

Preliminary study on the role of human defensins and interleukins in early and late preeclampsia

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Objective. Preeclampsia predisposes significantly to pregnancy-associated morbidity and mortality.

This study aims to evaluate levels of human defensins and interleukins compared to controls.

Materials and Methods. We recruited 30 pregnant women: 10 healthy pregnant women (CTR), 10 pregnant women with early preeclampsia (EP) and 10 pregnant women with late preeclampsia (LP). We evaluated biochemical and coagulation parameters. By gene expression, we assessed PCSK9, IL-2, IL-6, IL-8, IL-10, TNF- α and TGF- β . Moreover, we evaluated both the serum and gene levels of the defensins HBD-1, HBD-2, HBD-4 and HNP-1.

Results. Our results showed a difference between groups in gene expression levels of IL-6, $p < 0.001$ (EP *vs* CTR: median

11.7 *vs* 0.5, $p < 0.001$; LP *vs* CTR: median 3.3 *vs* 0.5, $p = 0.001$; EP *vs* LP: median 11.7 *vs* 3.3, $p = 0.005$) and IL-8, $p = 0.014$ (EP *vs* CTR: median 634.1 *vs* 225.6, $p = 0.012$ and EP *vs* LP: median 634.1 *vs* 214.5, $p = 0.013$) highlighting an activation of immune system during preeclampsia; on the other hand, higher serum levels of HBD1 in LP compared to CTR (median 278.8 *vs* 67.8, $p = 0.005$) and to EP (median 278.8 *vs* 68.6, $p = 0.001$) could play protective actions to prevent the loss of the foetus.

Conclusions. Our results showed an increase in gene expression levels of IL-6 and IL-8 in EP compared to LP and CTR, highlighting a massive activation of immune system especially in case of severe preeclampsia; however, higher levels of HBD1 in LP might indicate that the same immune system develops protective actions to prevent adverse outcome in these cases.