Preliminary data on expression of ZSCAN4 and DUX4 in pregnancy complicated by preeclampsia

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Objective. ZSCAN4 and DUX4 are involved in maintenance of stem cells and senescence and expressed at early stages in human embryos.
We aimed to evaluate their protein and gene levels in pregnancy complicated by preeclampsia (PE) compared to controls.
Materials and Methods. We collected a placental sample of 10 healthy controls, 10 women with early PE and 10 women with late PE. We analysed gene and protein levels of ZSCAN4 and DUX4 by quantitative RT-PCR and Western Blot.
Results. We reported an increase in ZCAN4 gene expression of 2.9 times compared to controls and 4.7 times compared to late PE by qRT-PCR. Western-blot analysis highlighted an increase in DUX4 in early PE equal to 0.8 compared to controls and 0.7 compared to late PE; the densitometric analysis of the protein levels of ZSCAN4 highlighted an increase in both the 57 (KDa, precursor) and 50 (KDa, active portion) bands of pregnant women with early PE of 2.2 and 0.7 respectively compared to controls and 2 and 0.7 compared to late PE.
Conclusions. With this preliminary study we paved the way for a panel of factors that might help to understand and monitor the syndrome; further studies on the expression of these two proteins in peripheral blood samples at the first stages of pregnancy could clarify a possible role of ZSCAN 4 and DUX4 in early prediction of PE.