Reviewer's report

Title: Molecular and Epidemiologic Analysis of County-Wide Outbreak Caused by Salmonella enterica subsp. enterica serovar Enteritidis Traced to a Bakery

Version: 1 Date: 26 February 2004

Reviewer: Frank Rodgers

Reviewer's report:

COMMENTS:

1. English usage and grammar should be improved throughout the manuscript.
2. Page 2: When the authors use "incidences" here, I think they mean the "number of new cases".
3. There is no consistency in the usage of the organism name Salmonella enterica subsp. enterica serovar Enteritidis. Capitals and italics are interchanged liberally. Furthermore, after Salmonella enterica subsp. enterica serovar Enteritidis has been defined as such, then the abbreviated form S. Enteritidis should be used thereafter throughout the manuscript.
4. Figure 2 adds no value and should be deleted.
5. My copy of figure 3 (the PFGE) was very unclear. Could a sharper figure not be used? Actually I think figure 3 should be re-thought out. A gel with 25 identical lanes comprising 22 outbreak isolates, a single bread isolate, a blood isolate and a stool isolate (all identical) seems unnecessary.
6. Pages 5-7 and Table 1: Was phage typing or any other molecular techniques undertaken to identify these isolates further. Although the PFGE and antibiogram profiles would appear to confirm the tight clustering of these isolates, further typing procedures might assist in the characterization and sub-clustering of these pathogens. This is particularly pertinent given the data in figure 1. The vast majority of cases of disease occurred during this period in individuals who had not consumed the bread in question. How many of the isolates from these were sub-typed? Was subsequent food contamination by infected individuals within families or other groupings a factor in these cases? Indeed, it is particularly interesting to note that in the apparent absence of consumption of the contaminated vehicle, the levels of acute gastroenteritis prior to the outbreak ran at around 10 or fewer per day between Feb. 23 and the first day of the outbreak (Feb. 28), but on Feb 29, the number of cases of acute gastroenteritis without consumption of the bread rose to 38 people. Again, in the absence of consumption of the proposed vehicle these numbers remain higher than "normal" for some time after. The authors make no comment on these observations. How many isolates were made from each of the groupings across figure 1; how many of the group "cases without consumption of bread" were serotyped; how many were subjected to PFGE and antibiogram analyses. This information is not present in the M&M. Were bakery personnel and food handlers examined?
7. Page 5: It is not clear on how many individuals and by what methods stool and blood cultures were performed?
8. Table 1: these data are presented without comment. If significant then appropriate discussion should be made otherwise it should be deleted.
9. Discussion, page 10: There have been a number of reports, including a number from our group, which suggests that PFGE, when applied to S. Enteritidis, has failed to distinguish epidemiologically unrelated isolates. Indeed, S. Enteritidis, phage type 1 and phage type 4 often present with identical PFGE patterns.
10. This is a well circumscribed outbreak with little new to commend it as different from many other such outbreaks; therefore, if accepted it should be reduced in length to present only the essential and new information.
1. Is the question posed by the authors new and well defined?

The description of this well defined outbreak poses no new questions and raises no new issues in terms of infectious disease or outbreak control. The issues of follow-up and control were not addressed.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

Only well established epidemiologic and microbiologic methodology, well described and published elsewhere, was used in this investigation; therefore, in a similar outbreak situation, the methods could be easily replicated.

3. Are the data sound and well controlled?

It was not clear from which groups the isolates came and how many from each of the three groups (shown in Fig. 1) were fully typed and analyzed. It is always problematic getting material for isolation in outbreak situation; however, further breads samples, egg wash, pork topping, specimens from handlers in the bakery and family contacts would have been helpful.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

Yes.

5. Are the discussion and conclusions well balanced and adequately supported by the data?

PFGE is well recognized for typing outbreak salmonellae. Given the problems associated with PFGE and S. Enteritidis other additional assays to discriminate isolates would have been useful. The discussion could be reduced in length without loss.

6. Do the title and abstract accurately convey what has been found?

Yes.

7. Is the writing acceptable?

Requires editing for correct English usage and shortening to reduce verbosity.