Author’s response to reviews

Title: Antimicrobial Susceptibility Patterns of Bacteria Isolated From Patients With Ear Discharge in Jimma Town, Southwest, Ethiopia

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Author’s response to reviews:

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Subject: A Point-by-Point Response to the Reviewers’ comments

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Dear Saeedia Khwaja

Editor in chief

BMC Ear, Nose and Throat Disorders

Thank you for sending us the relevant comments of the reviewers and the editorial office of Journal of BMC Ear, Nose and Throat Disorders, who have carefully commented and evaluated our manuscript, entitled “Antimicrobial Susceptibility Patterns of Bacteria Isolated from Draining Otitis Media Patients in Jimma Town, Southwest, Ethiopia”.

As you see we have gone a considerable way to meet their reservations and to follow their advice. We hope that you will find our response/and revision acceptable and we look forward to your final decision.
Yours sincerely,

Zeleke M

Reviewers’ comments:

Reviewer: 1
Comment: No Specific Comment from reviewer 1
Response ~ We would like to thank this reviewer for giving us his precious time to review our manuscript and recommending our work for publication.

Reviewer: 2
Comment: How were patients selected or recruited? Discussion states >60% were children. Are these health services community services/pediatric services/hospitals?
Response~ Thank you very much for your constructive comment. The health facilities we conducted the study were public hospitals and health centers, giving services for both adults and children and we used consecutive sampling technique where we approached every patient coming with draining otitis media and asked for informed consent. We recruited only the patients with draining otitis media who gave us their consent to participate on the study (parents’/care takers’ consent was used in case of children).

Comment: Did the patients have isolated discharging ear or any associated symptoms or signs to help determine the diagnosis of AOM vs COM?
Response~ The criteria we used to classify otitis media as AOM or COM was just the presence of ear discharge (unilateral or bilateral) and the duration of illness(less than 14 days as AOM and 14 or more days as COM). The patients may or may not have any other associated symptom or sign of illness.
Comment: Line 42: Again what criteria did they use for patient selection? OM could be AOM/OME/CSOM. Different microbial findings would be expected for each of these? Did they separate the acute and the chronic? This needs describing in the methods.

Response~ Thank you very much for the comment. We have reflected this in the methods part and also in the point by point response above. We didn’t include patients with OME since our entry point was ear discharge.

Comment: Line 69: Grammar: ‘The data were checked”

Response ~ Comment accepted and addressed accordingly.

Comment: Table 1: Again COM - What is the definition used for this?

Response~ The definition we used for COM is a patient presenting with ear discharge for 14 or more days.

Comment: Line 106: AOM and COM differ in treatment regime. Can the results be separated out more? E.g are you more likely to isolate an organism in the acute phase in patients that have had no prior treatment?

Response~ Thank you very much for the comment. Yes to more elaborate Out of the 173 patients attended, 103 patients were priorly using antibiotics and the remaining 70 patients were not using antibiotics before the case is identified. From the 103 patients (priorly using antibiotics), 27 patients (26.2%) were AOM and the remaining 76 (73.8%) were COM. From the 70 patients (priorly not using antibiotics), 46 (65.7%) were AOM and the remaining 24 (34.3%) were COM. The result showed that patients who were using antibiotics before were found to be COM. So the likely isolated organisms in acute phases have had no prior use of antibiotics before coming to the health institute.

Reviewer 3:

Comment: Correct all spelling and grammatical errors

Response~ Thank you very much for the constrictive comment. We have tried to correct accordingly.
Comment: Clarify what your p-values relate to in table 2.

Response~ We have included the p value to show that the different variables (like age, residence, previous health care visit and treatment history had statistically significant association with COM rather than AOM.

Comment: Crucially, state clear criteria for diagnosis of different types of otitis media as the clinical presentation, etiology and treatment differ widely.

Response~ Thank you very much for the comment. The criteria we used to classify otitis media as AOM or COM was just the presence of ear discharge (unilateral or bilateral) and the duration of illness (less than 14 days as AOM and 14 or more days as COM). See line 49 to 50

Comment: I notice that some of the bacteria isolated are often found more commonly in the external ear so clarification of how the swab was taken is essential.

Response~ Thank you for the valuable comment. To avoid surface contamination, the ear discharge was collected from the participants under strict aseptic technique (Cleanse the external ear canal with antiseptic solution) using single-use commercially available sterile cotton swabs with utmost care by pulling the pinna outward and backward to make it more straight forward for taking the ear swab and then gently rotated and taken out.

Comment: Exclude non-infective otitis media as typically this is not treated with antibiotics.

Response ~ Thank you very much for the comment and we have tried to address this concern in the revised manuscript.

Comment: The authors could explore antibiotics that may be used topically; given (line 115) the majority of bacteria were sensitive to antibiotics available in topical form (e.g ciprofloxacin, gentamicin). Have these results in particular changed your own practice?
Response~ Thank you very much for the comment. Yes, the investigators have provided the results of the antimicrobial susceptibility for the health workers treating the patients and the treatment of some of the patients have been modified accordingly.

Comment: Perhaps narrowing the focus of the study down to demonstrate the range of bacteria found in AOM with perforation in Jimma Town, would be useful data in that geographical area.

Response~ Thank you very much for the comment. We have added few statements on the background to make it more inclusive.

Comment: The background section starts by talking about only children yet this study includes patients of all ages.

Response~ Thank you very much for the comment. We have added few statements on the background to make it more inclusive.

Comment: Unfortunately, this is the main floor with this article. The authors say they included any patient with a presumptive/clinical diagnosis of draining OM. They have given no diagnostic criteria for this condition in terms of history, examination or other tests, eg tuning forks.

Response~ Thank you very much for the constructive comment. All the relevant clinical history and physical examinations were done by the treating health workers and the investigators just collected the relevant information for the study. The patients who were seen in Jimma University Medical Center had otoscopy done whereas the patients seen in the other health facilities didn’t have such examination because of unavailability of the equipment at the health facilities. We have tried to clarify for the reader in the revised manuscript.

Comment: Otitis media requires a definition to validate the patients included in the study. Combining AOM, CSOM (inactive, active, mucosal, squamous) and OME (which is usually non-infective) into one means discussion about antibiotics becomes less valid. These are separate conditions, as defined in ICD-11.

Response~ Thank you very much for the comment. We have tried to address this point in the methods part and we admit this could be one of the limitation as our entry point for such classification was only ear discharge and not detailed as indicated by reviewer.

Comment: Were any patients immunocompromised, eg diabetic, HIV-positive (this could affect the bacterial profile)?

Response~ we agree with is valid comment, yes, there were only 4 patients with HIV and 2 patients with diabetes and we didn’t find any statistically significant association with these variables because of the smaller number and hence we didn’t present it here.
Comment: Were any patients asked to be enrolled but refused.
Response~ Fortunately, we didn’t have any patient who was asked to be enrolled but refused.

Comment: Was the swab performed with the naked eye, with a headlight, with an otoscope, with a microscope?
Response~ Thank you very much for the comment. In one of the hospitals (Jimma university Medical Center), the swab was collected by using of otoscope and headlight but in the other health facilities with the naked eye since these equipment were unavailable at these health facilities. This is now indicated in the revised manuscript.

Comment: Who took the swab? A nurse, an ENT nurse practitioner, an ENT doctor, a GP?
Response~ The swab was taken by nurses at the three health centers and by ENT doctor and GP at the hospitals. This is now indicated in the revised manuscript.

Comment: Antimicrobial susceptibility testing- Well-written with some technical information
Response~ Thank you very much.

Response~ The comment was accepted and corrected in the revised manuscript.

Comment: Why were children divided into children older than 14 years old and included with adults, and children aged less than 14 in the results description?
Response ~ Thank you very much for the comment. The reason why we classified the children like this is in many of our health facilities in Ethiopia, pediatrics services are up to the age of 14 years and above 14 years, the services are provided together with the adults.

Comment: Table 1 - Why were the age groups of participants grouped in that way?
Response~ Thank you very much for the comment. We just followed the Ethiopian Demographic Health Survey (EDHS) way of classification.
Comment: Why was a swab taken from patients with watery or mucoid discharge? Unless there were strong suggestions in the history of acute otitis media, taking a swab would not be relevant in a non-purulent discharge because this goes against the potential for active infection as a cause of their discharging ear.

Response~ Thank you very much for the comment. We just followed the treating health workers’ decision about the diagnosis of OM (based on relevant history and physical examination) and took swab for culture and sensitivity.

Comment: Odor of discharge – was this the patient/relative opinion or a clinical assessment?

Response~ This was based on clinical assessment not patients’/parents’ relative opinion.

Comment: Residence – does the distribution of participants’ residence (rural versus urban) mirror all the attendees from your hospitals?

Response ~ Thank you very much for the comment. With regard to the 3 health centers and one of the hospitals, yes the distribution mirrors the general pattern of the attendees since they provide services mainly for the dwellers of the town. But in the other hospital, that is not the case since it is a referral hospital for all the population in the catchment area and not only for the urban dwellers.

Comment: Table 2 – though useful to show age, I’m not sure how the other variables relate to the aim and title of the study and the latter two (URTI and smoking) are not explored in the text.

Response ~ Thank you very much for the comment. Among the risk factors for OM are URTIs and exposure to cigarette smoking; that is why we included these two factors into the analysis.

Comment: Were p-values for all sub-types of variables comparing AOM and COM all combined or with each sub-type compared individually? This is unclear.

Response ~ Thank you very much for the comment. The p-value indicated in the table 2 was to comparing the individual variable with sub-type of OM. The bivariate analysis of combined OM and different variable (gender, patient history of OM, family history of OM, URTIs, asthma , HIV infection, diabetes mellitus, exposure to charcoal and fire fuel’s, children having one or more siblings, allergy and exposure to smoking,) revealed that there was no significant relationship but when the listed above variable compared with sub-type of the OM indicated that
adult age (p=0.031), rural residence (p=0.005), previous history of health care visit and had treatment (p=0.000), upper respiratory tract infection (p=0.018) and presence of cigarette smoker in the house (p=0.022) has statistically significant relation to COM rather than AOM and the rest are not.

Comment: Line 116: 11.1-92.7% is a very big range.
Response ~ Thank you very much for the comment. We have tried to restate it.

Comment: Line 122: similarly 0-100% range is not a helpful statistic – what has the reader learned from this?
Response ~ Thank you very much for the comment. We have restated it.

Further comments

Comment: Given the criticism about prescription of empirical antibiotics, do the authors advocate taking a swab and not treating the patient until the specific organism is known? My practice would be to take a swab if the patient has symptoms and signs of either AOM or active CSOM, then begin treating the patient with topical +/- systemic antibiotics according to empirical guidance from microbiology colleagues. Once the organism is known, if the patient is not improving the antibiotic could be changed. If they had MRSA I would arrange for the patient to have systemic decolonization treatment.
Response ~ Thank you very much for the comment. We also recommend the same, i.e take a swab sample for microbiologic analysis, start the patient on empiric treatment and then revise the subsequent treatment according to the clinical improvement and the microbiologic result. We don’t usually do decolonization in cases of MRSA. We have reflected this in the discussion part now in the revised Manuscript.

Examples of poor English and spelling errors:

Comment: Page 3 line 40: “…for the residents of Jimma Town and its surrounding.”
Response ~ thank you very much for the comment. We have addressed it.
Comment: All of lines 42 and 43
Response ~ Thank you very much for the comment. We have addressed it.

Comment: Line 75: “Participant’s’”
Response ~ Thank you very much for the comment. We have corrected it.

Comment: Line 99-101: “The chi-squared test indicated that adult age...had statistically significant with COM rather than AOM (Table 2).”
Response ~ Thank you very much for the comment. We have corrected it.

Comment: Table 3 names of bacterial species: “pyrogens” rather than “pyogenes”; “Klebisella” rather than “Klebsiella”; “Enterbacter” rather than “Enterobacter”.
Response ~ thank you very much for the comment. We have corrected accordingly.

Comment: Figure 1 names of bacterial species: “pyogen” rather than “pyogenes”; “aerogenosa” rather than “aeruginosa”; “Klebsilla” rather than “Klebsiella”; “Providincia” rather than “Providencia”; “morganii” rather than “morganii”
Response ~ Thank you very much for the comment. We have corrected all.

Comment: Line 140: “is in agreement with previously studies done”
Response ~ thank you very much for the comment. We have corrected it accordingly.

Comment: Line 177: “In contrast to this reports,...”
Response ~ Thank you very much for the comment. We have corrected it.