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P209. Sphingolipids screening in plasma of women with preeclampsia.

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Context: Preeclampsia (PE) is the most common cause of mortality in pregnant women. we intend to show that sphingolipids are also involved in the pathological mechanism of PE in patients who are not obese and do not have metabolic syndrome. It is worth noting that sphingolipids are not the primary cause of PE. In the literature, it is suggested that the above-mentioned cytokines and lipids can be involved in the molecular mechanism initiated by the maternal immunology response to the foetal portion of the placenta. Immune system activation is associated with the origin of PE and other factors, including chemokines, activated neutrophils, and endothelial dysfunction. We believe that through this mechanism, a disturbance in biologically active lipid levels is also related to the pathophysiology of this syndrome.
Objectives: The aim of the study was to analyze the panel of 11 sphingolipids in the plasma of women with mild preeclampsia.
Patients: We recruited 21 women between 25-40 weeks gestation with diagnosed mild preeclampsia to the study group and 36 healthy women with uncomplicated pregnancies, in corresponding to the study group gestational age, to the control group.
Method: To assess the concentration of 11 sphingolipids in the blood plasma and blood fractions we used an ultra-high performance liquid chromatography coupled with triple quadrupole mass spectrometry (UHPLC/MS/MS).
Results and Main Outcome Measure(s): We showed a significant increase in the concentration of 8 sphingolipids in the plasma of women with preeclampsia: Sph ($p=0.0032$), S1P ($p=0.0289$), C20-Cer ($p<0.0001$), C18-Cer ($p< 0.0001$), C16-Cer ($p=0.012$), C18:1-Cer ($p=0.003$), C22-Cer ($p=0.0071$), C24:1-Cer ($p=0.0085$) in comparison to the control group.
Conclusions: We showed that selected sphingolipids, especially C20-Cer and C18-Cer are totally new factors in patomechanism of PE. Sph, C16, C18, C20 ceramides play important role in the antiproliferative processes. Interestingly some of sphingolipids, such S1P act contrary to the long-chain ceramides and "switch" autophagy toward cell survival. Thus, elevated levels of S1P in the PE can be a compensating and counteracting mechanism to proapoptotic ceramides.
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