Reviewer's report

Title: Monitoring vaccine and non-vaccine HPV type prevalence in the post-vaccination era in women living in the Basilicata region, Italy

Version: 0 Date: 14 Mar 2017

Reviewer: Vladimir Gilca

Reviewer's report:

INFD-D-16-01694
- This study presents data on the HPV types prevalence a few years after a vaccination program and a catch-up was implemented.
- The manuscript might be improved by the use of a more academic approach and less use of some speculative words and generalities.
- The authors state that the « … study aimed to describe the effect of the introduction of qHPV vaccination program on vaccine and non-vaccine HPV types prevalence…". Due to the cross-sectional design of this study (only one time-point measurement) it seems more appropriate to use "… to assess vaccine and non-vaccine HPV prevalence 5-7 years post-vaccination program implementation in vaccinated and unvaccinated women…".
- Taking into consideration the low participation rate of women 18-24 y.o and the unknowns regarding the proportion of 25-50 y.o attending cervical cancer screening, the use of the wording "population-based study" is questionable.
- It is unclear what is the number of vaccinated/unvaccinated women by age group. What was the study power to detect statistically significant differences among study groups (i.e. prevalence of different HPV genotypes)?
- In results and discussion sections some comparisons and statements are made like "lower prevalence" or "higher prevalence" but it is unclear if these differences were statistically significant. According to the data presented in the Figure 1 the only statistically significant difference is for HPV 16 prevalence in vaccinated and unvaccinated women.
- Results and Discussion sections might be shortened by concentrating on the main study results and avoiding insignificant ones (i.e. HPV 51 in vaccinated vs unvaccinated (1.4% vs. 1.0%, p=0.66) or HPV39 (1.7% vs 1.7%, p=1.0).
- The sections "Non-vaccine type prevalence" and "Type-replacement" might be reduced to 2-3 sentences plus the tables.
- Some minor suggestions: line 99 delete or explain "… is also well organized…"; line 188 delete "significant".
- In the abstract the "efficient HPV vaccine registry" might be changed for "regional HPV vaccine registry"; in the abstract conclusions the word "large" might be deleted.
- The attendance of a university outside of Matera seems relatively weak for explaining the low participation rates in 18-24 y.o.
- Line 363: what exactly is the meaning of "non-prevalent HPV types"?
- Line 390: with a vaccine uptake of 59% I would suggest avoiding "well-implemented vaccination".
- Authors may want to discuss the possibility of a herd immunity in younger age groups. Such a protection would diminish the capacity to detect differences between vaccinated and unvaccinated young women.
- Line 404: I would suggest avoiding "with a complete vaccination schedule" and to keep "are vaccinated before sexual debut". Authors clearly mention they did not assess the effectiveness of incomplete vaccination schedule.
- Line 457: "very important" might be changed for "important".
- Line 459: to avoid a potential misunderstanding the wording "has a direct effect on more oncogenic..." might be changed for "...vaccine which protects against additional five oncogenic HPV types"
- Lines 463-465 should be revised. The wording "significantly reduces" should be avoided because the study did not measure the reduction of the HPV prevalence. Avoid also qualifications like "good preliminary…". A more precise terminology is preferable.
- Conclusions would profit if based exclusively on study results and less on what will happen in the future.

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/](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