

INTRODUCTION

Over the past several decades, the age of pubertal onset in girls has shifted downward worldwide. Exposure to endocrine disrupting chemicals (EDCs) during critical windows of development may play a role in this trend. Epidemiological and animal studies showed that exposure to phthalates and BPA could be associated with earlier puberty onset in girls

OBJECTIVE

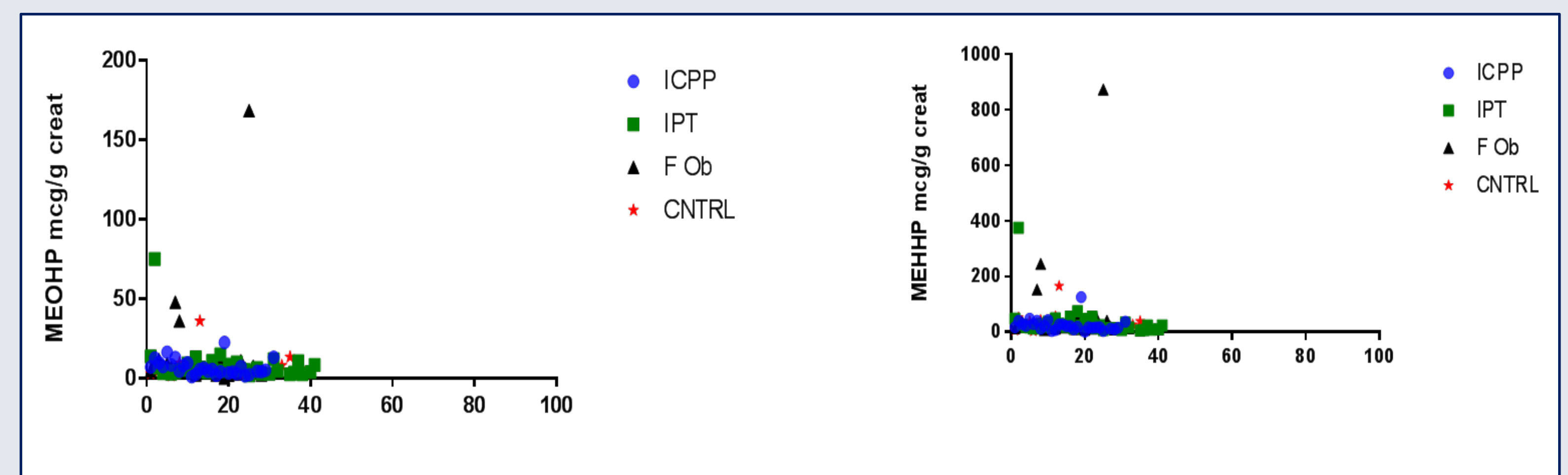
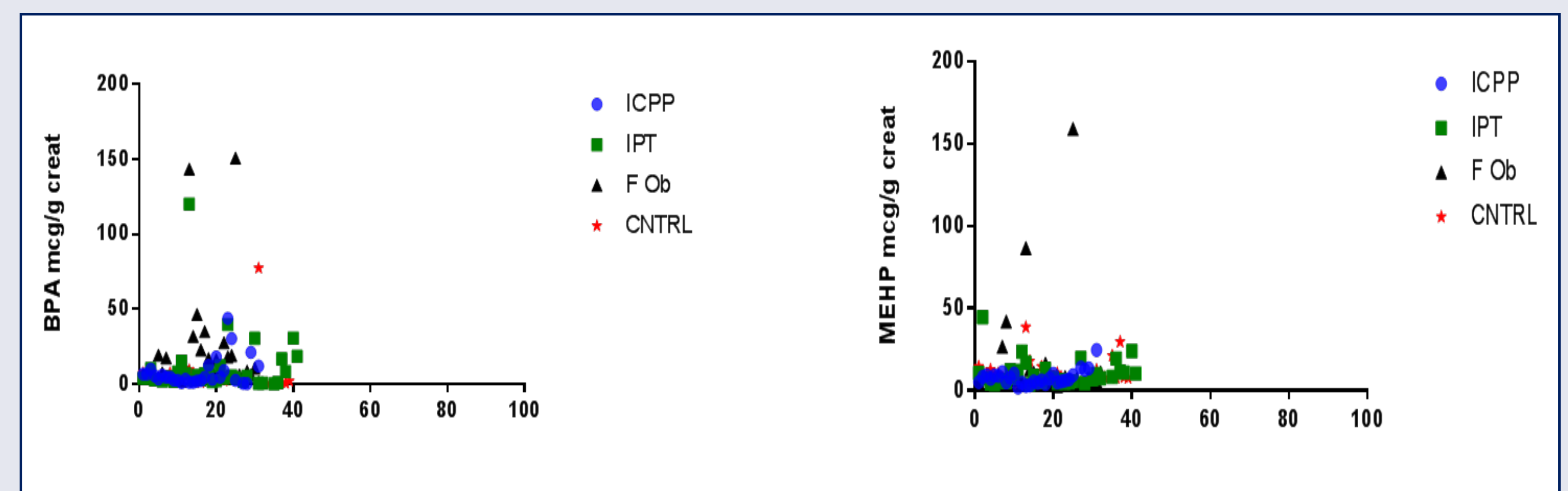
To investigate the association between the exposure to BPA, DEHP's metabolites and alterations of puberty in girls, referred for idiopathic premature thelarche (IPT) and idiopathic central precocious puberty (ICPP).

METHODS

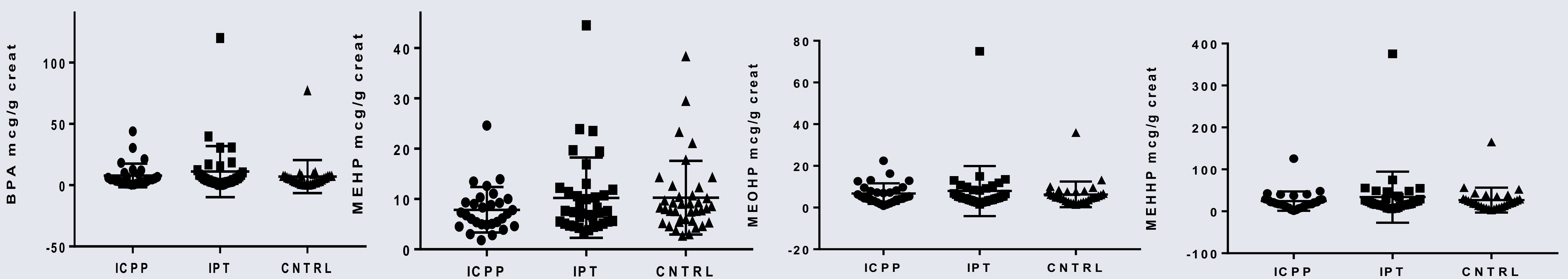
A case control study was conducted in 96 girls, subdivided into 3 groups: 29 girls with ICPP (mean age 7.3 ± 0.08), 36 with IPT (mean age 6.56 ± 1.6) and 31 controls (mean age 6.67 ± 2.3). Urine BPA and DEHP's metabolites were evaluated by high-performance liquid chromatography coupled with mass spectrometer (LC-MS/MS). Individual exposure was evaluated through an "ad hoc" questionnaires providing data on life styles, diet and other potential determinants of exposure.

RESULTS

The presence of measurable concentrations of the EDCs in all girls, even in the control group, was found.



ICPP and IPT girls showed no significant difference in EDCs levels in comparison with controls ($p=0.5$).
No significant difference in EDCs levels between ICPP and IPT girls was found.
In IPT group, a significant correlation between phthalates level and FSH peak was found, suggesting that phthalates could potentially cause self-limited breast development without progression to true precocious puberty ($p<0.05$).



CONCLUSIONS

These data demonstrate the widespread exposure to these compounds in the population. Though no significant difference in EDC concentrations was observed between the study groups and controls, these findings warrant further prospective investigations to clarify the potential role of EDCs on timing of puberty in girls