Author's response to reviews

Title: Low birth weight and presence of fine particulate matter and carbon monoxide in the Brazilian Amazon: a population-based case-control

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Author's response to reviews: see over
Rio de Janeiro, February 12, 2014

BMP Cover letter

Dear Dr. Peter O'Donovan, BioMed Central
Executive Editor of BMC Pregnancy and Childbirth

Many thanks for your comments and suggestions about the manuscript in annex. We appreciate very much the opportunity to improve the manuscript.

The following changes were carried out.

1. The problem with the referencing was corrected throughout the manuscript.
2. We also review and agree with your suggestion about to correct the study design of the research for case-control study.
3. We introduced the suggestion to explain that the air pollution can alter the anatomy and placental morphology which in turn reduces oxygen transport and increases blood viscosity, producing direct toxic effect on the fetus.
4. Also, we explained in the text that "cerrado" means Brazilian savanna.
5. The Table 3 was checked and the data were corrected.

All corrections are in red in the manuscript in annex.

We hope we have answered all your suggestions and corrections.
Please find attached our manuscript to be evaluated by BMC Pregnancy and Childbirth after to have answered your corrections and suggestions.

We assessed the impact of exposure to particulate matter and carbon monoxide from biomass burning in the Amazon and Cerrado (Brazilian savanna) biomes on live birth weight in cities of Mato Grosso State, Brazil, with high deforestation rates in 2004 and 2005. This period was one of the most intense biomass burning in the region. Data about birth were obtained from the Information System on Live Birth of the Ministry of Health and the exposure variables were used historical series of average daily concentrations of PM2.5 and CO provided by the Center for Weather Forecasts and Studies Climate of the National Institute for Space (CATT - BRAMS model). Maternal exposure was estimated through the medium of pollutants for each trimester and for the entire period of gestation. Data were analyzed by logistic regression and multivariate method and the adjusted odds ratios were calculated for exposure variables associated with low birth weight (LBW).

The results suggest that the maternal exposure to higher interquartile ranges of PM2.5 and CO from burn-clearings were positively associated with the occurrence of LBW in all periods analyzed. This was statistically significant in the second trimester for both pollutants and in the third trimester for PM2.5 exposures only. The same results may be expected to occur in other regions with significant biomass burning, including cities whose borders are close to the Amazon biome, characterizing a serious public health issue.

In case of any questions, please do not hesitate to contact us anytime.

Sincerely,

Sandra Hacon