

Abstract to review

Maternal pertussis vaccination is effective in preventing pertussis in infants: a case-control study in England and Wales, 2012- 2013

Background:

Pertussis outbreaks have occurred in several countries worldwide, despite high vaccine coverage. Since 2011, there has been a national pertussis outbreak in England and Wales (E&W) with increased numbers of infant deaths. From October 2012, pregnant women were offered one dose of acellular pertussis vaccine between 28-38 weeks' gestation, as a temporary outbreak response. The aim of this was to protect infants through trans-placental antibody transfer, prior to primary immunisations starting at eight weeks of age. As this intervention had not been used previously, our objective was to estimate the vaccine effectiveness (VE) of maternal vaccination in preventing laboratory-confirmed pertussis infection in infants.

Methods:

We used a case-control study design. Cases were included if they were aged less than 8 weeks at onset, resident in E&W, notified between 2012-2013 and culture/PCR confirmed by the national reference laboratory. Family doctors of each case in E&W were requested to identify two controls; these were healthy infants born consecutively after the case and registered in the same practice. Family doctors provided information on maternal pertussis vaccination for both cases and controls. We calculated VE as 1-OR (odds ratio for association between maternal vaccination and pertussis infection) and adjusted for sex, geographical region and birth period using logistic regression.

Results:

Data were available for 58 cases and 55 controls. Mothers of 10(17%) cases and 39(71%) controls received pertussis vaccine. The unadjusted VE was 91% (95% confidence interval: 77-97%). VE adjusted for sex, geographical region and birth period was 93% (81-97%).

Conclusions:

Maternal pertussis vaccination is effective in preventing pertussis infection in infants aged under 8 weeks during a national outbreak and should be considered in other countries experiencing pertussis outbreaks.

Solution

This abstract was accepted at the ESCAIDE conference in 2014, in one of the parallel oral presentations session. The public health relevance is high: Authors described how an innovative intervention (i.e., vaccination of pregnant women) could protect babies from pertussis during the course of an outbreak that led to infant deaths. A re-review of the abstract however identify minor opportunities for improvement, mostly in the introduction. If the authors had written a shorter introduction, they might have been able to present more data or to elaborate more on the implications. That would have underlined more their contribution, while the introduction is more about things that were known before. These issues did not alter the quality and did not prevent acceptance. But it is useful to know that even good abstracts accepted at international conference can benefit from a bit of editorial improvement. When you work on your own abstract, you may want to consider that each additional pair of eyes will bring improvements that might get you closer to the goal of being accepted.

Checking the abstract for the 20 tips provides the following results:

- ✓ Informative title
- ✗ The introduction is excessively long: The authors could have summarized the rationale in one sentence and the objectives in another. A shorter version could be:
 - *Since October 2012, following a pertussis outbreak that led to deaths among infants, England and Wales offered one dose of acellular pertussis vaccine between 28-38 weeks' gestation to induce protection through trans-placental antibody transfer, an intervention not used previously. We estimated vaccine effectiveness (VE) of maternal vaccination against pertussis among infants.*
- ✓ Sufficient description of methods (No labelling)
- ✓ Sufficient display of data in the results (Albeit short)
- ✓ Appropriate conclusions
- ✓ Recommendations / next steps based on conclusions
- ✓ Compliance with technical reference
- ✓ Self-contained abstract: The abstract does stand-alone.
- ✓ Good rounding up
- ✓ Simple writing style
- ✓ Specific language
- ✓ Good logical / time sequence
- ✗ Verbosity/ repetitions:
 - *'The aim of this'* could have been cut to link the vaccination directly with its expected benefit.
 - The laboratory confirmation of pertussis is repeated between the introduction and the methods.
 - The repetition of 'Family doctors' could have been avoided and the same subject could have been used for the two actions.
- ✗ There are a few weak verbs. Replacement can save words and allow a more direct style.
 - *There has been a national pertussis outbreak in England and Wales -> A national pertussis outbreak affected England and Wales.*
 - *We used a case-control study design -> We compared cases defined as ... with controls selected...*
 - *The odds ratio was (The verb could have been omitted, with just a provision of the ORs after the proportion of cases and controls exposed)*
- ✓ Appropriate use of words
- ✓ Correct structure
- ✗ Passive voice:
 - The authors could have considered mentioning who offered vaccination to pregnant women. That would have shown ownership of the decision from the public health authorities.
- ✓ Appropriate use of tenses
- ✓ Appropriate word count
- ✓ Correct spelling