Reviewer's report

Title: Atopic dermatitis and indoor use of energy sources in cooking and heating appliances.

Version: 2 Date: 30 September 2012

Reviewer: Erik Van Miert

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MINOR ESSENTIAL REVISIONS

Overall, the quality of the manuscript has clearly improved. Some issues still require some consideration because they weaken the quality of the manuscript.

ABSTRACT

Sentence is misleading: “Crude and adjusted odds ratios (cOR, aOR) and 95% confidence intervals (CIs) were calculated using logistic regression analysis (Chi-square test, p-value<0.05).”

I assume that the cORs were simply calculated (no need for logistic regression), whereas the aORs were obtained using logistic regression analysis?

METHODS

STATISTICS

Sentence is misleading: “For each variable, crude odds ratios (cORs) and 95% confidence intervals (CIs) were calculated using logistic regression analysis.”

I assume that the cORs were simply calculated (no need for logistic regression)?

The statement in the result section “it should be noted that each group of percentages (for cooking and heating devices) cannot sum 100% in each category” suggests that individuals for which two types of heating or cooking device was provided were excluded from the corresponding analysis. Correct? If so, please mention this in the statistics section. If not, please clarify statement (also in the statistics section) because one would expect otherwise figures higher than 100%.

RESULTS

GENERAL CHARACTERISTICS OF INDIVIDUALS WITH AD

Sentence:” Also the highest prevalence of AD was found in the obese children, with a significant cOR value of 1.34 (95% CI: 1.14-1.58).” Using of “also” is confusing and unnecessary.

Considering that the authors consistently address (even small) numerical differences, the lower cOR for the group the having a smoking father (6-10 cig/day) and reaching statistical significance judging on 95% CI, should be put in
perspective.

Please provide a numerical value (e.g. p<0.0001) rather than a qualitative assessment “highly significant”

USE OF THE DIFFERENT TYPES OF COOKING AND HEATING APPLIANCES

The frequency of the usage of cooking and heating appliances is elaborated in this section. Also statistics were performed on this data. The results of these statistical tests are poorly described. The text only mentions “Again, statistically significant differences were obtained, excepting for the …”

Please use “except” instead of “excepting”, 2 occurrences in text.

The statement “it should be noted that each group of percentages (for cooking and heating devices) cannot sum 100% in each category” suggests that individuals with two types of heating or cooking devices were excluded from the corresponding analysis. Correct? If so, please mention this in the statistics section. If not, please clarify statement (better in the statistics section) because otherwise one would expect figures higher than 100%.

The following sentence is incorrect (2x “was”) and confusing: “Despite de fact that the cOR was 1.17 (95% CI: 0.98-1.39) for the use of biomass heating was close to significance, only the use of electric cooker showed a significant cOR of 1.14 (95% CI: 1.01-1.27) for AD development.”

DISCUSSION

The sentence is not clear: “As it is said above, our study population belongs to a developed country where the technology advances have extensively released new gas modern heating appliances, provided with closed conductions for residual gases of the combustion process, more efficient and insulated devices and cleaner installations”

The expression “an almost statistically significant association” is rather vague, why not using “consistent trend”

The meaning of “otherwise” in the following sentence is not clear “Otherwise other possible reasons should be considered: …”

The authors rightfully elaborate on the trend suggesting an association between electric heating and AD. As in the first version, they postulate a possible role of electromagnetic fields (EMF). Even though, all hypotheses should be able to be raised, the latter one is a very weak one, i.e. electrical heating itself is one of the smallest sources of EMF in the in-house environment, and the reason why an electrical heating system should be a proxy for other, more important sources of EMF is not addressed. The authors consider that the study by Di Giampaolo et al (2006) has shown that EMF can to affect the immune function. This study included however only 15 study objects and is at best a case-control study, and thus incapable of proving causality. Moreover, the same group published in another study in the same issue of the same journal (Int J Immunopathol
Pharmacol. 2006 Oct-Dec; 19 (4 Suppl):43-48.) in which they concluded “An effect of EMFs on immune functions, in part mediated by nervous mechanisms, may be hypothesized. However, the influence of lifestyle may not be excluded” As such, raising EMF as a causal factor for effects on the immune function based on the cited references is not justified and the EMF hypothesis as an explanation for the results in the current study should be stated more cautiously (if at all..).

CONCLUSIONS
The first sentence is not scientific.
“Unfortunately”: I understand that the authors would like to have found more spectacular results, but I imagine that the absence of a clear association between AD and heating/cooking systems is rather good news for the study subjects.
“conclusive evidences of clear associations”: if this was the goal of the study, I believe authors were “somewhat overambitious”.

TABLES
Please consider improving the layout of tables 2 and 4. Mentioning the cOR of 1.00 is rather trivial and especially in table 4 this uses quite some space without adding information.

According to the text, statistical tests have been performed on the data in tables 1 and 3, but these are not shown in the tables. It would be better if the results of these statistical tests are shown in the tables if this can be done in an understandable way.

Explain the * in the footnotes of table 4.

Level of interest: An article of limited interest

Quality of written English: Acceptable

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