV infection among risk factors belonging to in-patients hospital exposure group, but it is not significantly associated.

6. Please provide p-value and if possible statistical test used for the comparisons "no significant difference regarding median number of hospital admissions and median length of stay at hospital"

7. In the paragraph “multivariate analysis for HCV factors” five risk factors are identified from multivariable analysis, but there are six factors shown in table 5.

8. In the 7th paragraph of discussion, in the sentence “the proportion of patients reporting injection…” it would be more correct to specify “the proportion of patients among cases reporting injection…”

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.