

MEXICO CITY METROPOLITAN AREA ELEMENTARY SCHOOL CHILDREN HEALTH CONDITIONS DURING MILAGRO-MCMA2006.

Tovalín Horacio^{1*}, Acosta Gustavo², Lugo René³, José Samudio², Alejandro Treviño².

¹División de Estudios de Posgrado, FES Zaragoza-UNAM, México, ²Hospital Juárez de México-SSA, México, ³Hospital Infantil de México “Federico Gómez”-SSA, México.

* E-mail: horaciotovalin@yahoo.es

Objective.

Our objective was to study the participant children health conditions during the MILAGRO-MCMA2006 campaign, including: frequency of symptoms and diseases, and hematological, biochemical and spirometry tests results.

Methods.

A general health examination was performed to all participant children, living into the MCMA at two urban sites: Iztapalapa, México City (T0), Tecamac, Mexico (T1) and one semi-rural site: San Pedro, Hidalgo (T2). A parent Informed consent was obtained for all participants. The examination included physical, laboratory and lung tests. Also, the parents fill a medical history questionnaire out.

Results.

A total of 232 children was studied. Children WMI at the three sites was different with the lowest values at T2. The laboratory tests showed among sites a significant difference in children glucose and creatinine values with lower values at T2 and T1. The blood test showed a 10% of children with anemia at T2 and a 15% at T1.

Parents referred a 55% of children with respiratory diseases at T2 and a 20% at T1 and T0. At T1 were more frequent children having of cough, fever and soar throat at the time of the study.

The spirometries results showed similar values of the forced expired volume during during the first second (FEV1) at the three sites, but the median flow (FEF25-75) was smaller at T1, where some children presented values below the normal, however the most lower values were observed at T0.

Conclusions.

The clinical and laboratory results of the participant children are in general into the normal values, however some of the participants had some signs of undernourishment. The frequency of respiratory diseases was important, mainly at T1 and T2, and in the same way in those sites the spirometry results showed a worse conditions for those children. The observed children health conditions probably are impacted by the local levels of air pollutants.

The CRP is an inflammation marker and increase as response to acute injury; ceruloplasmin is one of the acute-phase proteins, released in response to infection and inflammation, as well as superoxide scavenger and GPx, an antioxidant enzyme, reacts against H₂O₂. These three oxidative stress markers levels in the adults at T0 probably expressed their chronic response to the oxidants air pollutants in the area. The nitrite levels, are associated with the release of nitric oxide (NO) by acute inflammation processes, for that reason probably these levels were lower at the urban site, as an adaptation process of this population.