Author’s response to reviews

Title: Antibiotic prophylaxis habits in oral implant surgery among dentists in Italy: a crosssectional survey.

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Author’s response to reviews:

Dear Editor,

We have considered carefully the point made by the reviewers. Both reviewers have made important comments on issues that may influence the validity/conclusion of the study (in bold). The answers to their comments are listed point-by-point in the following text. We think we were able to fully address these points, which may allow this revised version to be published in BMC Oral Health.

Reviewer reports:
(Reviewer 1): This study investigates the use of antibiotic prophylaxis among general dentists in conjunction with dental implant placements. The study is well carried out and the manuscript is generally well-written and organized but the result comes as no surprise. However, as long as there is an overprescribing and misuse of antibiotics in conjunction with oral implant surgery, studies like this should be published.

A few comments:

The aim was to assess antibiotic prescribing habits of dentists in conjunction with routine oral implant surgery in healthy patients.

How is "routine oral implant surgery" defined? How was it defined in the questionnaire? According to the result, some dentists gave antibiotics only in conjunction with bone grafting, preoperative implant site-infection, immediate implant placement and multiple implant insertion. Shouldn't these dentists belong to the group "No never"?
“Routine oral implant surgery” was not specifically defined in the questionnaire as a determined technique and the first question was stated generically (Do you prescribe antibiotics before, after or during a dental implant placement?). For these reason, we have decided to avoid the word routine referring to oral implant surgery in the objectives section from the abstract (Page2, line 31) and the background (Page 4, line 90).
As this first question did not exclude any kind of surgical technique, dentists who stated that they
prescribed antibiotics only sometimes could specify afterwards the conditions and belonged to the group “Yes, sometimes”. They should not belong to the group "No never" because they definitely prescribed antibiotics in some circumstances.

How is "healthy patients" defined? How was it defined in the questionnaire? According to the result, some dentists gave antibiotics only to patients with cardiopathy or to medically compromised patients. Shouldn't these dentists belong to the group "No never"?

Participants were clearly asked to answer the questionnaire concerning an oral implant surgery performed to literally “healthy patients”. “Healthy patients” was not strictly defined so we let the participants appraise this issue on their own.

We consider that the participants who answered “No, never” to the first question (Do you prescribe antibiotics before, after or during a dental implant placement?) do not prescribe antibiotics at all, regardless the patient’s status or other factors.

However, after responding “yes, sometimes” to the first question of the questionnaire, dentists were asked to answer a multi-option question to describe the situations. One of the options was “cardiopathy requiring prophylactic antibiotics” because we considered it a frequently presented situation in the private clinic and dentists are frequently expected to prescribe an antibiotic prophylaxis to prevent bacterial endocarditis. Only one dentist stated to prescribe prophylactic antibiotics only in this case. The rest chose this option in combination with other situations.

Dentists who did not find any suitable option among the given ones could choose the option “Other”. After that, they could write a free text to explain the situations when they do prescribe prophylactic antibiotics. Some dentists wrote the option “Medically compromised patients” spontaneously following this procedure and therefore it was included in the Results section.

Consequently, the purpose of the option “Yes, sometimes” was to give the participants the possibility of describing any situation that they think they should prescribe antibiotics. We found important to give the participants the option to describe this situations even if the reason were any disease of the patient. On the other hand, if dentists answered “Yes, always” we considered that dentists prescribed antibiotics also to patients who do not have any known disease and therefore are considered healthy patients.

Line 79: "…different countries [8-12]."
Shouldn't it be [13-18]?
The reference numbers have been changed (Page 4, line 86).

Line 179: "…2 g of oral Amoxicillin/Clavulanic acid 1 hour prior to surgery (n=60, 41,9%)."
Please check these data, they do not seem to match the data in Table 3.
The data has been corrected (Page 8, line 188)

Line 183: "More than the half (55.4%) of the dentists who advise patients to start the antibiotics treatment post-operatively, prescribe oral 875/125 mg Amoxicillin/Clavulanic acid twice a day for a period varying from five to six days"
Please check these data, they do not seem to match the data in Table 4.
The data have been checked and corrected (Page 8, line 190)

According to the manuscript, dental practitioners in Italy routinely perform oral implant surgery. There are more than 61,000 dentists in Italy. The questionnaire was sent to 400 dentist and the response rate
was quite low (40%). No non-response analysis was done. According to the authors the study sample was considered representative of the target population. Please explain how you came to this conclusion. We did not try to sample all dentists’ population placing oral implants in Italy. Our target population was all dentists members of the IAO (n=400).

We made an estimation for the target population, and this target population is part of all dentists currently placing oral implants in Italy. We tried to clarify this issue in the Limitations section (Page 10, line 234) But also in the Generalizability section (Page 12, line 281).

Line:237: "Other surveys have found that in the UK approximately 72% of a total of 109 dentists prescribed antibiotics for all oral implant surgeries14 and 74% in Sweden (n=133).[15]"
Please rewrite the sentence.
The sentence has been rewritten (Page 11, line 263).

Conclusions: The last four sentences of the conclusion should be deleted. The last 4 sentences have been deleted (Page 12, line 294).

(Reviewer 2): BMC Oral Health
Manuscript number OHEA-D-19-00492
The manuscript concerns the important subject, antibiotic prophylaxis habits in implant surgery, and high-light some of the serious problems within this field of antibiotic utilization in dentistry. Therefore the results are important.

Major comments
Background/Aim
The secondary aim is stated to be "to assess the nature and amount (mg) of antibiotics prescriptions in order to evaluate whether any consensus has been reached and if the current recommendations are compiled". Later in the manuscript it is stated that there are no recommendations in Italy for this. Please clarify this.
We refer to the recommendations made by the last published articles/evidence. The sentence has been changed to avoid misunderstandings (Page 4, line 92).
A new section has been added in the Results describing the results relating to this issue (Page 5, line 211).

Methods
The questionnaire is not properly described. Furthermore the process of translating and validating is not described. One cannot refer to the original questionnaire and that it was validated. After translation a new validation needs to be performed in order to be able to state that the questionnaire is validated.
The original questionnaire has been uploaded as a PDF file. The sentence stating that the questionnaire was validated has been changed in the Abstract (line 35). Also the first sentence of the section Study Design has been adapted to avoid the word “validated”. (Page 5, line 100).

Proper translation procedure contains the following: One language expert translates from English to Italian. Another translator translates back from Italian to English to check that the phrasing of the questions has not been changed.
We firstly adjusted the questionnaire to circumstances in Italy and afterwards it was translated. A specialized translation company performed the translation from English to Italian. Afterwards the translation was evaluated by an experienced Italian oral implantologist to check comprehensibility and logical order.
If the participants are specialists (if so which) or merely general dentist should be clearly stated and the ratio between the groups. If only general dentists are included as participants, the reason for this should be given. Is the therapy not performed by specialists in Italy? Type of training for implant surgery would be interesting to know. Is it part of basic training in dentistry?

Among the 400 members of the IAO, 20% are actually dentists specialized in oral surgery. Consequently, we have changed the title of the article and now we are referring to the participants as dentists and not general dentists.

The training for implant surgery in Italy is part of the basic training as well as part of the postgraduate in oral surgery. However, we did not asked the participants their personal postgraduate training in oral implant surgery.

We have added this information to the background (Page 3, line 77)

The comment regarding bias is not relevant, especially since the response rate was so low. Other types of biases should be discussed in the discussion section or mentioned in the result section.

Further types of bias have been commented on the Limitations section of the Discussion regarding the lack of validation for our questionnaire and the fact that the translated questionnaire was not translated back to English.

This information has been added to the Limitations section of the Discussion (Page 10, line 239).

Results

Generally there are a lot of figures (3) and tables (6). The authors should consider to reduce the number.

Tables 5, table 6, Figure 1 and Figure 2 have been deleted. Their information has been briefly described in the Results section.

Figure 3 is complicated/busy because of the large number of compounds. It can be more comprehensive if the compounds are group according to type of substance such as:
- Macrolides (Clarithromycin+Macrolide+Azithromycin+Rovamycine+Erithromycin)
- Likosamider (Clindamycin)
- Cephalosporins (Cephalosporin+Cefexime)
- Fluoroquinolones (Levofloxacin+Ciprofloxacin)
- Penicillin
- No antibiotic (No antibiotic+Ranitidine, which is not an antibiotic compound)
- Tetracycline (Doxycycline)
- Clavulanic acid

We have changed the graphic (Figure 3) according to your advice.

Table 1: Difficult to follow. What means with Graduation in Italy 100% never, 100% sometimes, 96.1% Always, etc, etc.

Table 1 has been improved to avoid misunderstanding. “Graduation in Italy 100% never” means that 100% of the respondents who stated that they do not prescribe antibiotics at all (never) had been graduated in Italy. “Graduation in Italy 100% sometimes” means that 100% of the respondents who stated that they prescribe sometimes antibiotics had been graduated in Italy. “Graduation in Italy 96.1% always” means that 96.1% of the respondents who stated that they always prescribe antibiotics had been graduated in Italy.

Regarding Table 2-6. Although important results, an effort should be made to try to display, or illustrate, the prescription in a way that may give a better overview and with less tables.

Tables 5 and 6 have been deleted. Their information has been briefly described in the Results section.
Discussion
Under "Limitations" the authors should not take lightly on the low response rate and the fact that this could be a bias. A speculation, or some sort of analyse, regarding who the drop-outs are should be added. Are the non-responders not interested? Or over-prescribing individuals? The responders cannot be considered to be representative of the target population because of the low response rate. It can be speculated that this is the case, but not "considered".
A speculation has been added over the drop-outs and the potential risk of bias relating to the low response-rate has been mentioned in the Limitations section of the Discussion (Page 10, line 230)
The consideration about the target population has been changed (Page 10, line 234).

Minor comments
Background
Page 3, line 66-67, please rephrase the sentence "Italy was the ninth with more systemic consumption….". As phrased it doesn't make sense.
The original sentence is the following (Page 3, line 70): “Italy was the ninth country with more systemic consumption of antimicrobials in the EU community (primary care sector) in 2017.[21]”

Page 3, line 69-70, "Several studies found that general practitioners…". Do not use "several" when only one reference is given.
The sentence has been changed (Page 3, line 73).

The aim at the end of the introduction could preferably be rephrased from main aim and secondary aim to primary and secondary.
The sentence has been rephrased (Page 4, line 89).

In the aim it is stated that the study was "to determine whether antibiotics prophylaxis is a common treatment in Italy among general dentists". Why weren't specialists included? It would have been interesting to compare general dentists with specialists.
The target population includes dentists and probably also dentists specialized in oral surgery. However no comparison were made because the questionnaire did not addressed this issue and no information was collected about the specialization of the respondents.

Results
The large gender differences should be commented. Is this due to drop-out or is the ratio between men and women this skewed?
These differences may be related to the low rate female members of the IAO. This has been mentioned in the Limitations section of the Discussion (Page 10, line 229).

Page 8, line 200: Remove "_" from macrolide.
The sentence has been changed to properly describe the results (Page 8, line 208).

Discussion
Remove headings from discussion.
We are reporting the study following the Strengthening the Reporting of Observational studies in Epidemiology (STROBE) guidelines. So we would like to keep the headings.

Page 9, line 205 and 206: "...did not complied with their recommendations." Grammatically incorrect, but also, here the authors refer to some recommendations. Previously in the manuscript it was stated that there are no guidelines in Italy.
The sentence has been corrected (Page 9, line 223).
We are referring to the recommendations made by las published evidence (review and meta-analysis).
We have described this recommendations in the introduction (Page 4, line 84), but also in the Discussion section (Page 10, line 253). In addition, we have added a new sub-section to the results describing the compliance of participants with these recommendations (Page 8, line 17).

Under "Generalizability", here is a result mentioned that is not to be found in the result section. This section has been rewritten (Page 12, line 279).

Under "Conclusion". "....and they are not adhering to the new science-based specifications." What is meant with science-based specification? Add reference or clarify in text.
We are referring again to the recommendations made by las published evidence. We have changed the sentence to avoid misunderstanding and references have been added (Page 12, line 292).