

**Title:** Metabolic profiles of meconium in preeclamptic and normotensive pregnancies

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**Abstract**

**Introduction.** Preeclampsia (PE) is a common vascular pregnancy disorder affecting maternal and fetal metabolism with severe immediate and long-term consequences in mothers and infants. During pregnancy, metabolites in the maternal circulation pass through the placenta to the fetus. Meconium, a first stool of the neonate, offers a view to maternal and fetoplacental unit metabolism and could add to knowledge on the effects of PE on the fetus and newborn. **Objectives.** To compare meconium metabolome of infants from PE and normotensive pregnancies. **Methods.** A cohort of preeclamptic parturients and normotensive controls were recruited in Tampere University Hospital during 2019-2022. Meconium was sampled and its metabolome analyzed using liquid chromatography – mass spectrometry in 48 subjects in each group. **Results.** Differences in abundances of 1263 compounds, of which 19 could be annotated, were detected between the two groups. Several acylcarnitines, androsterone sulfate, three bile acids, amino acid derivatives (phenylacetylglutamine, epsilon-(gamma-glutamyl)lysine and N-(phenylacetyl)glutamic acid), as well as caffeine and paraxanthine were lower in the PE group compared to the control group. Urea and progesterone were higher in the PE group. **Conclusion.** PE is associated with alterations in the meconium metabolome of infants. The differing abundances of several metabolites show alterations in the interaction between the fetoplacental unit and mother in PE, but whether they are a cause or an effect of the disorder remains to be further investigated.