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Title: Normality ranges of urine oxidative stress markers (8-OHdG and isoprostane) in Italian people free from respiratory diseases – Preliminary results

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Body: BACKGROUND: The study of oxidative stress (OxS) is becoming increasingly important in respiratory disease research. To our knowledge, the reference ranges of urinary 8-hydroxy-deoxy-guanosine (8-OHdG) and 8-isoprostane (isoprostane), a DNA and a lipid oxidation product respectively, have not yet been determined in subjects without respiratory diseases. AIM: To assess the reference range of OxS markers in Italian people aged 20-64 free from respiratory diseases (controls). METHODS: 8-OHdG and isoprostane were measured in spot-urine samples collected in the frame of Gene-Environment Interactions in Respiratory Diseases (GEIRD) study, a nested multi-case control survey. The biomarkers levels were corrected on creatinine concentration. Only controls (n=239) were considered for the aim of this work. The possible effects of potential determinants on OxS-biomarkers were studied before determining the normality range in selected subgroups of controls. Multiple linear regression was fitted to data using the logarithm of 8OHdG or isoprostane as dependent variables and sex, age, season, smoke, body mass index, as covariates. The appropriate percentiles were calculated. RESULTS: Both 8OHdG and isoprostane concentrations were significantly higher in smokers than in non smokers (p=0.025 and 0.047 respectively), while the other covariates did not influence OxS. The 95% 8OHdG normality range in non smokers varied from 0.26 to 25.94 ng/mg. The 95% isoprostane reference interval was 0.03 -5.42 ng/mg in non smokers. CONCLUSION: Provisional 95% normality range for urinary 8OHdG and isoprostane were determined in subjects free from respiratory diseases.