Reviewer’s report

Title: Antioxidant intake among Brazilian adults - The Brazilian Osteoporosis Study (BRAZOS): a cross-sectional study

Version: 1 Date: 14 December 2010

Reviewer: Carlos C Chagas

Reviewer’s report:

The study by Pinheiro et al was conducted in order to evaluate the intake of the major dietary antioxidants in a representative sample of the adult Brazilian population and discuss the main consequences of a low intake of these micronutrients on overall health. This study is important because dietary intake data in representative sample in Brazil is scarce. However, the fact that the evaluation of dietary intake was based only on a single 24-h recall, is a very relevant limitation. Moreover, there are some others important issues that should be considered by the authors:

Major Compulsory Revisions:

- Both folate and magnesium are not considered classic dietary antioxidants. The authors should describe their specific role on oxidative stress. The reference cited by the authors (14) does not support the affirmation that folate and magnesium merit particular attention similarly to vitamins A, C, E, zinc and selenium. Furthermore, there are other dietary antioxidants, including manganese and cupper as well as bioactive compounds such as lycopene and resveratrol that were not considering by the authors.

- In the abstract, the authors state that the aim of the present study was to evaluate the intake profile of the major dietary antioxidants in a representative sample of the adult Brazilian population and discuss the main consequences of a low intake of these micronutrients on overall health. However, in the Introduction section, the authors state that the aim of the present study was only to describe the dietary intake of the main antioxidants in a representative sample of the adult Brazilian population. What was the real aim of the study?

- The authors should give more information regarding the number of subjects enrolled on the study as well as the criteria used to select the 150 cities in Brazil.

- The authors should describe in the Material and Methods section the inclusion and exclusion criteria adopted. Some condition such as atherosclerosis, diabetes, cancer and smoking increase antioxidant needs. Moreover, were people who use dietary supplements excluded?

- What was the prevalence of subjects who presented energy intake below 400 Kcal or above 5500 Kcal?

- Considering that the present study is cross-sectional one, it should be mentioned in the text when the 24-h recall was performed. The dietary
information may provide a biased interpretation because of some cultural parties and seasonal food availability.

- In Table 3: considering that more than 2 regions were compared, Student’s t-test is not applicable.

- Some foods in Brazil are fortified with folic acid. Is the intake of these products different between the regions or gender? What do the authors mean by folate? Only natural folate or both natural and synthetic folate (folic acid)?

- The Discussion section should be reorganized. Because of the study design and the absence of serum dietary and oxidant biomarkers, it is merely descriptive. What was the authors’ hypothesis? Did the authors expect these results? According to the authors, the present study is the first one to evaluate the dietary intake of vitamin E among Brazilians. Thus the discussion should compare the present data with previously ones reported in Brazil and in other countries. Was the folate intake related to food fortification policy or related to cultural habits of the Brazilian population? The authors have to discuss the relevance of a low antioxidant intake and the prevalence of chronic diseases in the different regions. Finally, the authors could suggest a way to improve the antioxidant status of Brazilian population.

Minor Essential Revisions:

- The authors should say something about Table 2. What is its relevance for the study considering the statistically significant results?

- The Table legend should provide more information. What the meaning of the bold values? What was the statistical test used in Tables 5 and 6?

Discretionary Revisions:

- A dietary intake by age groups could provide some important results (e.g: p for trend). Moreover, it could be interesting to check any significant correlation between BMI, socioeconomic status or education, and dietary intake.

Level of interest: An article of importance in its field

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.