

عنوان مقاله:

Early Renal Effects of Chronic Co-Exposure to a Mixture of Toxic Metals in two Pediatric Age Groups

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خلاصه مقاله:

Sources of contamination by lead (Pb), cadmium (Cd), and mercury (Hg) are not regulated in Morocco, and have been reported to be responsible for renal effects in two separate cohorts of Moroccan children and teenagers. The aim of the present study was first to compare internal levels of Pb, Cd and Hg and their separate early renal effects between these two cohorts, living in the same urban, industrial and rural areas of Fez city, and second, to determine the early renal effects of chronic co-exposure to a mixture of these toxic metals. The Generalized Linear Model analysis was used to compare the vulnerability of the two groups to toxic metals' exposure, while the JMP ۱۴ analysis was used to investigate high orders of metals interactions to evaluate the effects of the metal's mixture. The mean of blood lead levels (BLLs) was significantly and exclusively higher in urban young children (۸۲.۳۶ Vs. ۵۷.۳۹ $\mu\text{g/l}$) and may be responsible for the increase in their urinary Retinol-Binding Proteins (RBP) mean (۱۲۸.۱۵ Vs. ۸۰.۸۲ $\mu\text{g/g}$ creatinine). These results testify to a high vulnerability to lead exposure in comparison to adolescents living in the same environment. Early alteration of the tubular renal function was evidenced in teenagers, due to potentializing interactions increasing levels of urinary RBP. This confirms the high vulnerability of teenagers, compared with young children, to the renal effects of the environmental mixture of lead and cadmium co-exposure.

کلمات کلیدی:

Co-exposure, Early renal effects, Mixture of toxic metals, risk factors, teenagers, Young Children

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