

Comparison of Bisphenol A and Phthalate plasma concentrations in children and adolescents with and without excess weight and those with and without cardiometabolic risk factor

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Abstract:

Since the definition of metabolically obese normal-weight and metabolically normal overweight, much struggles were made to understand the underlying factors and mechanisms. In this study, we hypothesized that environmental exposure to chemicals could be one of the potential underlying factors for such differences in cardiometabolic profiles. This study aimed to investigate the association of serum BPA and phthalate metabolites (two of the most prevalent endocrine disruptor chemicals), with cardiometabolic risk factors in children and adolescents independent of their weight status. This nested case-control study was conducted on a subsample of 320 participants of a national school-based surveillance program in Iran. We measured serum BPA and phthalate metabolites by gas chromatography mass spectrophotometry. We compared serum BPA and phthalate metabolites in children and adolescents with and without excess weight and those with and without cardiometabolic risk factors. The four groups were not significantly different in terms of age, sex, socio-economic status, father's and mother's education, physical activity level, and healthy diet. MEHP concentration was associated with higher risk of cardiometabolic risk factors in participants with normal and excess weight. MBP concentration was significantly associated with increased risk of cardiometabolic risk factors only in normal weight students (P value <0.001).

Conclusion:

Our findings suggest that exposure to BPA and phthalates can be potential underlying factors for differences in metabolic profile of children and adolescents regardless of their weight status. Moreover, our findings suggest that the obesogenic effects of these chemicals are independent of the metabolic profile of children and adolescents. Our findings suggest that the metabolic impairment in some normal-weight children, and normal metabolic profile of some obese children can be in part, related to exposure to these environmental chemicals.



Biography:

Vahid Mansouri is a medical doctor, graduated from Isfahan University of Medical Sciences, Isfahan, Iran. His major interest is in non-communicable diseases which apply a huge burden in nowadays societies. He developed a brilliant career when he was a student and after his graduation, make him selected the outstanding student of 2019 in Iran and now he is continuing his journey in the non-communicable disease world.



Speaker Publications:

- Vahid Mansouri et al; A comparative study on the efficacy of levetiracetam and carbamazepine in the treatment of rolandic seizures in children: An open-label randomized controlled trial, Jan 2020.
- Vahid Mansouri et al; Factors associated with tendency for weight loss in a representative sample of children and adolescents: The CASPIAN-V study, Jan 2020.
- Vahid Mansouri et al; Exposure to phthalates and bisphenol A is associated with higher risk of cardiometabolic impairment in normal weight children, May 2019.
- Vahid Mansouri et al; Association of Polymorphism in Fatty Acid Desaturase Gene with the Risk of Type 2 Diabetes in Iranian Population, June 2018.

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