Reviewer's report

Title: Do patients with recurrent reported episodes of campylobacteriosis differ from those with a single disease event?

Version: 1 Date: 1 October 2010

Reviewer: Jennifer Weisent

Reviewer's report:

To the authors: Thank you for your work on recurrent episodes of campylobacteriosis. There is a lack of knowledge on this topic and I have yet to come across a comparable study.

Major Compulsory Revisions

Note: The references included below are not compulsory, but may help clarify issues.

1. Discussion (Paragraph 1) The recurrence data captures what looks to be excess risk. However, previous studies estimate an overall risk of approximately 1%. Could the recurrence risk be merely an indication of more complete reporting after an initial exposure, as opposed to a true increase in the population risk?


2. Discussion (Paragraph 2) The statement that “The only documented evidence of acquired immunity…is with people professionally exposed…” is not entirely true. Miller et al. suggest that exposure over time leads to increased immunity (in the nation of Scotland).


3. Discussion (Paragraph 2) The statement that “…data did not show evidence of
…species-specific immunity, since people with recurrent episodes were as likely to have been infected twice by the same Campylobacter species” is an overstatement. There is a significant body of molecular evidence to show that within-species genomic differences and subtypes suggest antigenic variability. Furthermore, the bacteria has a highly plastic genome, making ‘species-specific immunity’ very difficult to pin down without subtyping performed.

Along these lines, the partial immunity demonstrated in children from underdeveloped nations is hypothesized to be due, not only to higher levels of exposure and contamination, but to simultaneous exposure to a multitude of Campylobacter strains.

Minor Essential Revisions

1. Because this study is making a direct statement about immunity, basic details of Campylobacter immunity should be included in both the background and then related to the discussion/conclusion statement (such as):

a. Infection confers short term immunity of unknown duration by stimulating antibodies in approximately five to seven days of infection.


b. The antibody peak occurs within 2-4 weeks, declines over several months (detected in serum and mucosal secretions)

c. Example of other pertinent facts about immunity as they relate to your article:
An immune host may render the bacteria nonpathogenic.

d. Partial immunity is thought to be a primary reason why children in developing countries excrete the organism for shorter duration than those in developed countries, and is thought to explain why travelers are disproportionately at higher risk.


e. Also, it is hypothesized that acquired immunity may result in declining rates in some regions.


2. Background (Paragraph2)

“One of the potential areas of exploring possible protective effect of immunity is through studying recurrence.” Please provide a sentence or two to clarify why.
3. Case Data/Population Data: Is urbanicity defined as a function of population density? Please include the Statistics Canada definition of these important characteristics.

4. Methods/Date of Onset.
   The proxy estimation technique should be discussed in terms of any potential bias. For example, could the high recurrence 'spike' between month 3 to 6 be due to chronic cases or be captured due to discrepancies in the estimated dates? The exact duration of shedding should be referenced as well, to help clarify why the first three months were excluded.

5. Results (Paragraph 3) Are the C. coli cases equally distributed across the three regions of interest? Specifically, it would be very interesting to note if C. coli cases were all found in rural regions.

6. Discussion (Paragraph 4) This paragraph needs to be expanded. Any underlying disease (inclusive of hypogammaglobulinemia and corticosteroids use) which compromises the host immune system may render that individual more susceptible to campylobacteriosis and its potential recurrence. Specifically, include AIDS, chronic intestinal illnesses (IBS, IBS, celiac disease), rheumatism. Susceptible subgroups also include people who may have altered defense mechanisms, with subsequently increased disease acquisition, as a result of antibiotic and antacid use.

7. For example: A follow-up study on the recurrent cases might reveal the importance of these patient characteristics. I.e. What if the recurrent cases all have underlying conditions or use antibiotics and antacids? This idea might add insight to your final discussion or conclusion paragraph. Or it could be discussed that the lack of information on these characteristics is an important weakness of surveillance data.

Discretionary Revisions/"Minor issues not for publication"

1. Background (Paragraph 2)
   Please change wording …their protective role is ‘misunderstood’. Consider ‘unclear’ or poorly understood.

2. Results (Paragraph 2): My manuscript copy mislabels Figures 1 and 2 in the text.

3. Discussion (Paragraph 6) “Likewise, the impossibility…of the risk of recurrent episodes through underestimating the number of cases of recurrent episodes.” This sentence is difficult to follow. Please rephrase if possible.

4. Discussion (Paragraph 9) Consider rephrasing “the impossibility of adjusting for”. Perhaps ‘This is due to data limitations which render stratum-specific adjustments impossible, or ‘inability to adjust for stratum-specific baseline results’. Or mention that population at risk data are unavailable.
Level of interest: An article of importance in its field

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.