Reviewer's report

Title: Epidemiologic Study of Aseptic Meningitis in Daejeon, Korea (1987 through 2003)

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Reviewer: Remi Charrel

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Lee KY et al.

This paper describes the epidemiology of aseptic meningitis in children in Daejon, a large city of South Korea, over a 16 year period from 1987 to 2003. I applaud for such a large study covering a long period of time; this kind of studies is, in my opinion, of major interest to attempt to elucidate the factors driving enterovirus circulation emergence and reemergence over the world; however, virology documentation even partial is critical to be able to interpret clinical and epidemiological data. No virology data are presented in this paper, and the link between aseptic meningitis and enteroviruses is stated without solid evidence. It considerably weakens the paper, and I recommend to correct this point before publication can be considered.

To fit in a virology journal, the authors must provide virology data, or they should consider another type of scientific journal. With this type of data, this paper would more suited to an internal medicine, infectious disease, pediatric or epidemiology journal.

Title
The title should mention that this study focused on children

Abstract

Aseptic meningitis has always been a common disease in children, but before the era of antibiotics it was considered as benign by comparison with purulent meningitis which outcome was frequently fatal. The association between enteroviruses and aseptic meningitis should be tempered since other causes are possible; indeed, before WWII in the US, the two major etiologic agents involved in aseptic meningitis were herpesviruses and lymphocytic choriomeningitis virus. It has been recently shown that in certain region of Italy, the major cause of summer aseptic meningitis was not enteroviruses but Toscana virus, an arthropod-borne virus.

Methods
The authors must decide what kind of data they want to present: either they provide documentation for these cases, and they can discuss the etiology of aseptic meningitis cases, or they don’t and thus they focus their results and discussion on aseptic meningitis and they don’t suggest that most of these cases were due to enteroviruses since no evidence support this point.

They state that in Korea, aseptic meningitis are exclusively due to enteroviruses but they don’t quote references to support this opinion; moreover, they report that some of the cases are due to mumps virus. The 1997 and 2002 epidemics were studied at the virological level with the help of Korean NIH: 6/33 and 5/29 aseptic meningitis cases which were investigated were due to Echovirus 30 and
13, respectively. But there is no information provided about the etiology of the 27/33 and 24/29 cases: were they caused by enteroviruses belonging to other genotypes or to other viruses not related to enteroviruses. This point is of major importance in order to claim that most aseptic meningitis cases are due to enteroviruses.

Discussion
Line 5: viral meningitis should be replaced by aseptic meningitis since there is no virological documentation/ The articles quoted in reference are clinical studies and I doubt they mention virus investigations.
The point about the increasing occurrence of aseptic meningitis in children in south Korea is valid and these data support it strongly, but unsubstantiated conclusions on the nature of the agents involved in these cases should be more carefully addressed unless formal identification can be provided as evidence.
Page 6-8 discussion should be compacted to be more “to the point”.
Page 8: data about the virological nature of aseptic meningitis from 1990 to 2002 should be presented in the introduction section to support the fact that most aseptic meningitis cases might be due to enteroviruses.
Percentage data should be provided if available; for instance, in 1990 KNIH received xx CSFs for virus studies in aseptic meningitis, yy/xx were positive for enteroviruses and zz/yy were due to echovirus 30 or 13 or 6…This data should be compared with the identification given above for the 1997 and 2002 epidemics. A detailed presentation of these data should be summarized in a table to support the fact that most aseptic meningitis are due to enteroviruses. This point is of critical importance for this paper and to interpret the clinical data.

Figures and tables
Figures 1-4 must be merged into a 4-panel figure

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 limited interest

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
no competing interests