Reviewer's report

Title: Higher urine 1-hydroxy pyrene glucuronide (1-OHPG) is associated with tobacco smoke exposure and drinking mate in healthy subjects from Rio Grande do Sul, Brazil

Version: 1 Date: 23 December 2005

Reviewer: calogero saieva

Reviewer's report:

General
The paper by Fagundes et al. reports results from a study carried out in a Brazilian population to evaluate the association between smoking exposure and drinking mate and urinary excretion of 1-hydroxy pyrene glucuronide. This is the major metabolite of polycyclic aromatic hydrocarbons (PAH), it is always present in urine of subjects exposed to PAH and is used as a biomarker of exposure to pyrene. On the other hand, the excretion levels of 1-OHP were significantly associated with cigarette smoking, and were influenced by other factors, including gender, BMI and diet. This study was carried out on 199 volunteers, healthy subjects recruited from the outpatient unit at the University Hospital of the Santa Maria area. Overall, this is a well-written paper, and adds further information on the possible role of PAH exposure on oesophageal cancer development. In this study a significant association between tobacco smoke exposure and mate consumption with higher urinary 1-OHPG excretion emerged. Furthermore, high urine 1-OHPG levels were found in non-smoker subjects but PAH exposed by particular cooking methods (barbeque).

On the other hand, several epidemiologic studies showed that PAH from different sources, including tobacco smoke, may act as oesophageal carcinogens. Likewise, specific drinking habits, such as high consumption of hot mate, emerged as additional risk factors for the oesophageal cancer. In conclusion, the high exposure to PAH from tobacco smoke and mate drinking found in this population might contribute to explain the high rates of oesophageal cancer in this area, although other studies, particularly with a case-control design, are needed to better evaluate this association.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
It is a well designed and analysed study. Uni- and multi-variate analyses were carried out, and additional interactions between variables have been explored. The study in fact includes correction for potential confounding factors (age, sex, residence…). However, it could be helpful in the statistical analyses to consider other potential confounding factors, such as BMI or professional exposure.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
Minor comments:
1- Discussion, pag. 8 line 2
   to add “oesophageal cancer” into the sentence “between mate consumption and risk of…”
2- References pag. 9
   it might replace the first reference (Parkin 1999) with another more recent (for example, Parkin et al., CA Cancer J Clin 2005)
3- References pag. 11
   to correct in the title “Linxina” into Linxian
Discretionary Revisions (which the author can choose to ignore)

**What next?:** Accept after discretionary revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No

**Declaration of competing interests:**

I declare that I have no competing interests