Reviewer’s report

Title: Salmonella enterica bacteraemia: A multi-national population-based cohort study.

Version: 1 Date: 24 February 2010

Reviewer: Nuria Torner

Reviewer’s report:

Non-typhoidal salmonella is fully recognized as common cause of gastroenteritis which can result in large outbreaks and high disease burden in the community. Although rare, in non-impaired immunity individuals, bacteraemia and severe complications related to extraintestinal focal infections after haematogenous spread such as meningitis may occur.

This is a well written and extensive data report on S. enterica bacteraemia on a multi-national collaborative setting. Nevertheless, there are some questions of the study that should be encountered.

- Major compulsory Revisions

Background

The author states that “all cases of disease occurring among residents of a defined population” are included. This statement needs to be ascertained by providing more information on the availability to health care facilities in all the regions involved in the study. If there are differences in the coverage to hospital based medical care this can result in an underestimation of the incidence where there is no gratuity for example. Are the health systems in all regions involved fully comparable?

It is stated that the aim of the study was to evaluate temporal and regional differences in the occurrence of Salmonella enterica bacteremia, yet they should clarify the statistical significance of these differences.

Methods

Was it through a systematic process or through a protocol implemented specifically for the study that the microbiological processing was carried out?

Results

Page 8: Providing % values for cases in different regions and serotypes might be more informative.

Incidence:

Adjusted incidence rates were markedly different among the regions and by salmonella group. Shown on Figure 1...

I would suggest setting up these results in a Table showing values and statistical significance values and hence deleting Figure 1.
Figure 2 could include a correlation for trend line showing correlation index to assess increasing trend for non-typhoidal salmonella

Clinical and microbiological information:
Bacteremia was defined as either hospital onset (>2 days after admission) or community onset (in community or within 2 days of hospital admission) yet on page 9 2nd paragraph the 18 hospital onset cases were isolated during the first 5 days of admission … this should be clarified, because only from the 3rd day on after admission the cases can be classified according to the methodological definition as hospital onset.

Results on the 252 cases with added details written out in the text are tedious to go through, a table including this information as well as susceptibility data would be more clear and concise.

Discussion

Page 12
At the end of the first paragraph the author state that excess population risk in males for non-typhoidal salmonella bacteremia may be due to agricultural or diet exposure in males. Could this statement be supported by other studies or is it just a perception of the author. What does agricultural or diet exposure relate to? And why should this be different for men and women?

Further on in the same paragraph: Typhoidal salmonella in younger adults with no differentiation in gender is considered a reflection of a greater rate of foreign travel to endemic areas and in younger immigrant population.

Has the variable immigration been considered and analyzed in the study? If so it would be convenient to include this data, if not, why wasn’t it included? The rate of immigrant population is a relevant factor to take into account due to the increasing flow especially in high income countries such as those included in the study.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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'