

# EXPOSURE OF AIR POLLUTION AND CONGENITAL MALFORMATIONS IN STATE OF MATO GROSSO, BRAZILIAN AMAZON

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**Background and Aim:** Exposure to air pollutants has been associated with congenital malformations (MC). In the last decade many municipalities of the state of Mato Grosso has shown concentrations of fine particulate matter (PM<sub>2.5</sub>) higher than recommended by the WHO.

**Objective:** To analyze the association between air pollution from biomass burning and MC during 2000 to 2007 in the municipalities of Mato Grosso, Brazilian Amazon. **Methods:** Ecological study of the association between MC at birth or at death and air pollution from biomass burning. The dependent variables were the outcomes of birth and/or death with records of any MC and the independent variables were the number of hotspots during the period in study, as a proxy of the concentration of air pollution from the fires, as well as, the percentage of annual hours of PM<sub>2.5</sub> above 25•g/m<sup>3</sup>. Poisson regression models for rates were carried out adjusted by pesticides marketed and HDI for municipalities. **Results:** Association between the rates of births with MC and the number of hotspots recorded in 2001 (RR: 1.003, 95%:1.0004-1.0006), with the percentage of PM<sub>2.5</sub> above 25•g/m<sup>3</sup> in 2004 (RR: 1.007, 95% :1.0003-1.014), and with the HDI for 2005 (RR: 6.48, 95% :4.06-1.03) were verified. There were association between rates of death with MC with the HDI in 2001 (RR: 1.25, 95%:3.50-4.46) and 2004 (RR: 2.01, 95%: 6.41-6.29).

**Conclusion:** Congenital malformations registered at birth showed a weak association with air pollutants from biomass burning in Mato Grosso.

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