



287 - PHTHALATE EXPOSURE AND 10-YEAR CARDIOVASCULAR RISK: THE ARAGON WORKERS' HEALTH STUDY (AWHS)

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Resumen

Background/Objectives: Phthalates are ubiquitous endocrine-disrupting chemicals that have been associated with cardiometabolic disorders; however, evidence regarding their association with predicted cardiovascular disease (CVD) risk remains limited. The objective of this study was to assess the association between phthalates and 10-y CVD risk.

Methods: This cross-sectional study included 1,125 male Spanish workers from the Aragon Workers' Health Study (Spain, 2009-2010) without previous CVD. Phthalates were analyzed as natural log-transformed continuous variables and tertiles of exposure. The 10-y CVD risk was estimated using SCORE2 or SCORE2-Diabetes and categorized as moderate/high risk ($> 5\%$ for > 50 years or diabetics, and $\leq 2.5\%$ for < 50 years). Associations were assessed using logistic regression adjusted for covariates. Variables included in SCORE2 algorithms were not adjusted for. Restricted cubic splines were used to explore non-linear associations. Sensitivity analyses were performed by excluding participants with diabetes. Stratified analyses were conducted according to BMI.

Results: The median age of the participants was 52 years, and 42% of them were classified as having moderate/high 10-year CVD risk. In fully adjusted models, mono-ethyl phthalate (MEP) was positively associated with increased 10-y CVD risk; each 1-unit increase in ln-MEP concentration was associated with 11% higher odds of moderate/high risk (OR = 1.11; 95%CI: 1.00, 1.24). No statistically significant associations were observed for other metabolites overall, although most metabolites showed ORs > 1 . Spline analyses suggested a positive, non-linear dose-response relationship for MEP. Results were consistent after excluding participants with diabetes. In the stratified analysis, the exposure to MEP, MiBP, MnBP and OH-MiNP were significantly associated with increased 10-y CVD risk in normal weight participants. For overweight participants, only MEP remained statistically significant. For obese participants, non-significant associations were observed, with most ORs < 1 .

Conclusions/Recommendations: Higher urinary concentrations of MEP were associated with an 11% increase in predicted 10-y CVD risk. In normal weight participants, stronger associations were observed for MEP, in addition to other metabolites (MiBP, MnBP, and OH-MiNP). These findings suggest that phthalate exposure may contribute to cardiovascular risk beyond traditional risk factors.

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