Reviewer's report

Title: Biological Monitoring of Blood Naphthalene Level as a Marker of Occupational and Environmental Exposure to PAHs among Car-Mechanics and Car-Spray Painters in Rawalpindi

Version: 2 Date: 24 January 2011

Reviewer: laura campo

Reviewer's report:

General comments:

The authors describe the assessment of exposure to naphthalene by means of quantification of blood naphthalene in car mechanics and car spray painters in Pakistan. The object of this manuscript is of interest, since there are no many articles on the use of blood naphthalene as biomarker of exposure. Nevertheless, Methods lack of quality control, Results are not adequately presented, tables and figures are confused, Discussion is too long. For these reasons, the paper is not acceptable in the present form.

Major Compulsory Revisions

Specific Comments:

Introduction

Line 17: Molecular weight is not a “carcinogenic attributes of PAHs”, Please, rephrase.

Methods:

Data collection: The recruitment of control subjects should be better described. Were the exposed subjects belonging to the same industry? Who were the controls? Did the subjects sign the informed consent?

It is written that the samples were taken on spot during work hours. Which precautions were taken to avoid contamination?

Procedure: The entire paragraph is taken, unless very small changes, from the article by Al-Daghri (number 14 of the reference list). I think that the authors should recall the reference at the beginning of the paragraph, writing something like: “Blood naphthalene was analyzed according to Al-Daghri and so on”.

In addition, important information is lacking, in particular: the analytical limit of detection and the analytical quality control (accuracy, precision and so on) for the analysis of naphthalene must be specified; the analytical quality and the brand of the reagents used; the HPLC column used.

For quantification of naphthalene, a rough method is used. Have the Authors the possibility of using a calibration curve? Please specify what is the standard used
for the quantification (see formula): concentration (how was it assessed??), was it prepared in the lab? In solvent (which?) or in blood? Was it pursued by a commercial supplier? (which one?)

Please specify which were the criteria for the classification of the working ambient: what is the difference between “better” (I think that should be replaced with “good”) and “satisfactory”? 

Statistical analysis:
Were the data normally distributed? If not, was a log-transformation used? Student’s t-test can be used only on normally distributed data. In that case, Pearson correlation should be use, while Spearman correlation is to be used only on not normally distributed data.

Results:
Third and fourth paragraph: If data are not normally distributed (very probable), median is a better descriptive parameter than mean.

The last sentence of fourth paragraph (“Comparison between pairs of groups…”) should be anticipated in the third paragraph, before the splitting of the data for smoking habit.

Third paragraph, last line: when talking about controls, two p values are given: it is not clear what are the terms of comparison.

Figure 2: in these graphics, I can count only about 30 subjects: who are these subjects? Only exposed? Only smokers? Please, describe better.

Discussion and Conclusions:
It is really too long, with many repetition and not necessary observations. I think it must be significantly reduced.

Tables and Figures:
Table 3 and Table 4: Data are reported in a different order and this makes confusion in the reader: in table 3 minimum, maximum, mean and standard deviation are listed, while in table 4, the order is mean, standard deviation, min and max. Please, report the statistics in the same order.

Table 3: Here it is said that there are undetected samples. But what is the limit of detection of the method? This is not specified in the text!
what are p and m in the table? They are not described in the legend.

Table 4: Please report the number of subjects in the different categories, and as in Table 3, report the number of detected/undetected samples. Legend: what is referring the t-test? What is Spearman correlation referring to?

Figure 1: What is the meaning of Mm, Pp, Cc?

Figure 2: I can count only about 30 subjects, who are these subjects? It could be useful, if possible, distinguish controls and exposed subjects in the figure, or
smokers and non smokers.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests