Reviewer’s report

Title: Pertussis detection in children with cough of any duration

Version: 1 Date: 03 May 2019

Reviewer: Walter Dehority

Reviewer's report:

This is an interesting study describing the clinical and laboratory characteristics of Pertussis stratified by various clinical variables. Given the resurgence of this disease, this is a potentially welcome contribution to the field. I would however address the following issues.

Abstract

Line 52: 'venipuncture' not 'venepuncture'

Line 56: comma not a semi-colon after 'children'

Line 58: semi-colon or period after children

Line 58: '…had laboratory evidence of pertussis.'

Line 61: period after '…at all.'

Line 62: 'respectively, sensitive to amoxicillin by…'

Line 65: might cut out 'population' and just state that it is no longer optimal to recognize this disease.

Line 67: '…of pertussis diagnosis, which will have a beneficial impact on public health.'

Line 68: '…infection; however, local sensitivities are required to inform clinical practice.'

Background

Line 77: '…by age and the presence of…'

Line 85: What is a class B reportable disease in China? Many readers may not know this, so perhaps a brief explanation (one sentence, in parentheses)
Line 89: '…diagnosed by physicians based on typical clinical…'

Lines 90-91: '…tests for pertussis (e.g. bacterial culture, serology test and molecular methods.)'

Line 92: '…to the clinical and laboratory methods used for diagnosis, suggesting an…'

Line 96: do you mean an 'unspecified' cough duration (not unselected)?

Line 104: 'hypothesize'

Methods

Line 117: might re-phrase as '…the absence of findings suggestive of an alternative etiology other than Pertussis for a cough (e.g. digital clubbing…)'  

It is possible that children with alternative etiologies for a chronic cough (e.g. cystic fibrosis, immunodeficiencies) might also get pertussis: so I would list this as a limitation of the study in the discussion section

---Would also state why subjects were required to be under 14 years of age (otherwise, if no compelling reason, would list this as a study limitation in the discussion section)

Line 139: '…and parainfluenza virus…'

---Would mention that viral testing from sputum may provide different yields than testing from nasopharyngeal isolates, which is frequently done clinically in many settings

Line 152: 'For the PCR, a real-time PCR method…'

Line 167: 'Because there were no breakpoints for B. pertussis recommended…'

Lines 170-173: Would clarify what the role of the H. influenzae testing was: why were these breakpoints used if they are from a different organism? Would also consider down-playing the statement that the classifications were 'unquestionable'

Line 184: do you mean milliliter? (not mini-liter)?

Line 189: '…when an anti-PT IgG was…'

---Do we know that a child would not have an anti-PT IgG >62.5 if the immunization was more than one year prior? Could immunization produce this high of a level? If so, this could mean mis-classification of vaccinated children as cases of Pertussis. Would address this issue, either as a limitation of the study or via a reference(s) demonstrating that this titer cut-off point one year from vaccination is appropriate to diagnose infection.
Results

Line 225: from 1 month to 11 years; 210 (67.3%) were male…'

Line 227: Would keep the same number of significant digits throughout (here you list 99% but above list 67.3%)

Line 232: Would try not to begin a sentence with a number: Could spell out two-hundred and fifty-four

Line 236: '…to the acute group…'

Line 238: '…compared to the acute group…'

Line 240: 'The difference in clinical…'

Line 248: '…differences.'

Line 248: 'There was not significant difference…'

Line 260: '…did not show significant differences.'

Line 260: 'There was no significant difference…'

Line 271: '…no significant difference…'

Line 278: Again, need to state why H. influenza is being used as a comparator, and provide references

Line 282: "…in in-vitro testing.'

Discussion

Line 304: Period after 'pertussis infection.'

Line 305: Do you mean they were present in confirmed and unconfirmed cases?

Line 319: Might want to provide the WHO pertussis definition here so that the reader is aware of it.

Is the DTaP or the DTP used in China? If the DTP, may need to reference this in the paper, as this produces better immunity than the DTaP

Lines 341-344: This statement seems to undercut your use of a titre>62.5 in those children not immunized in the last year as proof of actual infection and not vaccination. Would clarify this.
Line 347: '…are not specific…'

Line 347: Period after 'infection.' And start a new sentence

Line 353: What was the rate found in the other Chinese study? How does it compare to yours?

Line 368: Do you have data on how co-morbidities alter Pertussis presentation? If not, I don't know if you can make this claim

Line 371: '…in a population…'

Line 372: '…comprehensive studies of children…'

Line 374: '…and will impact public health.'

Line 378: '…that this alternative drug…'

Table 1

I might put percentages here either next to the numbers or in place of them to give the reader better context

Would put a legend under all tables listing abbreviations (e.g. PRN, PT, NPS, IQR, PCR)

Table 2

Might say 'with or without laboratory-confirmed pertussis' Same for table 3 title

Were the whoops more common in infants? Classically they are, but do you have this data stratified by age?

Table 5

Will need to address why H. influenzae is used as a comparator here

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests
I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.