The effect of progesterone administration on the expression of metastasis tumor antigens (MTA1 and MTA3) in placentas of normal and Dexamethasone-Treated rats

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Administration of Dexamethasone (DEX) induces intrauterine growth restriction (IUGR) in pregnant rats. IUGR can occur because of apoptosis of trophoblasts, which can be inhibited by progesterone administration. A group of genes called MTAs play a role in the proliferation and differentiation of trophoblasts. MTA1 upregulates their proliferation and differentiation, while MTA3 downregulates them. Hence, our hypothesis is that during IUGR, MTA1 expression decreases and MTA3 expression increases in the placenta and this is prevented by administering of progesterone. This study will investigate changes in placental protein content of MTA1 and MTA3 on 19 and 21 dg in the basal (BZ) and labyrinth (LZ) zones of normal, DEX-treated, and progesterone-treated placentas. Pregnant rats will be divided into 4 groups: control (V), DEX-treated (D), DEX- and progesterone-treated (DP) and progesterone-treated (P) groups. All groups will receive daily intraperitoneal injections starting from 15 dg. Animal dissection will be performed on 19 and 21 dg. Gene expression and protein content of both MTA1 and MTA3 will be studied in the BZ and LZ using Real-time PCR and Western blotting, respectively.

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