EXPOSURE TO LEAD AND RISK FACTORS FOR CARDIOVASCULAR DISEASES: A METHODOLOGICAL PROPOSAL

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Abstract: Environmental exposure to lead, even in low concentrations, is considered a public health issue, due to its ability to accumulate in the organism for a long period of time, and also to the absence of a safe concentration in the exposure to this metal. Cardiovascular diseases represent the main cause of death in the world. Studies have shown that exposure to low concentrations of lead might contribute to worsening these diseases. The objective of the current study is to present a methodological proposal to evaluate the relationship between the blood lead levels and the risk factors for cardiovascular diseases in the general population. It is a cross-sectional study conducted in the city of Cambé, in the state of Paraná, Southern Brazil, with a total of 92,888 inhabitants. The study population was composed by urban residents, aged 40 or more, and a total of 33.1% of the population of that city was in this age group. The size of the sample was calculated using the program Epi Info 3.5.1, considering an expected ratio of 50%, error margin of 3% and confidence interval of 95% resulting in a sample of 1,066 subjects interviewed. Contiguous households were visited in a randomly traced trajectory, and in each domicile, a draw was made to select one dweller with more than 40 years old, until reaching the quota of people to be interviewed, according to gender and age group in each censor sector. The dependent variable was the blood lead level and the independent variables were: demographic and social-economic variables, variables related to health conditions, arterial blood pressure, body mass index, lipid fraction (total cholesterol, triglycerides, HDL), kidney disease, vascular accident, smoking habit, alcohol consumption. All subjects presenting occupational exposure to lead were excluded. The determination of lead in blood shall be performed by Inductively Coupled Plasma Mass Spectrometry Technique (ICP-MS). For the statistical analysis, the Chi-square test will be used, together with variance analysis, with significance level of 5%. The present study intends to contribute to the discussion on the influence of exposure to low levels of lead in the risk factors to cardiovascular diseases.