Author's response to reviews

Title: Seroprevalence of Immunoglobulin G antibodies against pertussis toxin among asymptomatic medical students in the west of Iran

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Author's response to reviews: see over
Reply to Reviewers:

First Reviewer:

The question posed by the authors is well defined.

The methods are appropriate but randomization should be explained more clearly.

Reply: All registration numbers of students were listed and by applying table of random numbers, the subjects were selected.

The data are sound.

The manuscript adheres to the relevant standards for reporting and data deposition.

The discussion and conclusions are well balanced and adequately supported by the data.

However first sentence of the discussion is not understandable. It should be rewritten.

Reply: It was revised as follows:

In a study performed on students with chronic cough at the University of California in 1992, 34 cases (26%) of infection with pertussis were found.

Limitations of the work are not clearly stated.

Reply: The limitations were added at the end of "Discussion" as follows:

In this study, only medical students were included. Therefore, the obtained results may not be extended to adolescents and adults living in the studied region. Also, we did not follow these students in order to document the clinical and serologic consequences of administration of a booster dose of DTaP. Although all studied individuals were students
at their first year of medical school passing their basic courses, we were not able to establish any documented contact with B. Pertussis.

The authors clearly acknowledge any work upon which they are building.

The title and abstract accurately convey what has been found.

I think the writing is acceptable.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being Published

**Reply:** English edition was done.

**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'.
Second Reviewer:

Pertussis toxin IgG antibodies have been measured by a commercial kit in 163 medical students. Most likely medical students are highly selected, not representing young adults in the area studied.

Reply: This limitation was added at the end of "Discussion" as follows:

In this study, only medical students were included. Therefore, the obtained results may not be extended to adolescents and adults living in the studied region.

There is virtually no background information about the whole cell pertussis vaccine used in Iran. Who produced it, what potency assays were used, did it pass the mouse protection test, how many bacterial units did it contain per given dose?

Reply: The following sentences were added to the "Methods":

All participants had received diphtheria-tetanus-whole-cell pertussis vaccine (DTwP) manufactured by Razi Vaccine & Serum Research Institute, Tehran, Iran. Each dose of a 0.5 ml of Razi-DTwP vaccine contained 15 Lf diphtheria toxoid, 10 Lf tetanus toxoid, 16 IU inactivated Bordetella pertussis bacterial cells, 0.3 to 0.6 mg aluminum phosphate (metal ion) and 0.01% merthiolate according to the instruction sheet provided by the manufacturer.

How were vaccinations in childhood including boosters verified, written records or parental recall?

Reply: The related sentence in the "Methods" section was revised as follows:

The data related to age, gender and vaccination status (according to their medical records) were obtained during a primary interview.

How is the current epidemiology of pertussis in this part of Iran?
Reply: The incidence of pertussis in Iran was inserted to the "Introductio" section as follows:

A total number of 314 suspicious cases of pertussis, according to specimens collected by Dacron swabs from nasopharynx, were reported in Iran in 2007. Of this, 23 cases were diagnosed by pertussis using the laboratory method of Real Time polymerase chain reaction (PCR). Based on this report, the incidence of pertussis in Iran has decreased from 40% in 100,000 population in 1978 to 0.5% in 100,000 population in 2007. Can these youngsters have been exposed to the causative organism?

Reply: The following sentence for this limitation was added to the "Discussion": Although all studied individuals were students at the first year of medical school passing their basic courses, we were not able to establish any documented contact with B. Pertussis.

On what basis was the limit of 24 units/ml chosen?

Reply: This cut-off point was picked according to the instructions of manufacturer of the applie kits; i.e. "IBL Immuno-Biological Laboratories, Hamburg, Germany".

Is the method (kit) standardised by international reference sera? Does the kit include positive and negative controls?

Reply: The kits used for this study are international kits which were imported from Germany.

Level of interest: An article of insufficient interest to warrant publication in a scientific/medical journal

Quality of written English: Not suitable for publication unless extensively edited.

Reply: English edition was done.
**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