Reviewer's report

**Title:** Incidence and effects of Varicella Zoster Virus Infection on academic activities of medical undergraduates - a Five Year Follow-Up Study from Sri Lanka

**Version:** 1  **Date:** 26 February 2010

**Reviewer:** I-Ching Sam

**Reviewer's report:**

This is a retrospective study showing a high level of VZV susceptibility amongst Sri Lankan medical students at entry into medical school. About 30% of them developed chickenpox during medical school, leading to disruptions in academic activities. The authors recommend vaccination at school entry.

**GENERAL POINTS**

1. Is the question posed by the authors well defined? Yes
2. Are the methods appropriate and well described? OK, but major limitation of retrospective data
3. Are the data sound? There are inconsistencies in some of the data presented, e.g. number followed up is given as 153 and 157 in different places.
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? There are errors, e.g. some of the % given per VZV-infected patient use 43 as a denominator but 47 in a different place; errors in Fig 1.
5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes, apart from the last sentence in the discussion.
6. Are limitations of the work clearly stated? No.
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes
8. Do the title and abstract accurately convey what has been found? Yes, apart from some incorrect calculated %.
9. Is the writing acceptable? Yes, just some minor spelling and grammatical errors.

**SPECIFIC POINTS**

Minor essential revisions

1. **ABSTRACT** - "Varicella" misspelt
2. **METHODS:**
   VZV antibody test - not specified (i.e. which assay/kit)
3. RESULTS:
p8: Please explain what "clinical appointments" and "professorial appointments" are.

4. p8: "Four (9.3%) medical undergraduates reported that it affected their probability of obtaining a class at the examination."
The meaning of this sentence is unclear.

5. References:
No. 1 is incomplete

Major compulsory revisions

6. ABSTRACT

47/153=30.7% not 29.9%
377/47=8.02 working days lost, not 8.8
1927/47=41 hrs lost, not 44.8
(although it is apparent later on in the results that this "incorrect" figures were obtained using questionnaire answers given by only 43 students; this should be clarified in the abstract)

METHODS:

7. Data collected retrospectively only after final exams - i.e. 5.5 yrs later, highly likely inaccurate recall of no. of lectures/practicals/etc missed. Could a more accurate picture have been obtained from e.g. attendance records?

RESULTS:

8. No. followed up said to be 157 but in Fig 1 and abstract, the figure given is 153. This has led to the incorrect percentage figures given in the abstract.

9. The total person years of exposure were 8,663. Should this figure be person months? Only 157 were followed up for 5.5 years, giving a maximum possible total of 863.5 person years.

10. p7: "Of them, 38 (88.4%) were residing outside their homes (in a university hostel or a boarding place) when they acquired the disease. Five (11.6%) medical undergraduates acquired the infection while they were at home."
Does this refer to development of symptomatic disease or actually site of initial exposure, taking into account the incubation period? Later on, in the discussion (p9), it says: "...at the time of the diagnosis 88% of the medical undergraduates were residing at hostels." This suggests that the authors are referring to development of symptoms, rather than place of exposure.

11. p7/8: "...the other had a severe secondary bacterial infection."
But this patient was not hospitalised. What was the nature of this "severe" infection?

12. p7: "Only two (4.6%) were hospitalized during the illness, and both had VZV pneumonia."

More detail should have been given on the 3 patients (7%) with severe disease, as 7% represents a notable proportion. Adding the clinical impact would have strengthened the authors' support for immunisation. Eg. did these severe patients miss more academic activities?

13. p8: "All but one stayed at the hostel during the total duration of the illness. Nine (20.9%) went home on the second or the third day of diagnosis and 27 (62.8%) went home on the same day of diagnosis."

These 2 sentences do not agree with each other. If "all but 1 stayed at the hostel during the total duration of illness", how could 36 have gone home before the 3rd day of diagnosis?

14. The 6 who reported "no effect on academic activities" - did they continue to attend all classes despite their illness?

DISCUSSION

15. p9: "...went home on the same day of the diagnosis (27 – 62.8%)"

This 62.8% refers to 27/43 (total with VZV), but the denominator should not include the 5 who developed the disease at home.

16. p11: "...the authors bekeive (sic) that a cost effective analysis based on the data reported in this study may show that immunization is far more effective than wasting resources on those medical undergraduates who get the disease."

This assumption should not be made based on the study findings, as there was no information on the resources "wasted" on the students (e.g. clinic visits, hospital inpatient stay for the 2 admitted students, drug treatment, travel home for convalescence, etc).

17. The authors also did not point out the risk to pregnant/immunocompromised patients from medical students with chickenpox. For example, what proportion of VZV cases occurred during the students' clinical years, when they have contact with patients?

18. Fig 1: Should be "Followed up for 5.5 years" not 0.5 years

The figure given for "susceptible for VZV infection" is incorrect (153-47=106)

19. Fig 2: Cumulative proportion with VZV at the end of 5.5 years is >0.3, but is given at 29.9% in the results

**Level of interest:** An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published

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