

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form ([see an example](#)) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Sensitisation to mites in a group of patients with asthma in Yaounde, Cameroon: a cross-sectional study
<b>AUTHORS</b>	Pefura-Yone, Eric Walter; Kengne, Andre; Kuaban, Christopher

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Bousquet, Jean INSERM
<b>REVIEW RETURNED</b>	11-Oct-2013

<b>GENERAL COMMENTS</b>	<p>The study is a small cross-sectional study in Cameroon on patients with asthma. The patient selection is biased (office or hospital) and does not reflect the general population.</p> <p>The reliability of skin test is doubtful since the Stallergènes extracts Der p and Der f are usually cross-reactive and there should not be differences in prevalence. Specific IgE should have been measured as well.</p> <p>Some allergens are not standardized.</p> <p>Moreover, the results not appropriately reported. In particular, the prevalence of all skin tests should be reported.</p> <p>However, it is a study from a Sub-Saharan country where information is scarce.</p> <p>I would tend to reject the paper, but with a 66% acceptance rate, it may be accepted.</p>
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<b>REVIEWER</b>	Tovey, Euan University of Sydney, Allergen / Medicine
<b>REVIEW RETURNED</b>	07-Nov-2013

<b>GENERAL COMMENTS</b>	<p>This paper is well written. The findings are novel, in that it is the first such report in this population, although the findings are not surprising and are restricted in their audience appeal. The paper is very straightforward in its presentation and interpretation.</p> <p>There are a couple of very minor changes I would suggest.</p> <p>P6 L51 I would have said 'shown' not 'revealed'</p> <p>P7 line 3. Should be 'live' not 'leave'</p> <p>P7 I am not sure what is meant by 'primordial' in the sentence "Inclusion of these three mites in the pool of allergologic test appears to be primordial in this setting, considering the fact that</p>
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	<p>more than a third of the patients had an isolated sensitisation to one of the three mites”</p> <p>The findings would have been strengthened by a study of the types of mites in houses, but this would be a separate study. This may have indicated the relative occurrence and prevalence of the three species for which allergy was tested for, and whether other types of mites, such as food mites, were also present and should have been tested for. I personally would speculate that D farinae was probably not common and what we are seeing is cross reactivity, between DP and DF, although I don't expect the authors to include this speculation. Other aspects which would have added interest would be to speculate whether those tested might have acquired their allergies on some other place during their lives, or whether they were city or rural residents, and also the prevalence of helminth infections in such a population, which may decrease reported skin test positivity. The finding of the high association of mite with Alternaria allergy is unusual compared to reported sensitisation in more temperate and cooler climates. As speculated in the manuscript, this reflects the exposure in this tropical environment, although I cannot think of other references which have shown this. A reference about this would have added interest.</p>
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#### VERSION 1 – AUTHOR RESPONSE

Reviewer Name Jean Bousquet

Institution and Country Montpellier, France

Please state any competing interests or state 'None declared': NONE

The study is a small cross-sectional study in Cameroon on patients with asthma. The patient selection is biased (office or hospital) and does not reflect the general population.

Our answer: Thank you for raising this important point. We however feel that the limitation of hospital-based study have to be balanced against the challenges and logistics of conducting such a study in community. The prevalence of asthma in this context using a history of wheezing in the previous 12 months as a proxy can be as low as 0.8% at the population level in this setting (Trop Doct. 2004 Oct;34(4):209-14), suggesting that we could have to screen up to 20,000 people at the population level to achieve the same final sample of 209 participants included in the present study. However, and as said already in our limitation section on page 8, by choosing to recruit participants from the two main referral facilities for chest diseases in the city, we would have in major ways captured most of the key characteristics of those from the community who are likely to seek care for asthma. We have however recognised as a limitation that it would have helped to recruit participants from facilities beyond the capital city to allow a broader extrapolation of our findings. The most we could do was to recruit patients over a long term period to allow the inclusion of the majority of those who were likely to report to the two recruitment facilities.

The reliability of skin test is doubtful since the Stallergènes extracts Der p and Der f are usually cross-reactive and there should not be differences in prevalence. Specific IgE should have been measured as well.

Our answer: Thank you for raising this point. Cross-reactivity between mite species is indeed very high. However a positivity of skin tests to several species may reflect either cross-reactivity or a true multiple sensitisation. As pointed out by the reviewer, specific IgE measurement would have been of great contribution in this context. We had already mentioned the absence of IgE measurement as a limitation of the present study. We have now expanded the relevant sentence to capture the fact that IgE measurement could help clarifying the issue of cross-reactivity. It reads:

“Indeed, measurements of specific immunoglobulin E could reveal more sensitisations, in particular in patients with hyporeactivity to skin tests and may also help to differentiate between cross-sensitization and multiple sensitisations to major mite allergens.”

The results are not appropriately reported. In particular, the prevalence of all skin tests should be reported.

Our answer: Fixed. The related opening sentence in the second paragraph of the result section reads: “One hundred and forty (69.7%) patients had sensitisation to at least one of non-pollenic allergens.”

Biases of the study are not considered.

Our answer: we have added two sentences to the limitation section to discuss the possibility of bias. They read:

“It remains however that recruitment from health facilities as opposed to a community-based sample could potentially bias our estimates of the prevalence of mite sensitisation. The direction of the effect of such a bias is difficult to predict, and the challenges and logistics for conducting a study of this nature in a setting with a possibly low prevalence of asthma at the population level, have to be considered.”

Some allergens are not standardized.

Our answer: It would appear that only the allergen for Alternaria is not standardised. We have however employed the extracts commonly used by physicians to screen for the effect of Alternaria (Stallergenes Laboratories, Anthony-France).

However, it is a study from a Sub-Saharan country where information is scarce.

Our answer: Thank you

Reviewer Name Tovey, Euan

Institution and Country

University of Sydney, Allergen / Medicine

Please state any competing interests or state ‘None declared’: None

This paper is well written. The findings are novel, in that it is the first such report in this population, although the findings are not surprising and are restricted in their audience appeal.

The paper is very straightforward in its presentation and interpretation.

There are a couple of very minor changes I would suggest.

Our answer: Thank you.

P6 L51 I would have said ‘shown’ not ‘revealed’

Our answer: Fixed.

P7 line 3. Should be ‘live’ not ‘leave’

Our answer: Fixed.

P7 I am not sure what is meant by ‘primordial’ in the sentence “Inclusion of these three mites in the pool of allergologic test appears to be primordial in this setting, considering the fact that more than a third of the patients had an isolated sensitisation to one of the three mites”

Our answer: We have replaced ‘primordial’ with ‘important’.

The findings would have been strengthened by a study of the types of mites in houses, but this would be a separate study. This may have indicated the relative occurrence and prevalence of the three species for which allergy was tested for, and whether other types of mites, such as food mites, were also present and should have been tested for. I personally would speculate that *D farinae* was probably not common and what we are seeing is cross reactivity, between DP and DF, although I don't expect the authors to include this speculation. Other aspects which would have added interest would be to speculate whether those tested might have acquired their allergies on some other place during their lives, or whether they were city or rural residents, and also the prevalence of helminth infections in such a population, which may decrease reported skin test positivity. The finding of the high association of mite with *Alternaria* allergy is unusual compared to reported sensitisation in more temperate and cooler climates. As speculated in the manuscript, this reflects the exposure in this tropical environment, although I cannot think of other references which have shown this. A reference about this would have added interest.

Our answer: Thank for offering this thoughts for consideration. We didn't include residency and screening for helminths in the current study. We did not also find another study that has reported frequent association between sensitisation to mites and to *Alternaria*. Overall, as pointed by the reviewer and already captured in our conclusion further studies are needed in this setting.