

2<sup>nd</sup> International Conference on

# ENVIRONMENTAL HEALTH & GLOBAL CLIMATE CHANGE

September 7-8, 2017 | Paris, France

## SHORT-TERM EFFECT OF PM10 AND OZONE ON CARDIOPULMONARY MORTALITY IN THE LOCALITY OF SANTA FE, BOGOTÁ, COLOMBIA (2012 – 2014)

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**Objective:** Evaluate the short-term effect of PM10 and ozone on cardiopulmonary mortality in the locality of Santa Fe of Bogota for the period 2012-2014.

**Methods:** time series study that used Poisson models adjusted for confounding factors related to variations in time such as temperature and relative humidity, using self-correlative structures that included the 3 day moving average and deferred effects (lags) up to 5 days for individual and combined contaminants. We used hourly information recorded on the air quality monitoring station of the locality, which is a traffic type. The antecedent cause of daily cardiopulmonary mortality in the locality was obtained from the District Health Secretary of Bogota.

**Results:** In the exploratory analysis of the pollutants it was observed that the mean daily PM10 was 38.4µg/m<sup>3</sup>, a concentration that exceeds the annual value established by the World Health Organization of 20µg/m<sup>3</sup>, but does not exceed Daily value established by WHO and Colombian regulations (Resolution 610 of 2010), of 50 and 100µg/m<sup>3</sup>, respectively. For ozone, the maximum values established for the maximum average 8 hours by WHO (51ppb) and Colombian legislation (41ppb), were not exceeded in the locality, since the value obtained was 19.24 ppb; For the maximum hourly O<sub>3</sub> an average of 24.66ppb was recorded, which does not exceed what was allowed by Resolution 610 of 2010, which establishes a maximum hourly concentration of 61 ppb. An effect of the exposure to PM10 and Ozone in cardiopulmonary mortality was evidenced, which was not statistically significant. In all ages, a 10µg/m<sup>3</sup> increase in the average daily of PM10 showed a 1%(95% CI:-6.33; 9.10) increase in cardiopulmonary mortality two days before death (lag2), an increase of 3%(95% CI:-6.78; 14.16) in cardiovascular mortality in lag2 and an increase of 1%(95% CI:-13;16) in mortality from lower respiratory tract infection on the day of death (Lag0). Likewise, an increase of 11ppb in the average daily maximum 8 hours of ozone increases cardiopulmonary mortality by 5% (95% CI:-11.16; 24.57) one day before death (lag1).

**Conclusions:** the results show evidence in the association of PM10 and O<sub>3</sub> contaminants and cardiopulmonary mortality, although the values are not statistically significant. In addition, it was possible to show that the age group with the highest risk of cardiopulmonary mortality is those older than 65 years.